PLANS SYMBOLS

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

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

UTILITIES SYMBOLS

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

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

NOTE SECTION NUMBERS READ FROM THE SOUTH

CENTER SECTION 36 T.10 N. R.24 W.

T.10 N. R.24 W. 35 36 2 1 R.23 W. T.9 N.

PIT DATA

PIT NO. _____ Located in .....
Dead Haul .....

PIT NO. _____ Located in .....
Dead Haul .....

BEGIN 62-626-01 STA. 0+48

END 62-626-01 STA. 16+07 LT.
BEGIN 62-626-02 STA. 16+07 LT.

END 62-626-01 STA. 22+56.75 RT.
BEGIN 62-626-02 STA. 22+56.75 RT.

END 62-626-02 STA. 48+93.93

STOPPING SIGHT DISTANCE BASED ON 3.5' HEIGHT OF EYE, 0.5' HEIGHT OF OBJECT.

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

	TOTAL FEET		TOTAL MILES	62-626-01 FEET		62-626-01 MILES	62-626-02 FEET		62-626-02 MILES
GROSS LENGTH	*4,845.93	=	*0.9178	2,208.75	=	0.4183	3,286.93	=	0.6225
BRIDGE LENGTH	0.0	=	0.0	0.0	=	0.0	0.0	=	0.0
EXCEPTION	0.0	=	0.0	0.0	=	0.0	0.0	=	0.0
NET LENGTH	*4,845.93	=	*0.9178	2,208.75	=	0.4183	3,286.93	=	0.6225

*TOTAL LENGTH BASED ON OVERLAP OF 62-262-01 AND 62-626-02 BETWEEN STA. 16+07 TO 22+56.75

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

ADT (CURRENT YEAR) 1986 – 2550
ADT (FUTURE YEAR) 2006 4600
HCADT 5%
ΣN 18 (20 YEAR) 230,000
DESIGN LOAD 9 TON
STABILOMETER "R" VALUE 20
DESIGN SPEED 40 MPH

APPROVED Robert A Schmiesk CITY ENGINEER, FALCON HEIGHTS DATE 4/28/86

APPROVED John A Kirkwood CITY ENGINEER, LAUDERDALE DATE 4/28/86

RAMSEY COUNTY
DEPARTMENT OF PUBLIC WORKS

CONSTRUCTION PLAN: FOR GRADING, AGGREGATE BASE, BITUMINOUS BASE AND SURFACING, STORM SEWER, WATERMAIN, AND CONCRETE CURB AND GUTTER.

CSAH 26
(ROSELAWN AVENUE)

BETWEEN: TH 280 AND CLEVELAND AVE

FROM: A POINT 389.4 FEET EAST OF THE WEST 1/4 CORNER OF SECTION 17, TOWNSHIP 29N, RANGE 23W.

TO: A POINT 12.0 FEET WEST OF THE EAST 1/4 CORNER OF SECTION 17, TOWNSHIP 29N, RANGE 23W.

C.S.A.P. 62-626-01
C.S.A.P. 62-626-02
P-W-85-31 ROSEVILLE
P-86-15 ROSEVILLE

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	ESTIMATED QUANTITIES
4	TYPICAL SECTIONS & DETAILS
5	DRAINAGE CHART
6	DRAINAGE CHART & DETAIL
7-8	DETAILS
9-14	PLAN AND PROFILE SHEETS
15-29	CROSS SECTION SHEETS
29A	PLAN AND PROFILE (FULHAM STREET)
(2) 29B	CROSS SECTIONS (FULHAM STREET)

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 3-25-86 REG. NO. 14410 ENGR. D. D. Palen S.E.H.

RECOMMENDED FOR APPROVAL Ken Haas COUNTY ENGINEER DATE 4-25-86

RECOMMENDED FOR APPROVAL PLK TRAFFIC ENGR. DATE 4-1-86

RECOMMENDED FOR APPROVAL [signature] CITY ENGR. DATE 4/28/86

RECOMMENDED FOR APPROVAL DBA MAINT. ENGR DATE 4/28/86

RECOMMENDED FOR APPROVAL RHP CONST ENGR DATE 4-28-86

RECOMMENDED FOR APPROVAL LKF DESIGN ENGR. DATE 4-28-86

RECOMMENDED FOR APPROVAL JAB ADM. ENGR. DATE 4-2-86

APPROVED [signature] COORDINATING ENGR. DATE 4-28-86

APPROVED [signature] CHAIR OF THE RAMSEY COUNTY BOARD DATE

APPROVED Charles V. Hounsell CITY OF ROSEVILLE, ENGINEER DATE

APPROVED Tom Balcolm MAYOR, CITY OF FALCON HEIGHTS DATE 5-27-87

APPROVED Carol R. Nelson MAYOR, CITY OF LAUDERDALE DATE 5/21/87

MINNESOTA DEPARTMENT OF TRANSPORTATION

RECOMMENDED FOR APPROVAL Julie Skallman PLANS & SPEC. ENGINEER DATE 5/22/86

RECOMMENDED FOR APPROVAL [signature] DISTRICT STATE AID ENGINEER DATE 5/9/86

APPROVED [signature] DIRECTOR, OFFICE OF STATE AID DATE 5/29/86

PLAN REVISIONS		
DATE	SHEET NO.	BY
5-19-87	3, 9, 10	DEM
6-10-87	ADDED P-86-15 PLANS	D.I.P.

27-117 DAR

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES	S.A.P. 62-626-01 RAMSEY COUNTY ESTIMATED	S.A.P. 62-626-01 RAMSEY COUNTY FINAL	S.A.P. 62-626-01 LAUDERDALE ESTIMATED	S.A.P. 62-626-01 LAUDERDALE FINAL	S.A.P. 62-626-02 RAMSEY COUNTY ESTIMATED	S.A.P. 62-626-02 RAMSEY COUNTY FINAL	S.A.P. 62-626-02 FALCON HEIGHTS ESTIMATED	S.A.P. 62-626-02 FALCON HEIGHTS FINAL	S.A.P. 62-626-02 ROSEVILLE ESTIMATED	S.A.P. 62-626-02 ROSEVILLE FINAL	P-86-15 NON-PARTICIPATING ROSEVILLE ESTIMATED	P-86-15 NON-PARTICIPATING ROSEVILLE FINAL
	DIVISION I	STREET, STORM SEWER & RESTORATION															
	2021.501	MOBILIZATION	L.S.	1		0.36				0.39		0.09		0.16			
	2101.502	CLEARING	TREE	50		1						15		33		1	
	2101.507	GRUBBING	TREE	50		1						15		33		1	
	2104.501	REMOVE STORM SEWER PIPE	L.F.	949		500						100		344		5	
	2104.501	REMOVE FENCE, CHAIN-LINK	L.F.	2,550						2,550							
	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	S.Y.	252		218								34			
	2104.509	REMOVE GATE WELL	EACH	1								1					
	2104.509	REMOVE CATCH BASIN	EACH	21		13						1		6		1	
	2104.509	REMOVE MANHOLE	EACH	24		1								23			
	2104.521	SALVAGE FENCE, WOOD RAIL	L.F.	163		163											
	2104.523	SALVAGE CASTING ASSEMBLIES	EACH	37		17								20			
	2104.523	SALVAGE 21" R.C. APRON	EACH	1						1							
	2105.501	COMMON EXCAVATION (P)	C.Y.	14,164		4,363				6,256		1,344		1,787		414	
	2105.507	SUBGRADE EXCAVATION (P)	C.Y.	23,787		11,590				8,278				2,922		977	
	2105.521	GRANULAR BORROW (LV)	C.Y.	21,520		7,878				9,840				2,532		1270	
	2105.525	TOPSOIL BORROW (LV)	C.Y.	2,005		635						735		560		75	
	2130.501	WATER, DUST CONTROL	(M) GAL	100		50				33				17			
	2211.501	AGGREGATE BASE, CLASS 5 (100 % CRUSHED)	TON	9,698		3,941				3,172				2,085		500	
	2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	3204		128				119				69		44	
	2331.510	BINDER COURSE MIXTURE	TON	1,861		755				699				407			
	2331.514	BASE COURSE MIXTURE	TON	5,062		2,014				1,871				1,080		97	
	2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	116.8		45				41				25		5.8	
	2341.508	WEARING COURSE MIXTURE	TON	1,958		755				699				407		97	
	2341.605	BITUMINOUS DRIVEWAY RESTORATION	S.Y.	610		257								353			
	2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	2,111		832				850				370		59	
	2411.603	CONSTRUCT STONE RETAINING WALL	S.F.	1,758		24						1,320		189		225	
	2411.603	CONCRETE BLOCK RETAINING WALL	S.F.	2,458								2,458					
	2451.511	COARSE FILTER AGGREGATE (LV)	C.Y.	425		225				200							
	2451.513	FINE FILTER AGGREGATE (CV)	C.Y.	40		20				12				8			
	2501.515	15" RC PIPE APRON	EACH	2						2							
	2501.515	21" RC PIPE APRON	EACH	1		1				1							
	2501.573	INSTALL 21" RC PIPE APRON	EACH	1						1							
	2502.541	6" PERFORATED PE PIPE DRAIN	L.F.	101		63				27				11			
(1)	2503.541	15" RC PIPE SEWER, DESIGN 3006, CL. V	L.F.	1920		952				928						40	
	2503.541	18" RC PIPE SEWER, DESIGN 3006, CL. V	L.F.	166		84				82							
	2503.541	21" RC PIPE SEWER, DESIGN 3006, CL IV	L.F.	94		84				10							
	2506.506	CONSTRUCT MANHOLES, DESIGN F	L.F.	8		8											
	2506.506	CONSTRUCT MANHOLES, DESIGN B	L.F.	40.2		13.2				18						9	
	2506.506	CONSTRUCT MANHOLES, DESIGN C	L.F.	34.8		11.6				23.2							
	2506.507	CONSTRUCT CATCH BASINS, DESIGN LP4	L.F.	28.7		18.8				9.9						8	
(1)	2506.507	CONSTRUCT CATCH BASINS, DESIGN RC-2	L.F.	113		64.5				40.5							
	2506.507	CONSTRUCT CATCH BASINS, DESIGN B	L.F.	21		7.3				13.7							
	2506.507	CONSTRUCT CATCH BASINS, DESIGN H	L.F.	14.0		2.8				11.2							
	2506.511	RECONSTRUCT MANHOLES	L.F.	39.2		12.3								26.9			
	2506.512	RECONSTRUCT CATCH BASINS	L.F.	1						1						1	
	2506.516	CASTING ASSEMBLIES, R-1733	EACH	8		4				3						2	
(1)	2506.516	CASTING ASSEMBLIES, R-3067-L	EACH	39		19				18							
	2506.516	CASTING ASSEMBLIES R-2502-B	EACH	3		1				2							
	2506.521	INSTALL CASTING ASSEMBLIES	EACH	8		2								6			
	2506.522	ADJUST FRAME AND RING CASTINGS	EACH	29		11								13		5	

BASIS OF ESTIMATED QUANTITIES

2211.501	AGGREGATE BASE, CL. 5	110#/S.Y./IN.
2331.504	BIT. MATERIAL FOR MIXTURE	4.5%
2331.510	BINDER COURSE MIXTURE	110#/S.Y./IN.
2331.514	BASE COURSE MIXTURE	110/S.Y./IN.
2341.504	BIT. MATERIAL FOR MIXTURE	6.0%
2341.508	WEARING COURSE MIXTURE	110#/S.Y./IN.
2357.502	BIT. MATERIAL FOR TACKCOAT	0.05 GAL./S.Y.

P-86-15

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-3127-117

SURVEY:	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN:		1	4-29-86	ADDED CB77B & CB77C QUANT.
DRAWN:		2	6-10-87	ADDED P-86-15 QUANT.

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: 3-25-86 REG. NO. 14410

SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

ESTIMATED QUANTITIES

FILE NO.: 86068
DATE: 3-25-86
2 / 29

STATEMENT OF ESTIMATED QUANTITIES

	ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES	S.A.P. 62-626-01 RAMSEY COUNTY ESTIMATED QUANTITIES	S.A.P. 62-626-01 RAMSEY COUNTY FINAL QUANTITIES	S.A.P. 62-626-01 LAUDERDALE ESTIMATED QUANTITIES	S.A.P. 62-626-01 LAUDERDALE FINAL QUANTITIES	S.A.P. 62-626-02 RAMSEY COUNTY ESTIMATED QUANTITIES	S.A.P. 62-626-02 RAMSEY COUNTY FINAL QUANTITIES	S.A.P. 62-626-02 FALCON HEIGHTS ESTIMATED QUANTITIES	S.A.P. 62-626-02 FALCON HEIGHTS FINAL QUANTITIES	S.A.P. 62-626-02 ROSEVILLE ESTIMATED QUANTITIES	S.A.P. 62-626-02 ROSEVILLE FINAL QUANTITIES	P-86-15 NON-PARTICIPATING ROSEVILLE ESTIMATED QUANTITIES	P-86-15 NON-PARTICIPATING ROSEVILLE FINAL QUANTITIES
	2511.501	RANDOM RIPRAP, CL 2	C.Y.	3						3							
	2511.515	GEOTEXTILE FILTER	S.Y.	8						8							
	2531.507	6" CONCRETE DRIVEWAY PAVEMENT	S.Y.	682		478						84		120			
	2531.501	CONCRETE CURB & GUTTER, DESIGN B-624	L.F.	9,930				3,890				2,630		3,410			
	2557.501	WIRE FENCE, DESIGN 72-9322															
		W/3 STRAND BARBED WIRE	L.F.	2,510						2,510							
	2557.516	PEDESTRIAN GATES, 4'	EACH	1						1							
	2557.517	VEHICULAR GATES, 20'	EACH	2						2							
	2571.502	FURNISH & PLANT SHADE TREES,															
		CRIMSON MAPLE, 3½ " B&B	EACH	3								3					
	2575.505	SODDING	S.Y.	15,790		5,085						5,895		4,510		300	
	2575.531	COMMERCIAL FERTILIZER, ANALYSIS 12-12-12	TON	0.56		0.18						0.22		0.16			
	2104.501	REMOVE 8" C.I.P. WATERMAIN	L.F.	286		286											
	2104.505	REMOVE CONCRETE STEPS	S.Y.	4.5		4.5											
	2104.511	SAWCUT CONCRETE PAVEMENT	L.F.	170		138								32			
	2104.513	SAWCUT BITUMINOUS PAVEMENT	L.F.	1,657		545								1,062		50	
	2506.508	CONSTRUCT MANHOLES, SPECIAL															
		DESIGN 104	EACH	1						1							
	0504.602	8" M.J. GATE VALVE & BOX	EACH	2		2											
	0504.602	RELOCATE HYDRANT (LAUDERDALE)	EACH	1		1											
	0504.602	RELOCATE HYDRANT (ROSEVILLE)	EACH	1										1			
	0504.602	ADJUST VALVE BOX	EACH	22		11								11			
	0504.603	6" D.I.P., CL 53 HYDRANT LEAD	L.F.	16		8								8			
	0504.603	8" D.I.P., CL 52 WATERMAIN	L.F.	286		286											
	0504.604	2" THICK RIGID INSULATION	S.F.	345		254		64						81			
	0557.603	TEMPORARY FENCE	L.F.	2,750								2,750					
	0506.603	4" D.I.P., CL 53 SANITARY SEWER FORCEMAIN	L.F.	458										458			
	0557.603	INSTALL WOOD RAIL FENCE	L.F.	163		163											
	2573.602	SILT FENCE, HEAVY DUTY	L.F.	1588		286				250		899		153			
	2531.501	CONCRETE CURB & GUTTER, DESIGN B-612	L.F.	285												285	
	2531.501	CONCRETE CURB & GUTTER, DESIGN B-618	L.F.	755												755	
	DIVISION II	WATERMAIN, SANITARY SEWER, BITUMINOUS WALK								—NON-PARTICIPATING—							
		WATERMAIN						LAUDERDALE						ROSEVILLE			
	1	6" D.I.P. CL 52 WATERMAIN	L.F.	1,167				165						1,002			
	2	6" X 6" TAPPING SLEEVE AND VALVE	EACH	1				0.5						0.5			
	3	FITTINGS, D.I.P.	LBS.	246				50						196			
	4	6" M.J. GATE VALVE & BOX	EACH	3										3			
	5	HYDRANT	EACH	1										1			
	6	METER MANHOLE W/APPERTENANCES	L.S.	1				0.5						0.5			
	7	COARSE FILTER AGGREGATE (LV)	C.Y.	200				50						150			
		SANITARY SEWER															
(1)	0503.603	REMOVE & REPLACE 8" SANITARY SEWER-V.C.P	L.F.	96				96									
(1)	0503.602	REMOVE & REPLACE SERVICE WYE-8" X 4"	EA.	2				2									
	0503.603	REMOVE & REPLACE 4" SERVICE PIPE-P.V.C.	L.F.	30				30									
	2521.511	4" BITUMINOUS WALK	S.F.	20,768						20,768							

(2)

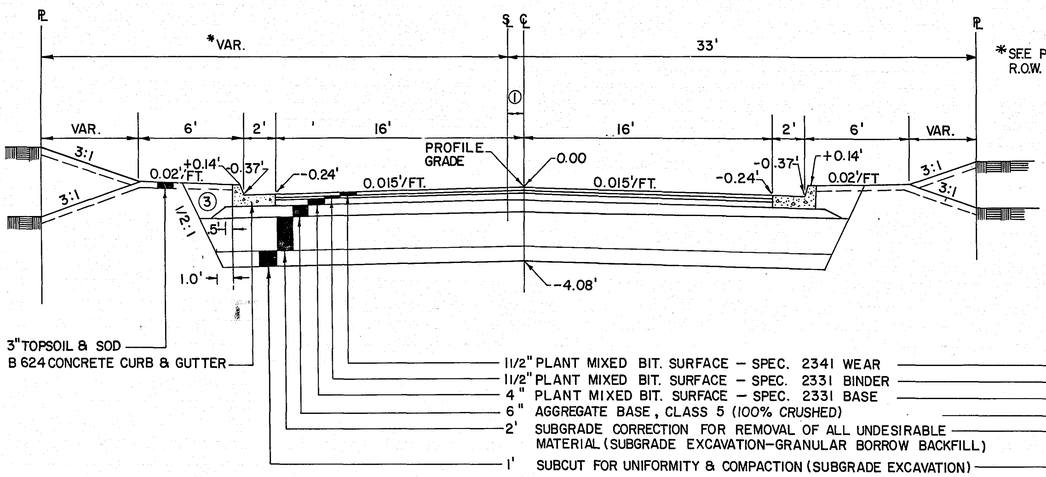
BASIS OF ESTIMATED QUANTITIES

2211.501	AGGREGATE BASE, CL. 5	110#/S.Y./IN.
2331.504	BIT. MATERIAL FOR MIXTURE	4.5%
2331.510	BINDER COURSE MIXTURE	110#/S.Y./IN.
2331.514	BASE COURSE MIXTURE	110/S.Y./IN.
2341.504	BIT. MATERIAL FOR MIXTURE	6.0%
2341.508	WEARING COURSE MIXTURE	110#/S.Y./IN.
2357.502	BIT. MATERIAL FOR TACKCOAT	0.05 GAL./S.Y.

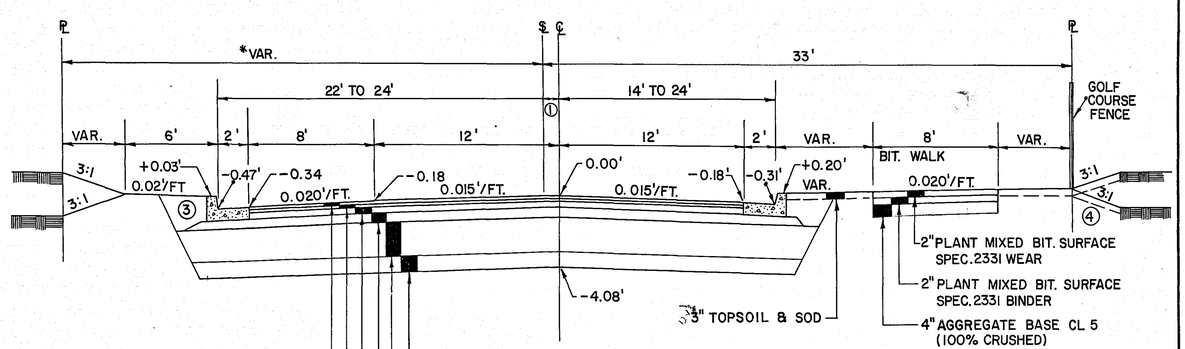
P-86-15

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-312-716

SURVEY:	CHECKED BY:	NO.	DATE	REVISIONS	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.	SHORT – ELLIOTT – HENDRICKSON, INC.	RAMSEY COUNTY, MINNESOTA	ESTIMATED QUANTITIES	FILE NO.: 86068
DESIGN.		1	5-19-87	LAUDERDALE SAN. SEWER		Saint Paul, Minnesota • Chippewa Falls, Wisconsin			DATE: 3-25-86
DRAWN:		2	6-10-87	ADDED P-86-15 QUANT.	DATE: 3-25-86 REG. NO 14410				3 / 29



TYPICAL SECTION
0 + 48.00 TO 23+04.75

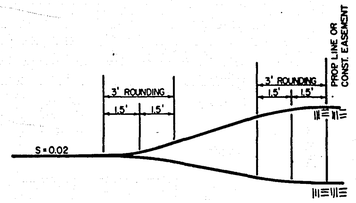


① 5.0'AT STA.1+00 TRANSITION TO 1.0' AT STA. 4+50
1.0'AT STA. 23+04.75 TRANSITION TO 0.30'AT STA.24+24.75

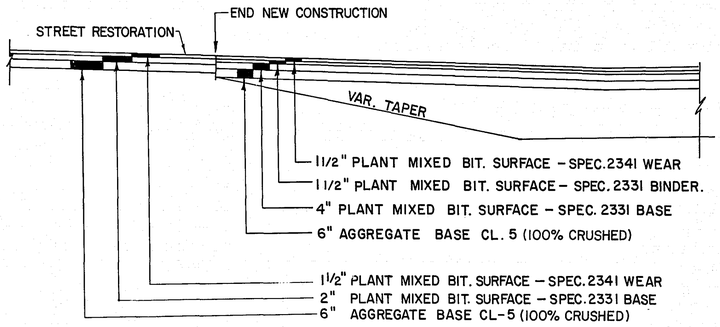
③ BACKFILL AREA TO BE CONSTRUCTED WITH MATERIAL FROM SUBGRADE CORRECTION AS DIRECTED BY THE ENGINEER.

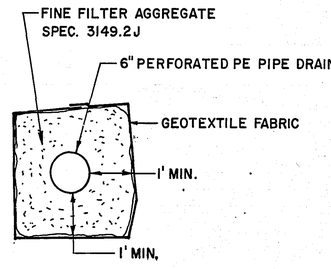
④ FILL SLOPE SHALL BE 6:1 FROM STA. 30+85± TO STA. 34+10± RT.

TYPICAL SECTION
23+04.75 TO 48+93.93

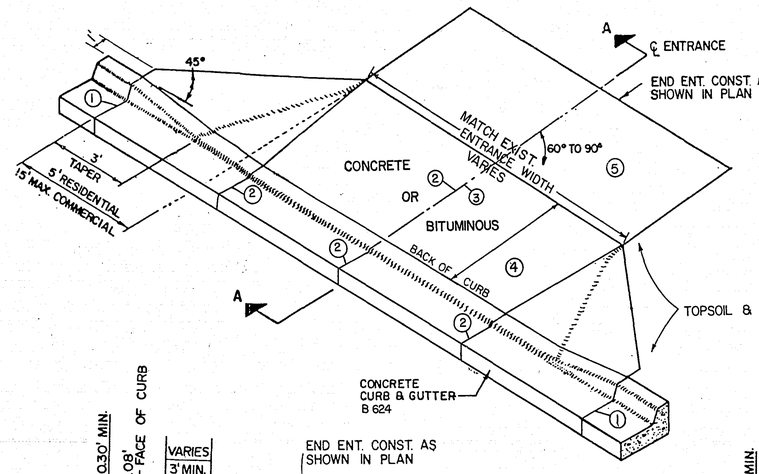


SLOPE ROUNDING DETAIL





SUBSURFACE DRAIN DETAIL



ENTRANCE DETAIL

① 1/2"EXPANSION JOINT AS NEEDED.

② PLACE JOINTS AS REQUIRED FOR CONCRETE ENTRANCE

③ CONTRACTION JOINT REQUIRED IF WIDTH EXCEEDS 16.0' FOR CONCRETE ENTRANCE.

④ APRON SECTION SHALL BE:
CONCRETE - LAUDERDALE
MATCH IN KIND - ROSEVILLE
CONCRETE - FALCON HEIGHTS

⑤ DRIVEWAY SECTION SHALL BE:
MATCH IN KIND - LAUDERDALE, ROSEVILLE*
CONCRETE - FALCON HEIGHTS

* EXISTING GRAVEL DRIVEWAYS SHALL BE CONSTRUCTED WITH BITUMINOUS SECTION.

GENERAL NOTE:

THE EXACT LOCATION AND WIDTH OF ENTRANCES TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
12' MIN.- 22' MAX. RESIDENTAL
18' MIN.- 32' MAX. COMMERCIAL

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31

SURVEY:	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: D.H.				
DRAWN: G.N.				

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: 3-25-86 REG. NO. 14410

SEH
SHORT - ELLIOTT - HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

TYPICAL SECTION & DETAILS

FILE NO.: 86068
DATE: 3-25-86
4
29

DRAINAGE CHART

STATION	LOCATION CONST. ℄	NO.	DESIGN	TYPE	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 MANHOLE LIN. FT.	INSTALL CASTING ASSEMBLY	REMARKS
		EXISTING STRUCTURES												
2+47	38'LT	1	ST.	CB				48.42		45.32				REMOVE
2+53	23'RT	2	ST.	CB				49.54		46.34				REMOVE
2+76	℄	3	SAN.	MH				49.91	49.50	41.06	1			ADJUST
2+86	15'LT	4	ST.	MH				49.05±	49.12	42.75±	1			ADJUST
2+94	32'LT	5	ST.	CB				48.73		45.58				REMOVE
2+95	34'RT	6	ST.	CB				48.30		44.30				REMOVE
4+31	14'LT	7	ST.	MH				47.07	46.94	39.07	1			ADJUST
5+96	2'RT	8	SAN.	MH				48.00	47.28	39.30				REMOVE
5+96	24'RT	9	SAN.	MH				47.61	47.12	38.91	1			ADJUST
6+14	44'LT	10	ST.	CB				45.22		41.92				REMOVE
6+25	15'LT	11	ST.	MH				47.57	47.25	34.17	1			ADJUST
6+26	24'RT	12	ST.	CB				46.59		43.00				REMOVE
9+05	31'RT	13	ST.	CB				48.69		45.59				REMOVE
9+24	6'RT	14	SAN.	MH				48.93	48.66	40.83	1			ADJUST
9+28	20'LT	15	ST.	MH				48.30	48.41	33.40	1			ADJUST
9+43	32'RT	16	ST.	CB				48.22		44.67				REMOVE
11+66	43'LT	17	ST.	CB				44.72		41.90±				REMOVE
12+37	17'LT	18	ST.	CB				45.19		41.29				REMOVE
12+66	23'LT	19	SAN.	MH				45.03	45.32	35.93	1			ADJUST
12+85	16'LT	20	ST.	MH				45.27	44.70	32.07		6.2	1	(1)
12+96	15'RT	21	ST.	CB				44.67		39.07				REMOVE
13+90	16'LT	22	ST.	CB				43.69		32.19				REMOVE
14+37	21'LT	23	SAN.	MH				44.01	44.39	27.16		6.1	1	(1)
14+38	22'RT	24	SAN	MH				44.62	44.41	27.52	1			ADJUST
15+89	17'RT	25	ST.	CB				42.90		37.65				REMOVE
15+99	30'LT	26	ST.	MH				39.67±	40.02	31.47±	1			ADJUST
16+08	18'RT	27	SAN.	MH				43.54	42.98	28.04	1			ADJUST
16+37	15'RT	28	ST.	CB				42.67		40.07				REMOVE
21+98	15'RT	29	TEL.	MH				37.22	35.74					ADJUST BY OTHERS
22+21	45'LT	30	ST.	CB				35.77		32.37				REMOVE
22+30	30'LT	31	ST.	MH				36.42	36.22	27.52	1			ADJUST
22+57	46'LT	32	SAN.	MH				36.48	36.16		1			ADJUST
22+66	27'LT	33	ST.	MH				36.31	35.48	27.31				REMOVE
22+72	45'LT	34	ST.	CB				35.74		32.34				REMOVE
22+94	25'RT	35	ST.	MH				34.14		26.44				REMOVE
27+54	23'LT	36	SAN.	MH				43.49	43.13	34.54	1			ADJUST
27+69	31'LT	37	ST.	MH				43.22	43.43	36.72	1			ADJUST
27+84	13'RT	38	NSP	MH				44.39	43.95					ADJUST BY OTHERS
27+94	21'LT	39	ST.	CB				43.55		40.35				REMOVE
28+06	19'RT	40	ST.	MH				45.61±	44.97	38.81±	1			ADJUST, M.H. BURIED
30+13	24'LT	41	SAN.	MH				49.40±	48.91	37.60±	1			ADJUST, M.H. BURIED
31+80	24'LT	42	SAN.	MH				50.64	50.50	39.54	1			ADJUST
31+96	19'RT	43	ST.	MH				50.81	50.84	44.71	1			ADJUST
32+56	46'LT	44	ST.	CB				50.89	50.94	48.29	1			ADJUST
32+74	30'LT	45	SAN.	MH				51.79	52.25	40.39		5.8	1	(1)
32+80	41'RT	46	ST.	CB				45.34		40.24				REMOVE, BULKHEAD TILE
32+84	47'LT	47	ST.	CB				51.20	51.46	47.90	1			ADJUST
32+96	14'RT	48	ST.	MH				53.78		46.58				REMOVE
33+05	21'LT	49	ST.	CB				52.56		46.71				REMOVE
33+10	23'LT	50	SAN.	MH				53.22	53.75	43.22		1.6	1	(2)
35+84	15'RT	51	ST.	MH				62.47	61.05	54.57	1			ADJUST
35+85	21'LT	52	ST.	MH				62.02	61.07	56.02	1			ADJUST
36+24	18'LT	53	SAN.	MH				63.16	61.93	51.81		4.0	1	(3)
37+33	47'LT	54	ST.	CB				65.35		61.85				O.K. LEAVE AS IS
37+48	18'LT	55	SAN.	MH				65.68	64.41	56.43		5.1	1	(4)
37+63	43'LT	56	ST.	CB				65.38		59.88				O.K. LEAVE AS IS
37+81	15'RT	57	ST.	MH				66.26		58.06				
37+87	22'LT	58	ST.	CB				65.30	64.95	59.80		1		(5)

DRAINAGE CHART

STATION	LOCATION CONST. ℄	NO.	DESIGN	TYPE	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 MANHOLE LIN. FT.	INSTALL CASTING ASSEMBLY	REMARKS
		EXISTING STRUCTURES												
38+23	36'RT	58A	ST.	CB				62.19						O.K. LEAVE AS IS
40+13	19'LT	59	SAN.	MH				71.40±	69.77	62.30±	1			ADJUST
40+66	50'LT	60	ST.	CB				71.63		68.33				O.K. LEAVE AS IS
40+80	19'LT	61	SAN.	MH				72.96	71.60	63.96		4.4	1	(6)
40+95	50'LT	62	ST.	CB				71.96		67.96				O.K. LEAVE AS IS
41+13	15'RT	63	ST.	MH				73.79		67.34				REMOVE
41+20	21'LT	64	ST.	CB				73.05		67.75				REMOVE
44+08	22'LT	65	SAN.	MH				78.90	78.35	69.08		6.0	1	(7)
45+79	15'RT	66	ST.	MH				79.68		74.68				REMOVE
45+79	21'LT	67	ST.	CB				79.09±		75.19±				REMOVE
46+00	20'RT	68	ST.	CB				78.48		74.98				REMOVE
48+95	18'LT	69	NWB	MH										O.K. LEAVE AS IS

① REMOVE CONE, PLACE 1'-4" M.H. SECTION, REPLACE CONE

② REMOVE TOPSLAB, PLACE 1'-4" M.H. SECTION, REPLACE CONE

③ REMOVE CONE, PLACE 3' M.H. SECTION, INSTALL TYPE B M.H. TOP SLAB

④ REMOVE CONE & 2' M.H. SECTION, REPLACE CONE

⑤ REMOVE TOPSLAB, INSTALL TYPE B, C, B, TOPSLAB

⑥ REMOVE CONE AND 1' SECTION, REPLACE CONE

⑦ REMOVE CONE AND PLACE 1' SECTION, REPLACE CONE

CLEAR AND GRUB CHART

STATION	LOCATION CONST. ℄	SIZE	CLEAR	GRUB
16+20 TO 17+45	25'LT TO 80' LT	4"-15"	31	31
19+57	30' RT	16"	1	1
20+94	30' LT	8"	1	1
20+95	30' LT	8"	1	1
20+97	30' LT	8"	1	1
21+16	32' LT	14"	1	1
21+18	32' LT	14"	1	1
21+28	31' LT	6"	1	1
21+42	30' LT	12"	1	1
21+51	32' LT	16"	1	1
21+53	31' LT	16"	1	1
21+59	33' LT	14"	1	1
21+65	31' LT	14"	1	1
25+07	28' RT	16"	1	1
32+77	30' RT	12"	1	1
35+49	27' RT	18"	1	1
41+00	23' RT	8"	1	1
41+47	24' RT	24"	1	1
44+97	25' RT	18"	1	1
TOTAL			49	49

REMOVAL CHART

STATION	LOCATION CONST. ℄	CONCRETE DRIVEWAY S.Y.	RC, C.M.P. & V.C.P. PIPE L.F.	MANHOLE EACH	CATCH BASIN EACH	CONCRETE CURB & GUTTER L.F.
2+47	38' LT		44		1	
2+53	23' RT		44		1	
2+94	32' LT		20		1	
2+95	34' RT		50		1	
4+47	21' LT	32				
6+14	44' LT		30		1	
6+26	24' RT		38		1	
7+30	25' LT	11				
7+33	23' RT	23				
7+78	23' LT	62				
9+05	31' RT		39		1	
9+43	32' RT		53		1	
10+60	16' LT	32				
11+04	17' RT	42				
12+37	17' LT		48		1	
12+82	42' RT	16				
12+96	15' LT		33		1	
13+90	16' LT				1	
15+89	17' RT		49		1	
16+37	15' RT		52		1	
20+63	25' LT		25			
22+10	31' LT		41			
22+20	41' RT		82			
22+21	45' LT		18		1	
22+66	27' LT		54	1		
22+72	45' LT		20		1	
22+94	25' RT		69	1		
27+94	21' LT		26		1	
28+89	25' LT	23.3				
30+77	33' LT	11				
32+96	14' RT		38	1		
33+05	21' LT		34		1	
33+72	27' LT		20			
34+45	26' LT		20			
35+02	26' LT		22			
37+34	44' LT					3
37+65	41' LT					4
37+81	15' RT			1		
40+66	41' LT					8
40+96	41' LT					8
41+13	15' RT			1		
41+20	21' LT		2		1	
45+79	21' LT		2		1	
45+79	15' RT			1		
46+00	20' RT		21		1	
TOTAL		252.3	944	26		23

C.S.A.P. NO.62-626-01, NO.62-626-02, P-W-85-31

SURVEY:
DESIGN: D.H.
DRAWN: D.H.

CHECKED BY:

NO.	DATE	REVISIONS

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: 3-25-86 REG. NO. 14410

SEH
SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

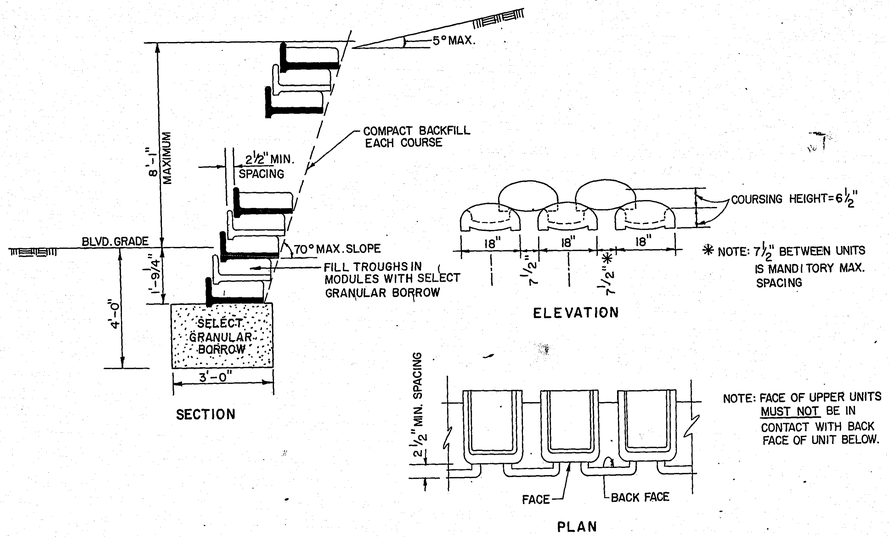
RAMSEY COUNTY, MINNESOTA

DRAINAGE CHART

FILE NO.: 86068
DATE: 3-25-86
5 / 29

DRAINAGE CHART

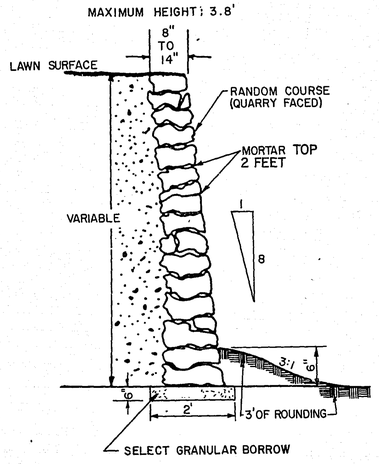
STATION	LOCATION	NO.	TYPE	DESIGN	CONST. HEIGHT LIN. FT	CASTING ASSEMBLY	ELEVATION PROFILE	ELEVATION ORIGNAL GRATE OR RING	ELEVATION NEW GRATE OR RING	ELEVATION C.B. or M.H. INVERT	ADJUST CASTING ASSEMBLY	FURNISH AND INST REINFORCED CONCRETE PIPE 12"	15"	18"	21"	24"			APRON	CLASS	DRAINS TO STRUCTURE NO.	DRAINS TO INVERT EL.	REMARKS
	NEW STRUCTURES																						
2+20	19'LT	70	CB	RC-2	3.5	A			49.99	46.49			45								71	46.04	
2+56.5	46'RT	71	CB	RC-2	4.24	A			50.28	46.04			31								73	45.73	
2+59.5	46'LT	72	CB	RC-2	4.01	A			49.48	45.47			40								4	44.91	
2+87.5	46'RT	73	CB	RC-2	4.33	A			50.06	45.73			63								4	44.55	
2+90.5	46'LT	74	CB	RC-2	3.50	A			49.28	45.78			31								72	45.47	
4+93.70	19.5'LT	75	CB	LP-4	4.78	D			46.99	42.21			8								76	42.13	
4+93.70	13.5'LT	76	MH	B	8.19	B			46.65	38.46±													BUILD OVER EXIST.
4+93.70	19.5'RT	77	CB	LP-4	4.78	D			46.99	42.21			35								76	41.80	
~~5+81~~	~~46'LT~~	~~77B~~	~~CB~~	~~RC-2~~	~~3.5~~	~~A~~			~~45.40~~	~~41.90~~			~~31~~								~~77C~~	~~41.59~~	
5+96	2'RT	77A	MH	F	7.98	B			47.28	39.30													BUILD OVER EXIST.
~~6+12~~	~~46'LT~~	~~77C~~	~~CB~~	~~RC-2~~	~~3.81~~	~~A~~			~~45.40~~	~~41.59~~			~~34~~								11	~~41.25~~	
6+44	19'LT	78	CB	RC-2	3.88	A			47.18	43.30			20								11	43.10	
6+44	19'RT	79	CB	RC-2	3.50	A			47.18	43.68			38								78	43.30	
9+05.5	49'LT	80	CB	LP-4	4.66	D			49.35	44.69			24								81	44.45	
9+28	49'RT	81	MH	B	5.0	B			49.20	44.20				68							15	43.38	
9+28	65'RT		STUB							44.36				16							81	44.20	STUB
9+44.5	49'RT	82	CB	LP-4	4.57	D			49.20	44.63			21								81	44.45	
11+66	44'LT	83	CB	H	2.82	C			44.72	41.90			55								84	41.35	
12+13	19'LT	84	CB	B	3.88	A			45.23	41.35			71								20	39.00	
12+13	19'RT	85	CB	RC-2	3.50	A			45.23	41.73			38								84	41.35	
12+49.4	46'LT	86	CB	B	3.43	A			46.24	42.81			72								20	40.00	
12+49.4	46'RT	87	CB	RC-2	3.50	A			45.32	41.82			31								88	41.51	
12+80.6	46'LT	88	CB	RC-2	3.65	A			45.16	41.51			31								20	41.20	
12+80.6	70'RT	89	CB	RC-2	3.50	A			46.70	43.20			39								86	42.81	
13+90	16'LT	90	MH	C	11.57	B			43.76	32.19±													BUILD OVER EXIST.
15+57	19'LT	91	CB	RC-2	4.57	A			43.09	38.52			45								26	36.99	
15+57	19'RT	92	CB	RC-2	4.19	A			43.09	38.90			38								91	38.52	
15+93.5	46'RT	93	CB	RC-2	3.50	A			43.61	40.11			31								94	39.80	
16+24.5	46'RT	94	CB	RC-2	3.85	A			43.65	39.80			80								26	37.08	
19+00	19'LT	95	CB	B	4.38	A			41.38	37.00			49								98A	36.05	
19+00	19'RT	96	CB	RC-2	4.00	A			41.38	37.38			38								95	37.00	
19+21	36'RT	97	CB	RC-2	3.63	A			42.35	38.72			28								98	38.44	
19+49	36'LT	98	CB	RC-2	3.78	A			42.22	38.44			17								98A	36.57	
19+49	19'LT	98A	MH	B	4.87	B			40.92	36.05			254								99	31.12	
22+03	19'LT	99	CB	B	4.38	A			35.50	31.12			49								31	30.63	
22+03	19'RT	100	CB	RC-2	4.00	A			35.50	31.50			38								99	31.12	
22+19	42'RT	101	APRON							28.54				84					21"		104	26.68	
~~22+27~~	~~44'LT~~	~~119~~	~~CB~~	~~H~~	~~3.44~~	~~C~~			~~35.00~~	~~31.56~~			~~15~~										
22+41.25	46'LT	102	CB	RC-2	4.36	A			35.77	31.41			19								31	31.22	
22+66	27'LT	103A	MH	B	8.17	B			35.48	27.31													BUILD OVER EXIST.
22+72.25	46'LT	103	CB	RC-2	4.36	A			35.57	31.21			21								103A	31.00	
23+01	31'RT	104	MH	SPEC.	8.80	B			35.28	26.44				82							31	27.52	
23+26.17	20.2'LT	105	CB	LP-4	5.69	D			34.99	29.30			60								103A	28.70	
23+26.17	18.8'RT	106	CB	LP-4	4.20	D			35.01	30.81			39								105	29.64	
24+32	44'LT	107	APRON							30.40			110								105	29.30	
28+00	23'LT	108	CB	RC-2	4.01	A			44.01	40.00			35								37	39.34	
28+06	15'LT	109	CB	RC-2	4.00	A			44.16	40.16			4								4	40.12	
31+50	62'RT	109A	CB	H	7.7	C			47.7±	40.0±													BUILD OVER EXIST.
32+84	47'LT	47	CB	EXIST.	2.95				51.20	48.25			40								111	47.85	
32+96	15'RT	110	CB	C	5.81	A			52.39	46.58													BUILD OVER EXIST.
33+02	12'LT	111	MH	B	4.90	A			52.75	47.85			27								110	47.58	
33+18	23'LT	112	CB	RC-2	3.98	A			52.97	48.99			18								111	48.79	
37+81	15'RT	113	CB	C	6.97	A			65.03	58.06													BUILD OVER EXIST.
41+13	15'RT	114	CB	C	5.35	A			72.69	67.34													BUILD OVER EXIST.
41+18	23'LT	115	CB	B	4.98	A			72.74	67.76±			4								114	67.37	
45+79	15'RT	116	CB	C	5.10	A			79.78	74.68													BUILD OVER EXIST.
45+79	23'LT	117	CB	RC-2	4.38	A			79.61	75.23±			2								116	74.68	
46+00	41'RT	118	APRON							79.00			38								116	75.20	
48+55	55'RT													10									R&R R.C.APRON ADD 16'-21"
TOTAL												1880	166	94									



CONCRETE BLOCK RETAINING WALL

FLAGSTONE RATAINING WALL

3+26± TO 3+46± 23'LT.
23+87± TO 26+20± 35'RT.
26+15± TO 27+26± 37'LT.
27+16± TO 28+67± 31'RT.
42+60± TO 45+20± 31'RT.



The following Standard Plates, approved by the FEDERAL HIGHWAY ADMINISTRATION, shall apply on this project.

MN/DOT STANDARD PLATES	
PLATE NO.	**DESCRIPTION**
0004 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000 K	REINFORCED CONCRETE PIPE
3006 D	GASKET JOINT FOR REINFORCED CONCRETE PIPE
3100 F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3133 B	RIPRAP AT R.C.P. OUTLETS
3145 D	CONCRETE PIPE TIES
4000 I	MANHOLE OR CATCH BASIN
4005 K	MANHOLE OR CATCH BASIN
4006 K	MANHOLE OR CATCH BASIN
4011 D	PRECAST CONCRETE BASE
4021 C	PRECAST CURB OPENING CATCH BASIN
4101 C	RING CASTING FOR MANHOLE OR CATCH BASIN
4180 H	MANHOLE OR CATCH BASIN STEP
7036 C	PEDESTRIAN CURB RAMP
7100 F	CONCRETE CURB AND GUTTERS
8000 I	STANDARD BARRICADES
9322 I	CHAIN LINK FENCE
4020 E	MANHOLE OR CATCH BASIN

CASTINGS

A = NEENAH INLET FRAME, GRATE & CURB BOX NO. R-3067-C OR EQUAL.

B = NEENAH MANHOLE FRAME AND COVER NO. R-1733 OR EQUAL.

C = NEENAH CATCH BASIN FRAME R-2502-B, GRATE TYPE D OR EQUAL.

D = RING CASTING MHD 790-2, COVER CASTING NO. 712 (INCLUDE WITH STRUCTURE, NOT SEPARATE PAY ITEM).

C.S.A.P. NO.62-626-01, NO.62-626-02, P-W-85-31 27-117

SURVEY:
DESIGN: D.H.
DRAWN: D.H.
CHECKED BY:

NO.	DATE	REVISIONS
①	~~4-29-86~~	ADDED CB 77B & CB 77C

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: 3-25-86 REG NO. 14410

SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

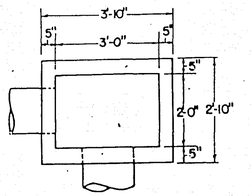
RAMSEY COUNTY, MINNESOTA

DRAINAGE CHART AND DETAILS

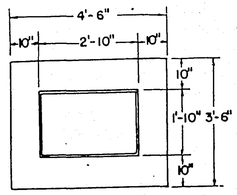
FILE NO.: 86068
DATE: 3-25-86

6/29

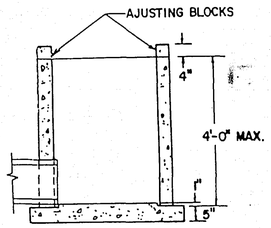
CATCH BASIN DESIGN RC-2



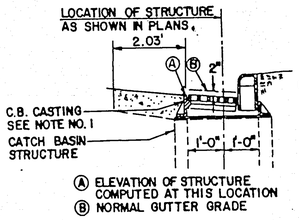
CATCH BASIN PLAN



BASE SLAB PLAN



SECTIONAL VIEW
CATCH BASIN & BASE SLAB



INSTALLATION DETAIL

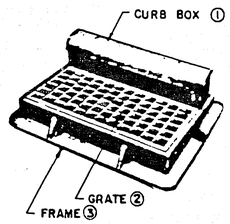
NOTES

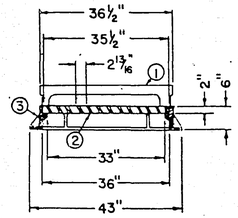
1. CASTING ASSEMBLY-SEE DETAIL THIS SHEET.
2. PIPE CUT-OUTS TO BE LOCATED WHERE REQUIRED.
3. ALTERNATE CAST-IN-PLACE BASE SLAB CAN BE USED.
4. INSTALL AS PER MN./DOT STD. PLATE NO. 7111 & DETAIL THIS SHEET.
5. REINFORCING: SINGLE LINE STEEL WIRE FABRIC.
   WALL = W3.5 x W3.0 HAVING AN AREA OF NOT LESS THAN .21 SQ. IN. PER FOOT OF HEIGHT.
   BASE = W4.0 W4.0 HAVING AN AREA OF NOT LESS THAN .16 SQ. IN. PER FOOT OF HEIGHT.
6. ALTERNATE CONSTRUCTION-THE CATCH BASIN MAY BE CONSTRUCTED OF BLOCK OR BRICK CONFORMING TO THE REQUIREMENTS OF MN./DOT SPEC. 2506 AND AS DIRECTED BY THE ENGINEER.

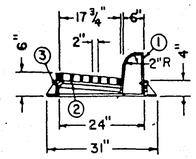
CASTING ASSEMBLY FOR DESIGN RC-2 CATCH BASIN

NOTES:

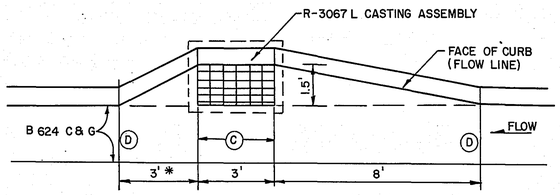
1. MATERIALS CAST GRAY IRON, CLASS 30, MN/DOT SPEC. REFERENCE 3321
2. CURB BOX HEIGHT SHALL BE ADJUSTABLE 6" TO 9"
3. SEE CATCH BASIN-DESIGN RC-2 DETAIL FOR CASTING INSTALLATION DETAIL.





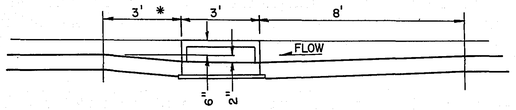


CURB OPENING CATCH BASIN-DESIGN RC-2 & DESIGN B &C



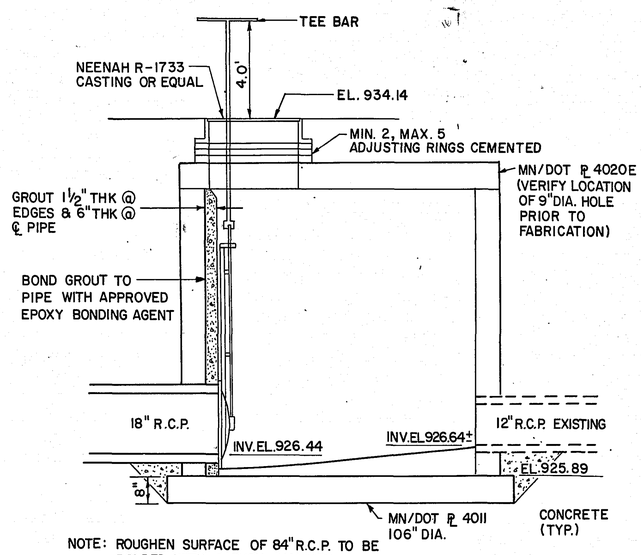
Ⓒ CONSTRUCTION JOINT
Ⓓ 1/2" EXPANSION MATERIAL
* DEMENSION TO BE 8' WHEN STRUCTURE INSTALLED AT LOW POINT IN GRADE

PLAN VIEW



ELEVATION

GATEWELL MANHOLE SPECIAL DESIGN 104

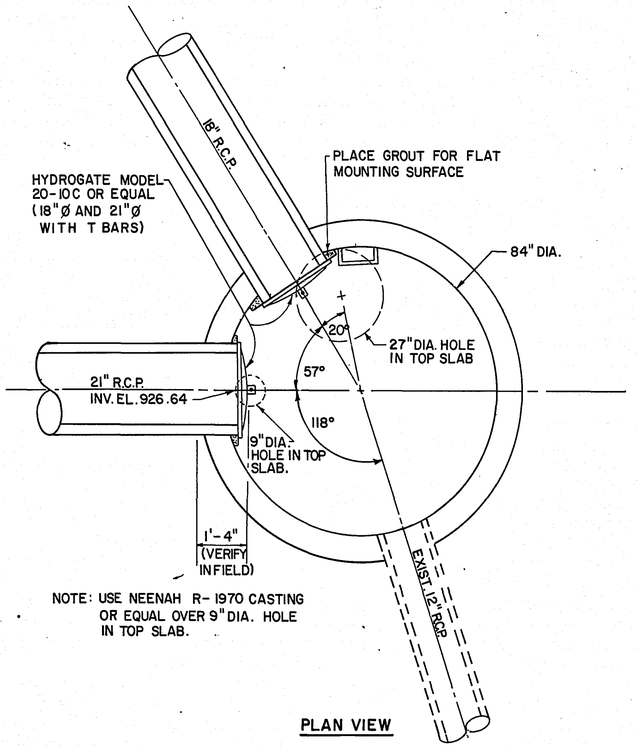


NOTE: ROUGHEN SURFACE OF 84"R.C.P. TO BE BONDED WITH A BUSH-HAMMER.

ELEVATION

STRUCTURE SCHEDULE

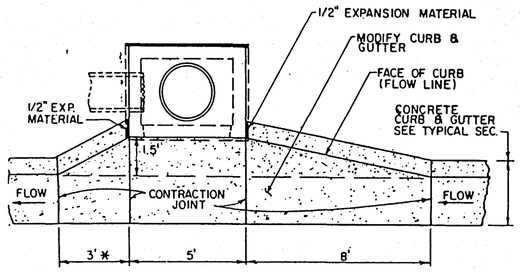
DIMENSIONS	MANHOLE OR CATCH BASIN DESIGN											
	B	B-1	C	C-1	D	D-1	E	E-1	F	F-1	G	G-1
P	48"	48"	60"	60"	72"	72"	84"	84"	96"	96"	102"	102"
K	6"	11"	7"	18"	8"	25"	9"	32"	9"	38.5"	9"	41.5"
T	6"	6"	8"	8"	8"	8"	8"	8"	8"	8"	8"	8"
W	58"	58"	72"	72"	86"	86"	100"	100"	113"	113"	119"	119"
H	27"	36"	27"	36"	27"	36"	27"	36"	27"	36"	27"	36"
OPENING	ECC.	CON.	ECC.	CON.	ECC.	CON.	ECC.	CON.	ECC.	CON.	ECC.	CON.



NOTE: USE NEENAH R-1970 CASTING OR EQUAL OVER 9" DIA. HOLE IN TOP SLAB.

PLAN VIEW

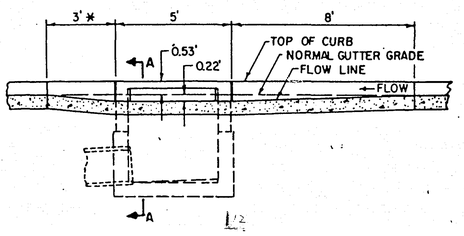
CURB OPENING CATCH BASIN-DESIGN LP INSTALLATION DETAIL

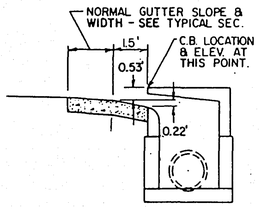


PLAN VIEW

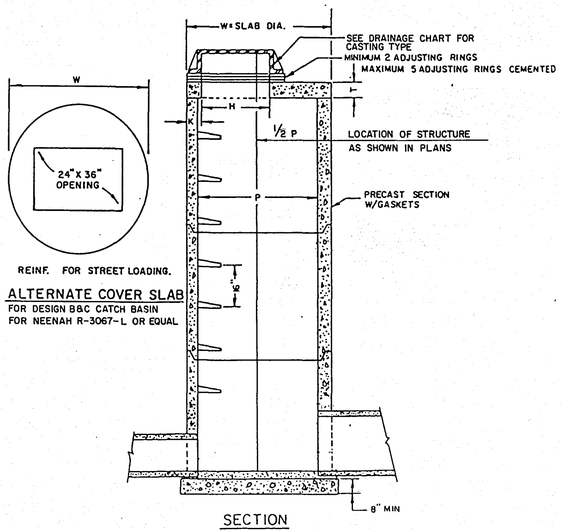
NOTES:

1. * DIMENSION SHALL BE 8' WHEN STRUCTURE INSTALLED AT LOW POINT IN GRADE
2. CATCH BASIN - DESIGN LP - SEE MN/DOT STD. PL. NO. 4021C.
3. TOP OF CATCH BASIN SHALL BE INSTALLED AT SAME SLOPE AS BLVD. GRADES AND TOP OF CURB GRADE EACH SIDE OF STRUCTURE.
4. ELEVATION OF STRUCTURE IS COMPUTED AT LOCATION SHOWN IN SEC. A-A AT ℄ OF C.B. OPENING.





SECTION AA



REINF. FOR STREET LOADING.

ALTERNATE COVER SLAB
FOR DESIGN B&C CATCH BASIN
FOR NEENAH R-3067-L OR EQUAL

SECTION

STORM SEWER M.H. OR C.B. DESIGN "B"(B-1) THRU "G"(G-1)

27-117

C.S.A.P. NO.62-626-01, NO.62-626-02, P-W-85-31

SURVEY:	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN. D.H.				
DRAWN: G.N.				

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: 3-25-86 REG. NO. 14410

SEH

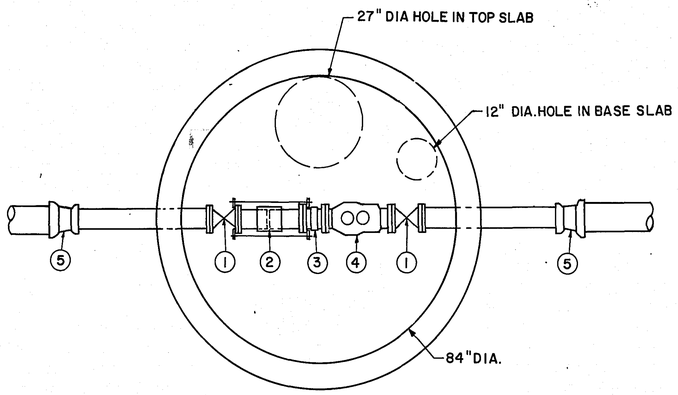
SHORT - ELLIOTT - HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

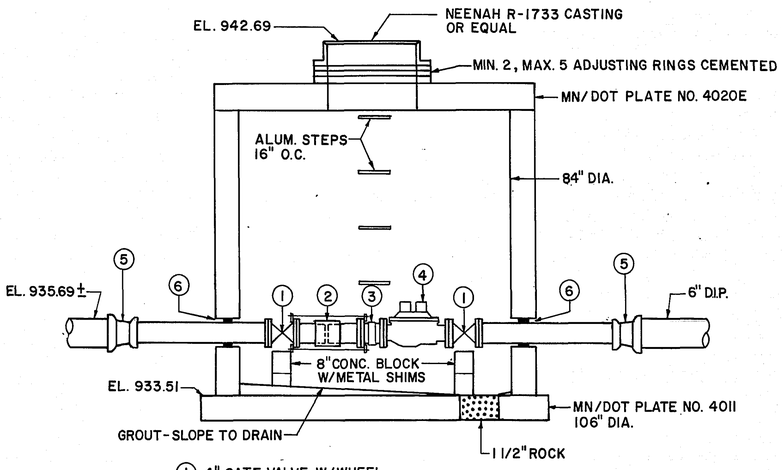
DETAILS

FILE NO.: 86068
DATE: 3-25-86
7 / 29

METER MANHOLE



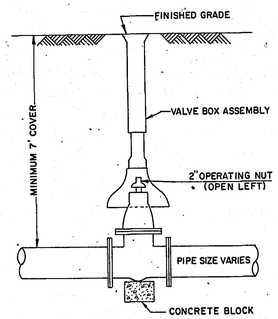
PLAN VIEW



(1) 4" GATE VALVE W/WHEEL
(2) 4" COUPLING - DRESSER STYLE 38 OR EQUAL
(3) 4" TURBINE STRAINER - TRIDENT NEPTUNE TURBINE OR EQUAL
(4) 4" COLD WATER METER - TRIDENT NEPTUNE TRU/FLOW OR EQUAL
(5) 4" X 6" REDUCER W/RETAINER GLANDS
(6) 4" WALL SLEEVE - LINK SEAL OR EQUAL.

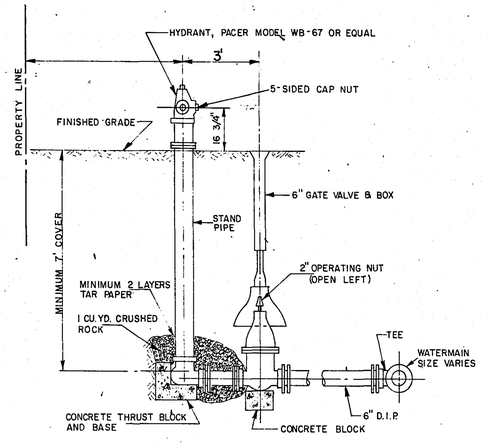
ELEVATION

GATE VALVE & BOX DETAIL (ROSEVILLE)

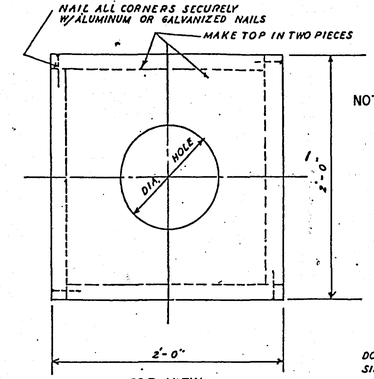


ELEVATION

HYDRANT DETAIL (ROSEVILLE)



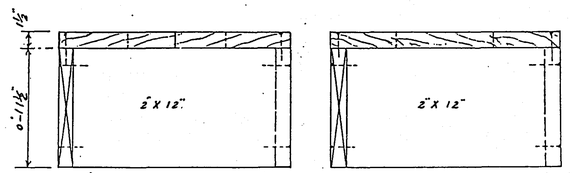
DRIP BOX DETAIL (LAUDERDALE)



NOTE: SEE SPECIFICATION FOR ALTERNATE ROCK/PLASTIC DRAINAGE OPTION.

TOP VIEW

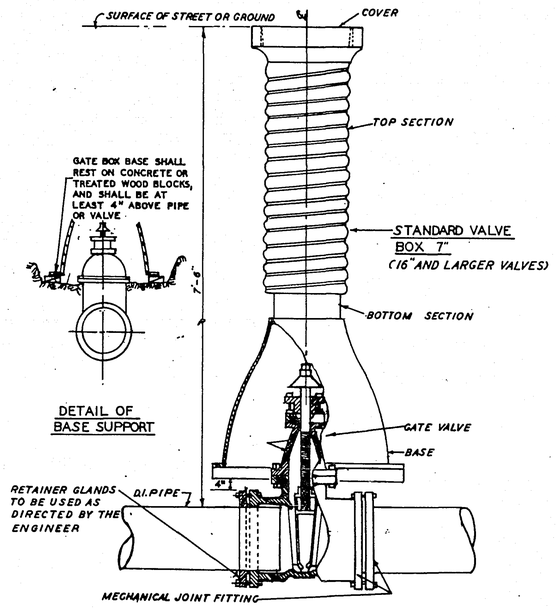
HYDRANT	HOLE DIA.
DOUBLE PUMPER NOZZLE	11"
SINGLE " "	10"
MUELLER (MOD. NO. A-24015)	9"
WATEROUS (MOD. NO.-WB-59)	8½"



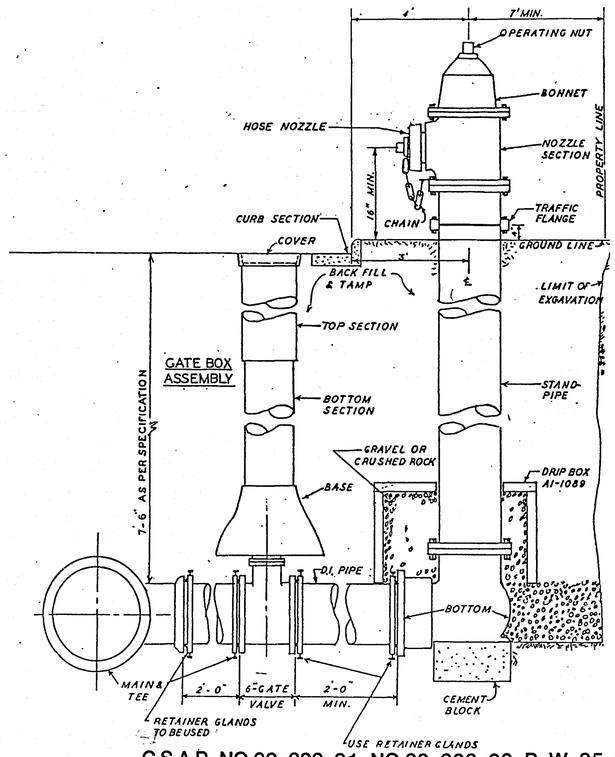
FRONT VIEW SIDE VIEW

USE STANDARD LUMBER-SURFACE 4 SIDES & TREATED FOR BELOW GROUND INSTALLATION

GATE VALVE & BOX DETAIL (LAUDERDALE)



HYDRANT DETAIL (LAUDERDALE)



27-117

C.S.A.P. NO.62-626-01, NO.62-626-02, P-W-85-31

SURVEY:	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: D.H.				
DRAWN: D.H.				

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: 3-25-86 REG. NO. 14410

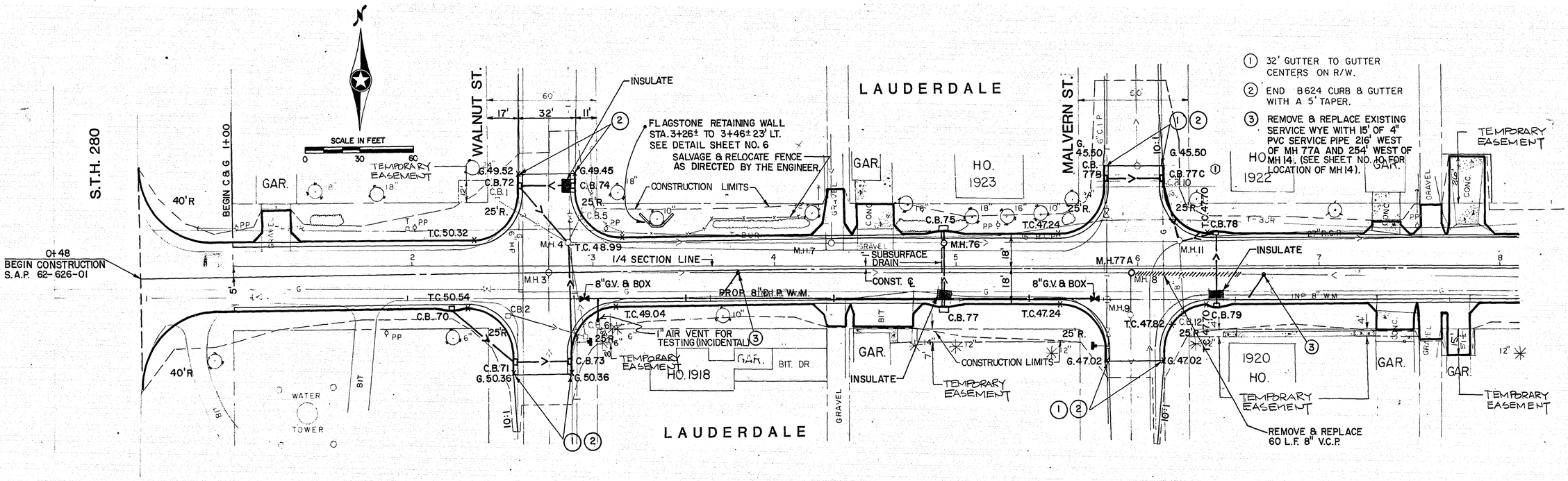
SEH

SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

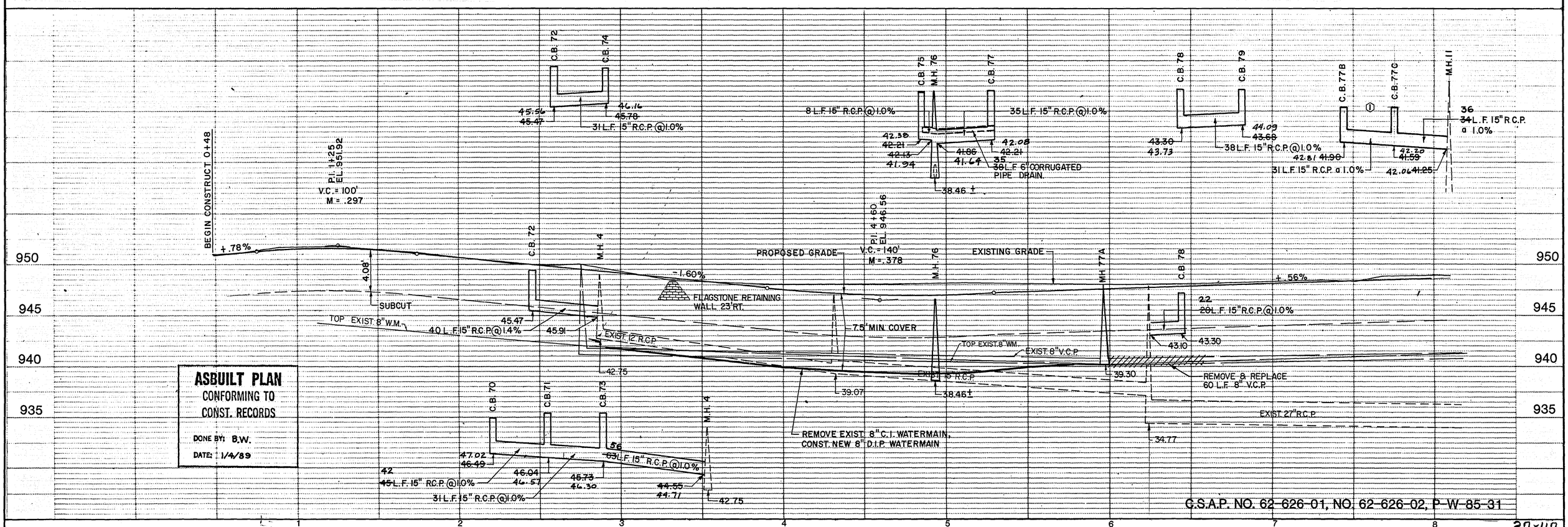
RAMSEY COUNTY, MINNESOTA

DETAILS

FILE NO.: 86068
DATE: 3-25-86
8 / 29



ROSELAWN AVENUE



ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: B.W.
DATE: 1/4/89

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31

27-117

SURVEY:	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: D.H.		①	4-29-86	ADDED CB 77B & CB 77C
DRAWN: D.H.			5-9-86	LAUDERDALE SAN. SEWER

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 3-25-86 Reg. No. 14410

SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

STREET, STORM SEWER, AND WATERMAIN

FILE NO.: 86068
DATE: 3-25-86
9 / 29

ROSELAWN AVENUE

(1) 32' GUTTER TO GUTTER CENTERS ON R/W.

(2) END B624 CURB & GUTTER WITH A 5' TAPER.

(4) 6"x6" TAPPING SLEEVE & 6"G.V & BOX.

END S.A.P. 62-626-01 STA. 16+07 LT.

BEGIN S.A.P. 62-626-02 STA. 16+07 LT.

EUSTIS ST. | CARL ST. | LAUDERDALE | PLEASANT ST. | ROSEVILLE

TEMPORARY EASEMENT

HO. 1921

HO. 1926

HO. 1930

HO. 2377-75

GAR.

SCALE IN FEET 0 30 60

TEMPORARY EASEMENTS

25 L.F. 6" CORRUGATED PIPE DRAIN AS DIRECTED BY THE ENGINEER.

PERMANENT EASEMENT CONSTRUCTION LIMITS

TEMPORARY EASEMENT

REMOVE & REPLACE 9 L.F. 8" V.C.P.

REMOVE & REPLACE 27 L.F. 8" V.C.P.

1/4 SECTION LINE

CONST. ℄

INSULATE

PROP. 6" D.I.P. W.M.

S.A.P. 62-626-02

S.A.P. 62-626-01

1917 HO. TEMPORARY EASEMENT

1918 HO.

1917 HO.

TEMPORARY EASEMENT

TEMPORARY EASEMENT

CONSTRUCTION LIMITS

SALVAGE AND INSTALL HYD. 8 L.F - 6" D.I.P.

TEMPORARY EASEMENT

INSULATE

C.B. 80 | M.H. 81 | C.B. 82

24 L.F. 15" R.C.P. @ 1.0% — 18 L.F. 15" R.C.P. @ 1.0%

45.39 44.69 | 44.49 44.45 | 44.39 44.20 | 44.45 45.19 | 45.61 44.63

P.I. 9+01 EL. 949.03 V.C. = 50' M = .11'

+.56% | -1.20% | -.98% | -.50%

EXIST. TOP W.M. | EXIST. 8" V.C.P. | 40.83 | 76' | 4.08' SUBCUT

EXIST. 27" R.C.P.

P.I. 10+50 EL. 947.24

C.B. 87 | C.B. 88 | M.H. 20 | C.B. 86 | C.B. 89

31 L.F. 15" R.C.P. @ 1.0%

42.14 41.82 | 41.84 41.51 | 38.90 41.20

70 | 72 L.F. 15" R.C.P. @ 3.9% | 40.00 40.10

40 | 39 L.F. 15" R.C.P. @ 1.0% | 43.46 43.20 | 42.81 42.86

EXIST. 27" RCP | EXIST. 30" RCP

32.07

C.B. 85 | C.B. 84 | M.H. 20 | M.H. 90

70 | 71 L.F. 15" R.C.P. @ 3.9%

38 L.F. 15" R.C.P. @ 1.0%

42.18 41.73 | 41.35 41.73 | 39.00 40.20

6" W.M.

P.I. 13+00 EL. 944.79

35.93

EXIST. 27" R.C.P. | EXIST. 30" R.C.P.

32.07 | 32.19

C.B. 83 | C.B. 84

52 | 55 L.F. 15" R.C.P. @ 1.0%

41.90 42.08 | 41.35 41.73

M.H. 15 | M.H. 81

61 | 68 L.F. 18" R.C.P. @ 1.2%

43.38 43.80 | 44.20 44.39 | 44.49 44.36

16 L.F. 18" R.C.P. @ 1.0% PLUG UPSTREAM END.

C.B. 92 | C.B. 91 | M.H. 26

33.30 30.90 | 38.65 32.58 | 36.99 37.00

36 | 30 L.F. 15" R.C.P. @ 1.0%

45 L.F. 15" R.C.P. @ 3.4%

6" W.M. | PROP. 6" D.I.P. W.M.

EXIST. 30" R.C.P.

31.47

EXIST. 8" V.C.P.

27.52 | 28.04

C.B. 94 | C.B. 93 | M.H. 26

71 | 80 L.F. 15" R.C.P. @ 4.0%

37.00 36.60 | 39.80 40.06 | 40.86 40.11

31 L.F. 15" R.C.P. @ 1.0%

31.47

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: B.W.
DATE: 1/4/89

7' MIN. COVER

950 | 945 | 940 | 935 | 930

9 | 10 | 11 | 12 | 13 | 14 | 15 | 16

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31

27-117

SURVEY: ..	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: D.H.			5-19-87	LAUDERDALE SAN. SEWER
DRAWN: D.H.				

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 3-25-86 Reg. No. 14410

SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

STREET, STORM SEWER, AND WATERMAIN

FILE NO.: 86068
DATE: 3-25-86
10 / 29

① 32' GUTTER TO GUTTER CENTERED ON R/W
② END B624 CURB & GUTTER WITH A 5' TAPER

ROSEVILLE

TEMPORARY EASEMENTS

SILT CURTAIN AS DIRECTED BY THE ENGINEER

REMOVE STEPS

WOODS

CONSTRUCTION LIMITS

METER M.H.94A-SEE DETAIL SHEET NO. 8

LAKE ST.

60'

21' 29' 10'

6" C.I.P.

6" G.V. & BOX

C.B.97 C.B.98

G.42.62

15'R.

C.B.95 T.C.41.90

M.H.98A T.C.41.19

6"X6" TEE

S.A.P. 62-626-02

S.A.P. 62-626-01

1/4 SECTION LINE

CONST. ℄

C.B.96

CONC

SCALE IN FEET 0 30 60

TEMPORARY EASEMENTS

PROP. 6" D.I.P. W.M.

12" CMP

P-86-15

S.A.P. 62-626-02

6"X6" TEE

6" G.V. & BOX HYD.

6" 1/8 BEND

C.B.119

C.B.99

T.C. 36.10

FULHAM ST.

C.B.102

C.B.103

C.B.34

M.H.32

M.H.31

M.H.33

M.H.103A T.C.35.06

INSULATE

23+04.75 BEGIN TAPER

4" 1/8 BEND

TEMPORARY EASEMENT

PERMANENT EASEMENT

24+24.75 END TAPER

GRADE TO DRAIN

APRON 107

4" D.I.P. FORCE MAIN

C.B.105

SUBSURFACE DRAIN

C.B.106

T.C. 35.04

6' CHAIN LINK FENCE AT ℄

M.H.29

T.C.36.12

C.B.100

T.C. 35.39

M.H.35

BIT. WALK

APRON 101

M.H.104

G.34.75

SILT CURTAIN AS DIRECTED BY THE ENGINEER

PROTECT TEE

FLAGSTONE RETAING WALL STA. 23+87 ± TO 26+20 ±
47' & 35' RT. SEE DETAIL SHEET NO. 6

TEMPORARY EASEMENTS

GRAVEL LOT

PROPOSED PARKING LOT 225'x 64'
PLACE 4" AGGREGATE CL-5 AS DIRECTED BY THE ENGINEER

CONSTRUCTION LIMITS

END S.A.P. 62-626-01 STA. 22+56.75 RT.

BEGIN S.A.P. 62-626-02 STA. 22+56.75 RT.

LAUDERDALE

ROSELAWN AVENUE

FALCON HEIGHTS

① NOTE: NORTH BOULEVARD AREA BETWEEN STA. 23+00 TO STA. 25+90 SHALL BE FILLED TO FINISHED GRADE NOT LESS THAN 30 DAYS PRIOR TO UTILITY CONSTRUCTION. A TEMPORARY DRAINAGE CULVERT SHALL BE INSTALLED FROM THE EXISTING 12" R.C.P. F.E.S. TO THE LOW AREA AT STA. 24+35 - 45' LT.

945 940 935 930 925

C.B.95 C.B.96 C.B.119 C.B.102 M.H.3 M.H.103A C.B.105 C.B.99 C.B.100 C.B.105 C.B.106

26 15 L.F. 5" R.C.P. @ 1.0%

38 L.F. 15" R.C.P. @ 1.0%

21 19 L.F. 15" R.C.P. @ 1.0%

21" R.C.P.

21 L.F. 15" R.C.P. @ 1.0%

39 38 L.F. 15" R.C.P. @ 1.0%

44 39 L.F. 15" R.C.P. @ 1.0%

44 38 L.F. 6" CORRUGATED PIPE DRAIN

METER M.H. 94A

7' MIN. COVER

-.5%

4.08'

SUBCUT

V.C.=100' M.=.25'

P.I. 19+50 EL. 941.54

M.H. 96A

C.B.95 C.B.96

C.B.97 C.B.98 M.H.98A

27 28 L.F. 15" R.C.P. @ 1.0%

17 L.F. 15" R.C.P. @ 11.0%

49 L.F. 15" R.C.P. @ 1.94%

6" D.I.P. W.M.

251 254 L.F. 15" R.C.P. @ 1.94%

2.5%

P.I. 21+50 EL. 936.54

V.C.=100' M.=.162

-1.2%

PROPOSED GRADE

C.B.99 C.B.100

M.H.31 M.H.103A

49 L.F. 15" R.C.P. @ 1.0%

EXIST. 4" F.M.

61' 60 L.F. 15" R.C.P. @ 1.0%

110 L.F. 15" R.C.P. @ 1.0%

21" R.C.P.

M.H.104

APRON 101

80 84 L.F. 21" R.C.P. @ 2.26%

82 L.F. 18" R.C.P. @ -1.32%

M.H.31

P.I. 23+64.09 EL. 933.97

V.C.=225' M.=1.018'

EXISTING GRADE

+2.42%

APRON 107

FLAGSTONE RETAING WALL 35' RT.

18" MIN. 4" D.I.P. FORCE MAIN

NOTE: 2' MIN. CLEARANCE FROM 24" R.C.P. TO TOP OF WATERMAIN. DEFLECT WATERMAIN AS REQUIRED. INSTALL 2" MIN. INSULATION 4' IN EVERY DIRECTION FROM POINT OF CROSSING

17 18 19 20 21 22 23 24

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: B.W.
DATE: 1/4/89

27-117

SURVEY:	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: DPH		①	4-29-86	ADDED NOTE
DRAWN: GN				

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 3-25-86 Reg. No. 14410

SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

STREET, STORM SEWER, AND WATERMAIN

FILE NO.: 86068 | 11/29
DATE: 3-25-86

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31

1. 32' GUTTER TO GUTTER CENTERS ON R/W.
2. END B624 CURB & GUTTER WITH A 5' TAPER.
3. MATCH RADIUS TO EXISTING CATCH BASIN.

SCALE IN FEET 0 30 60

ROSEVILLE

MIDLAND HILLS RD.

ROSEDALE DR.

TEMPORARY EASEMENT

PERMANENT EASEMENT

TEMPORARY EASEMENTS

PROPOSED 6" D.I.P. W.M.

4" D.I.P. FORCE MAIN

FLAGSTONE RETAINING WALL STA.26+15 TO 27+26 37'LT. SEE DETAIL SHEET 6

6" G.V. & BOX

CONNECT TO EXIST. TEE

INP 6" C.I.P.

1/4 SECTION LINE

CONST. ℄

FLAGSTONE RETAINING WALL STA.22+87 TO 26+20 35'RT. SEE DETAIL SHEET 6

20' VEHICULAR GATE

FLAGSTONE RETAINING WALL STA.27+16± TO 28+67± 31'RT. SEE DETAIL SHEET 6

PROTECT GREEN

SAND TRAP

GREEN

TEE

6' CHAIN LINK FENCE @ R

TEMPORARY EASEMENTS

FALCON HEIGHTS

TO BE LOCATED IN FIELD SEE DRAINAGE CHART FOR APROX. LOCATION.

NOTE: 6:1 SLOPE STA.30+85± TO 34+10±

SILT CURTAIN AS DIRECTED BY THE ENGINEER.

ROSELAWN AVENUE

M.H.40 C.B.109

5 L.F. 15" R.C.P. @ 1.0%

41.36 40.16 40.12

38.81±

C.B.108

FLAGSTONE RETAINING WALL 31'LT.

M.H.37

FLAGSTONE RETAINING WALL 37'LT.

33 L.F. 15" R.C.P. @ 1.0%

39.34

40.64 40.00

38.81±

21" R.C.P.

36.72 37.59

FLAGSTONE RETAINING WALL 35'RT.

7' MIN. COVER

EXIST. 4" F.M. (TO BE ABANDONED)

PROP. 6" D.I.P. W.M.

18" MIN.

4" D.I.P. FORCE MAIN

34.54

P.I. 30+00 EL. 949.36

V.C.= 100' M.= .227

EXISTING GRADE

PROPOSED GRADE

+2.42%

+0.6%

+3.44%

4.08'

SUBCUT

EXIST. 21" R.C.P.

EXIST. TOP W.M.

37.60

EXIST. 18" R.C.P.

44.71

46.58 47.08

43.22

EXIST. 8" V.C.P.

39.54

40.39

P.I. 32+40 EL. 950.80

V.C.= 110' M.= .391

C.B.110 M.H.111

28 27 L.F. 15" R.C.P. @ 1.0%

47.88 47.85

47.58 46.72

46.58 46.32

C.B.47 M.H.111 C.B.112

19 18 L.F. 15" R.C.P. @ 1.0%

48.49 48.25

49.37 48.99

48.79

35 40 L.F. 15" R.C.P. @ 1.0%

47.85 47.88

955 950 945 940 935 930

25 26 27 28 29 30 31 32 33

ASBUILT PLAN
CONFORMING TO CONST. RECORDS
DONE BY: B.W.
DATE: 1/4/89

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31

27-117

SURVEY: ..	CHECKED BY:	NO.	DATE	REVISIONS
DESIGN: D.H.				
DRAWN: D.H.				

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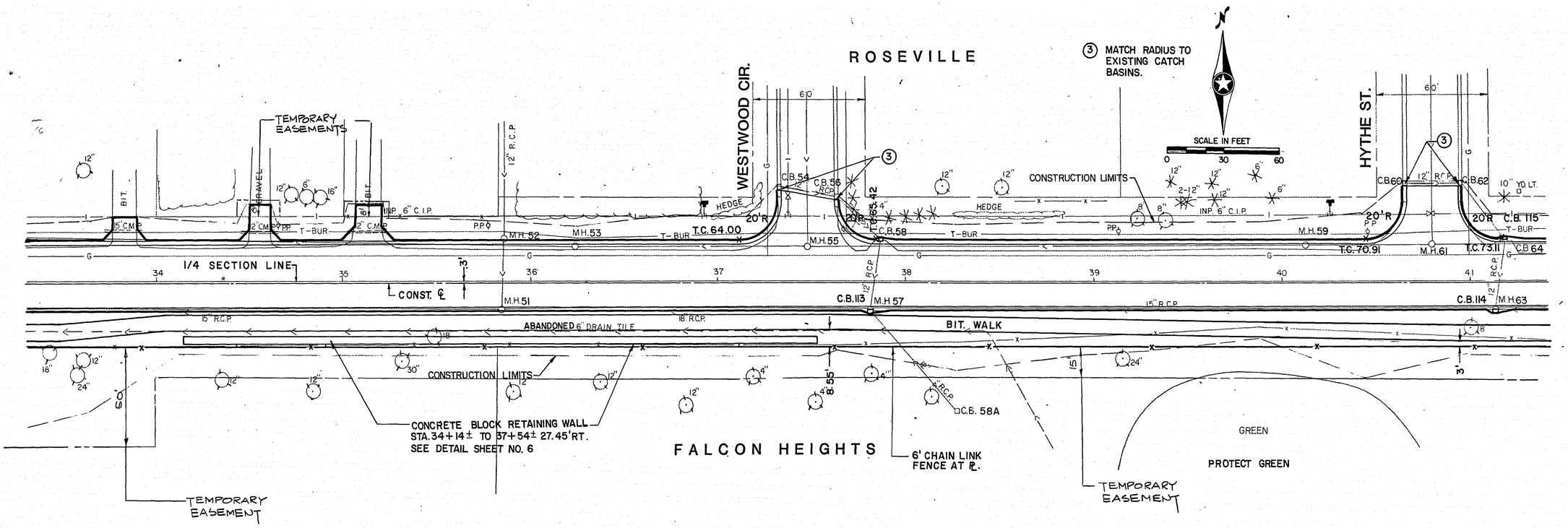
Date 3-25-86 Reg. No. 14410

SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

STREET, STORM SEWER, AND WATERMAIN

FILE NO.: 86068
DATE: 3-25-86
12 / 29



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: B.W.
DATE: 1/4/89

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31

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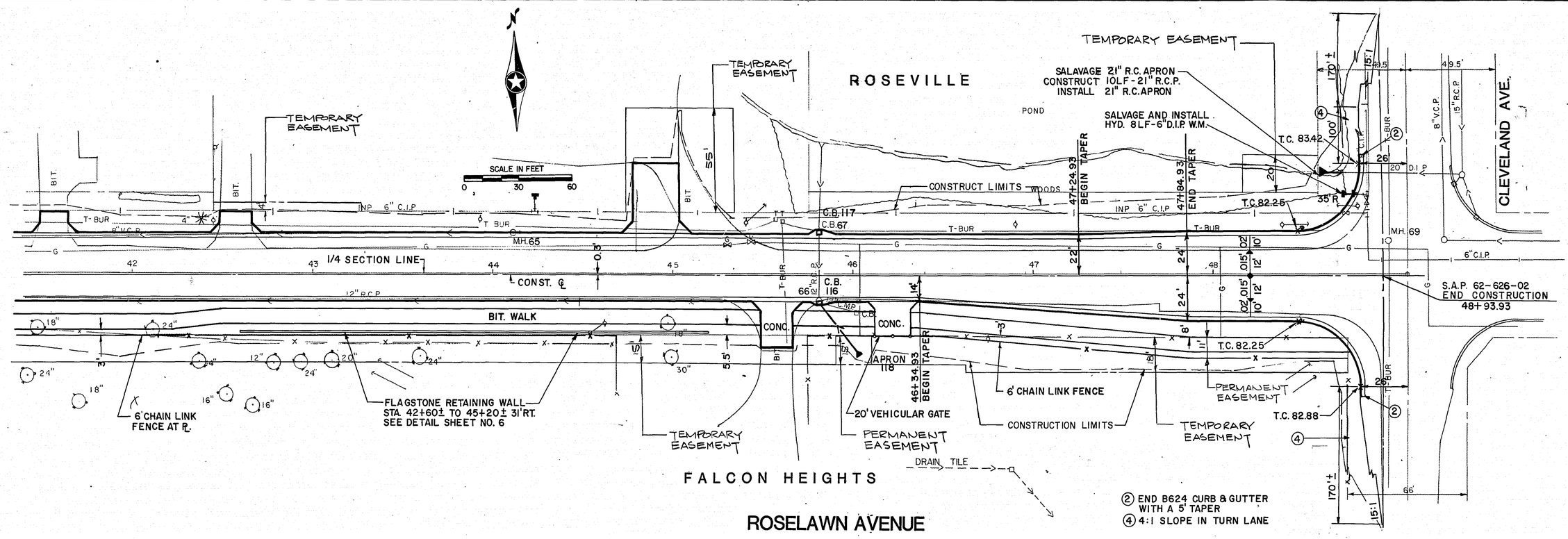
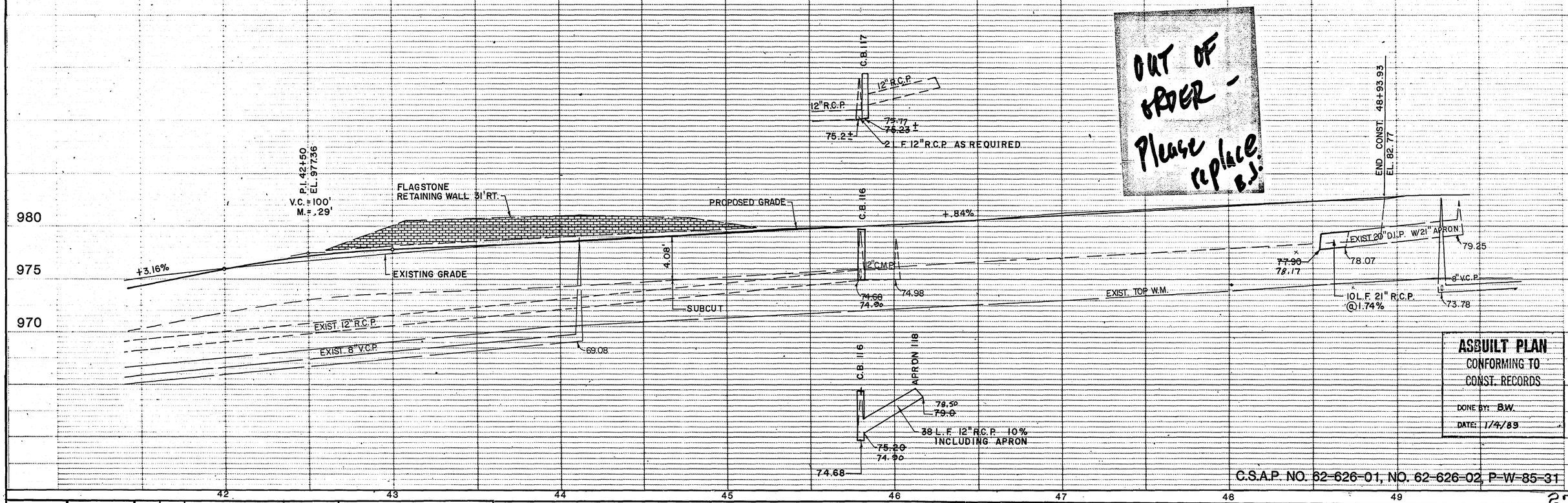
SHORT – ELLIOTT – HENDRICKSON, INC.
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

STREET, STORM SEWER, AND WATERMAIN

FILE NO.: 86088
DATE: 3-25-86
13 / 29





ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: B.W.
DATE: 1/4/89

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31

27-117

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Date 3-25-86 Reg. No. 14410

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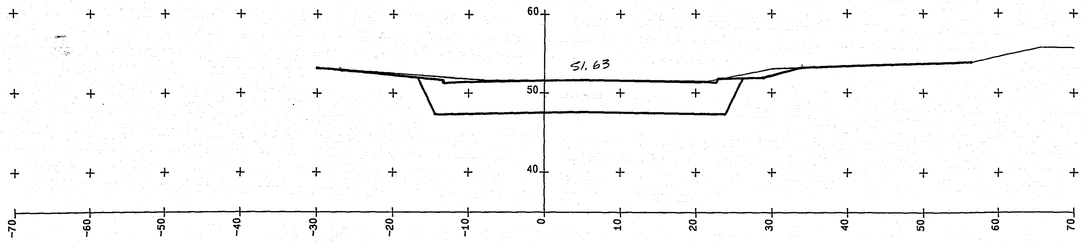
Saint Paul, Minnesota • Chippewa Falls, Wisconsin

RAMSEY COUNTY, MINNESOTA

STREET, STORM SEWER, AND WATERMAIN

FILE NO.: 86068
DATE: 3-25-86
14 / 29



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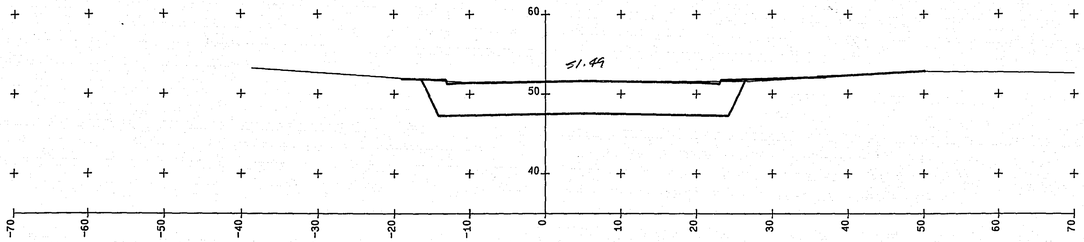

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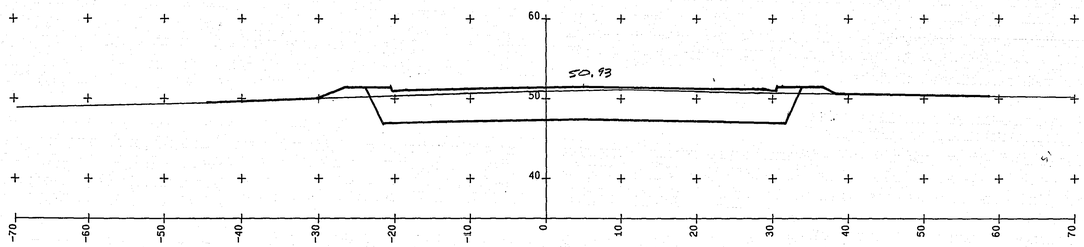

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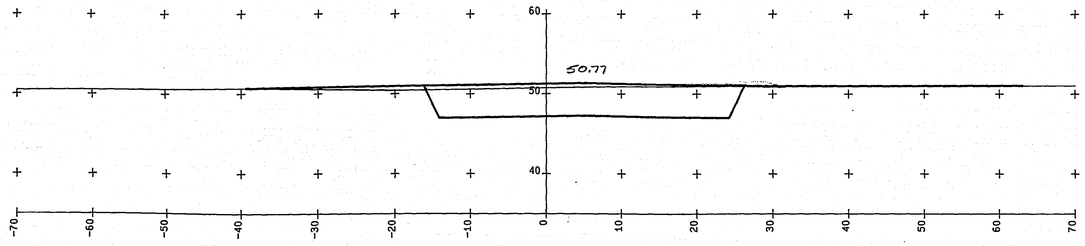

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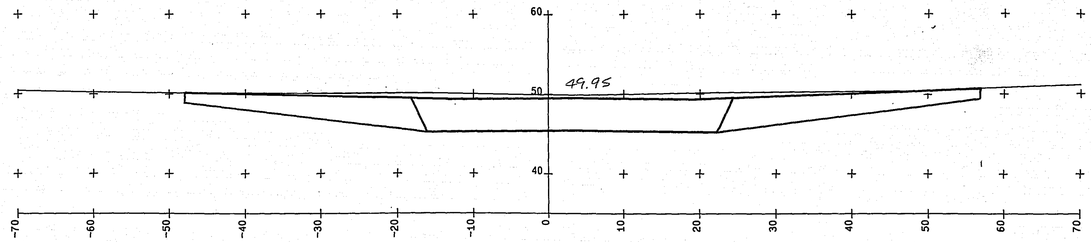

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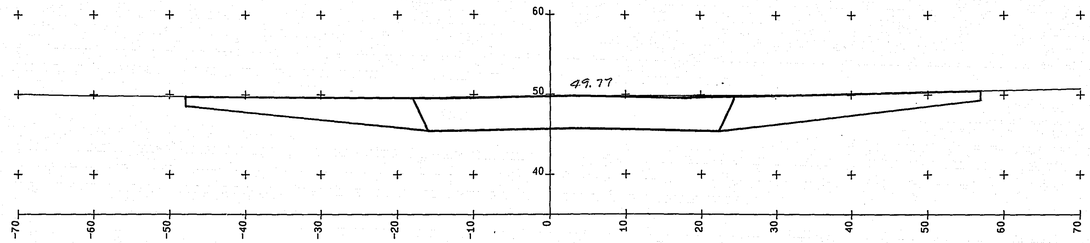

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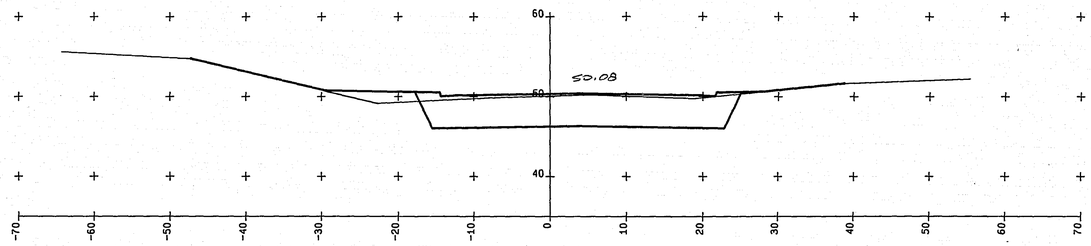

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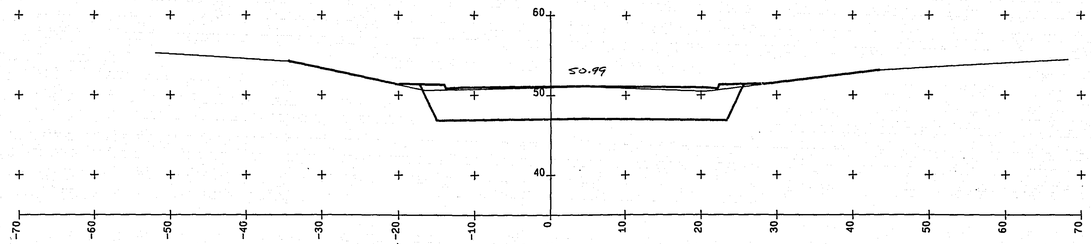

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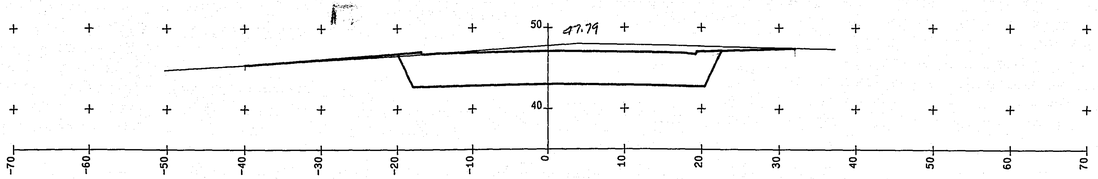

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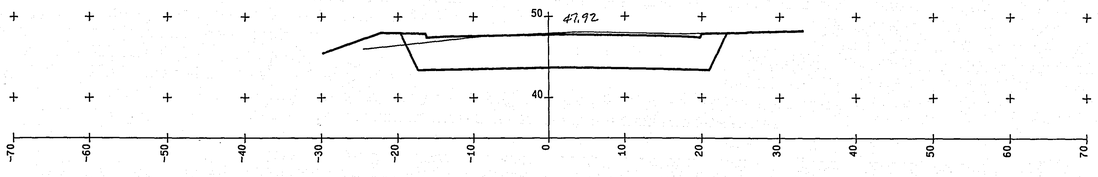

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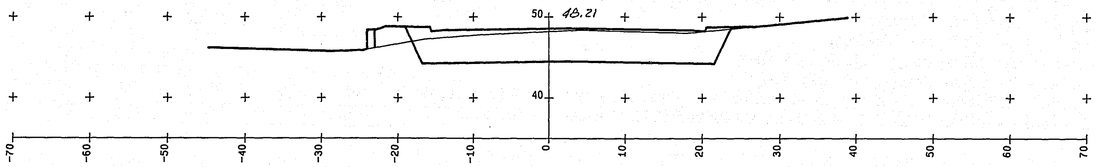

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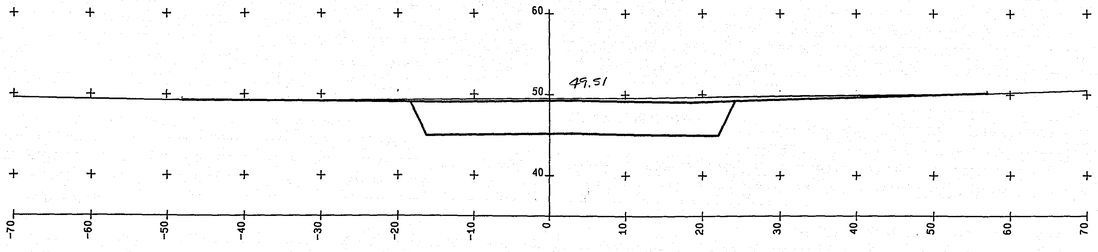

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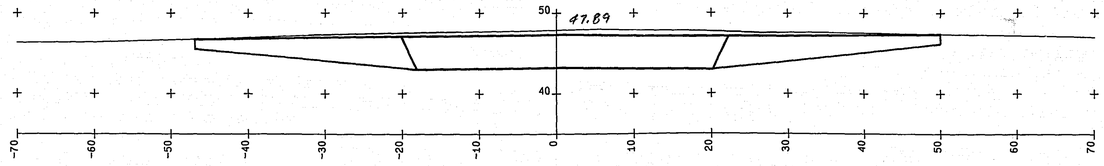

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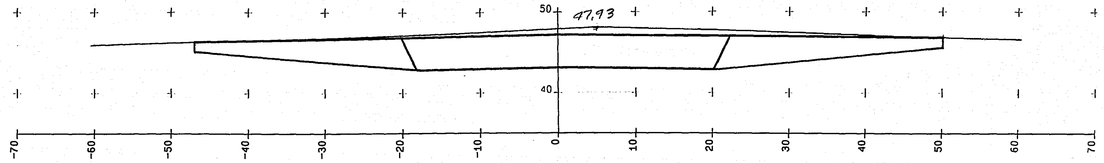

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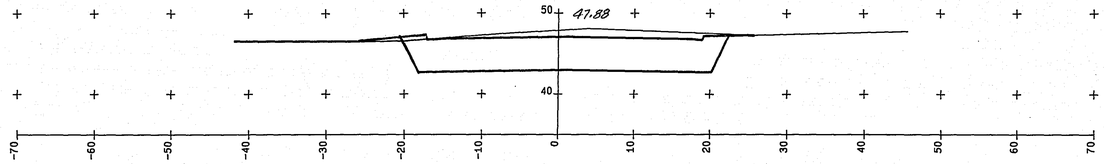

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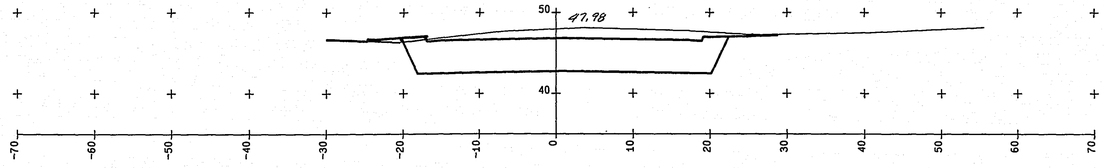

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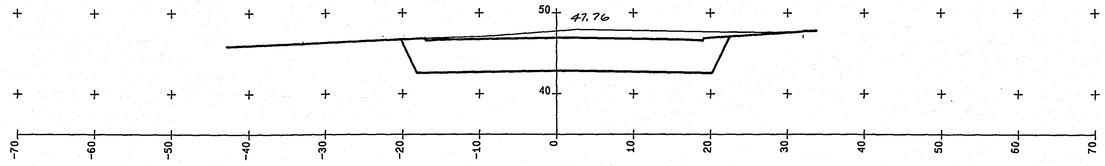

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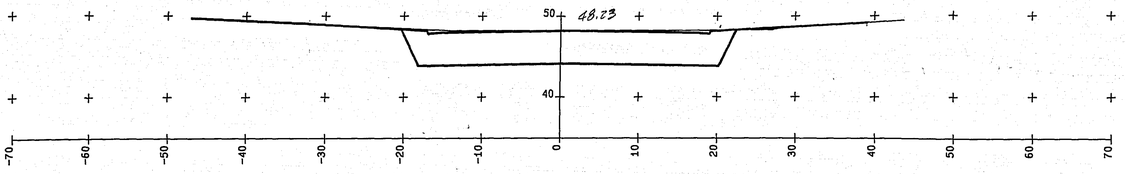

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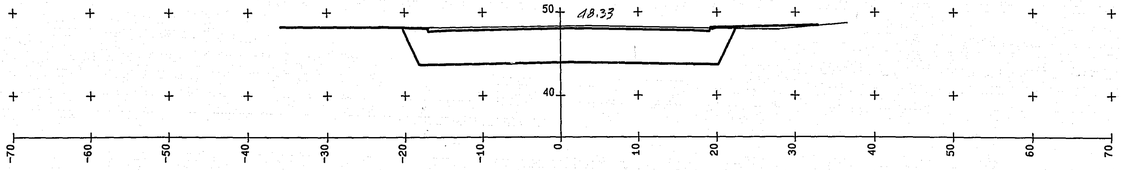

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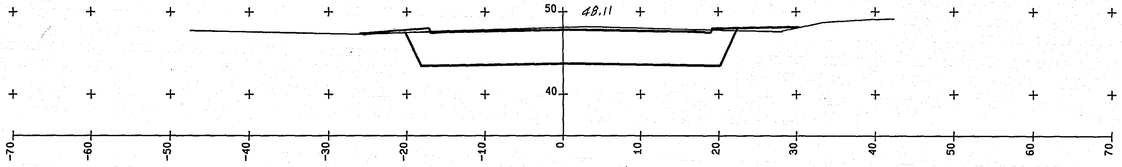

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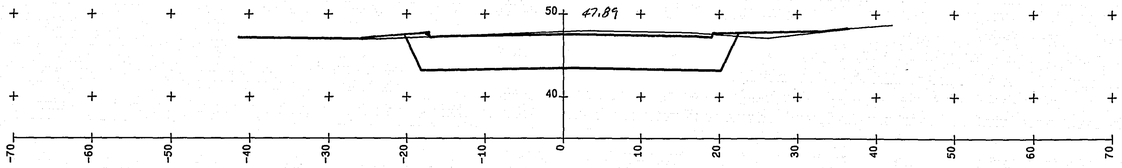

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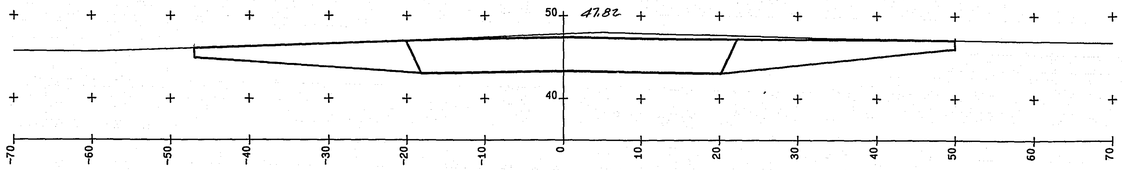

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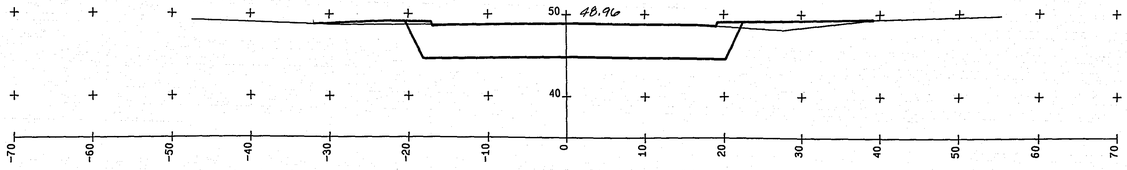

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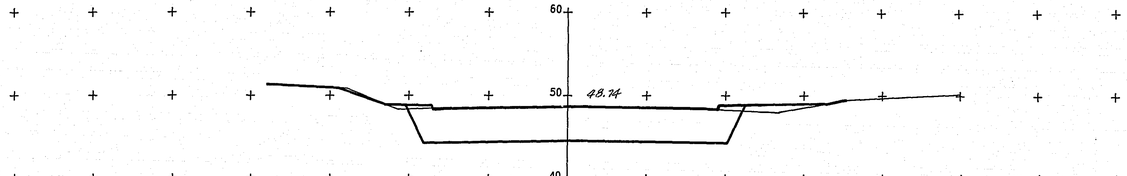

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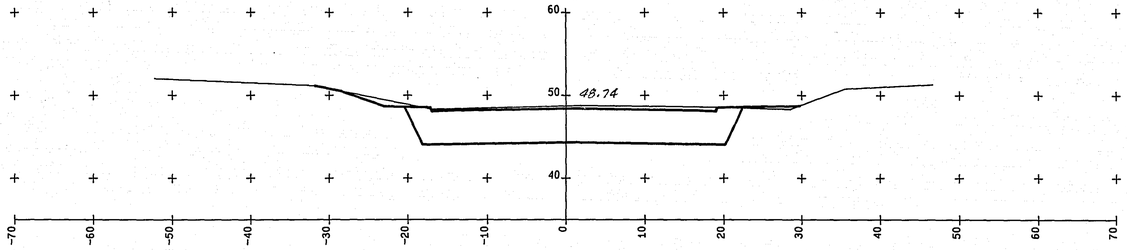

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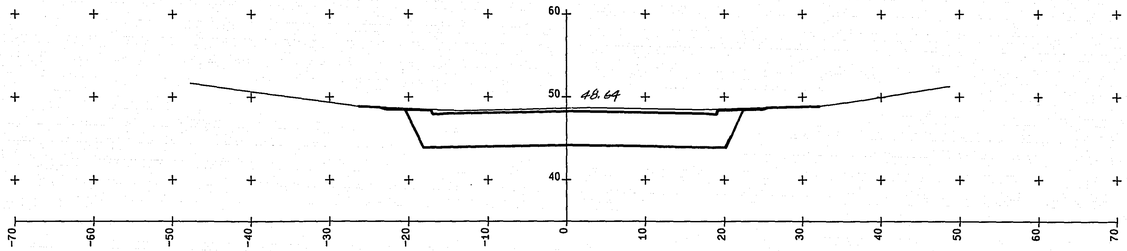

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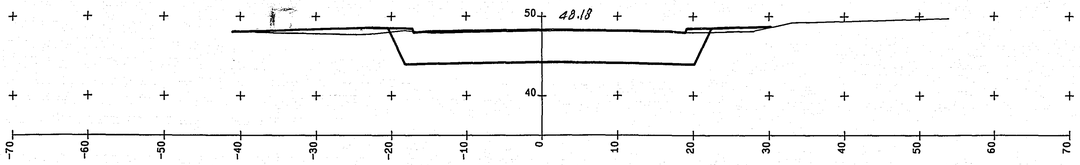

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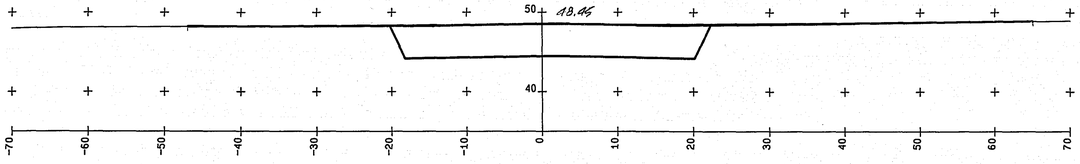

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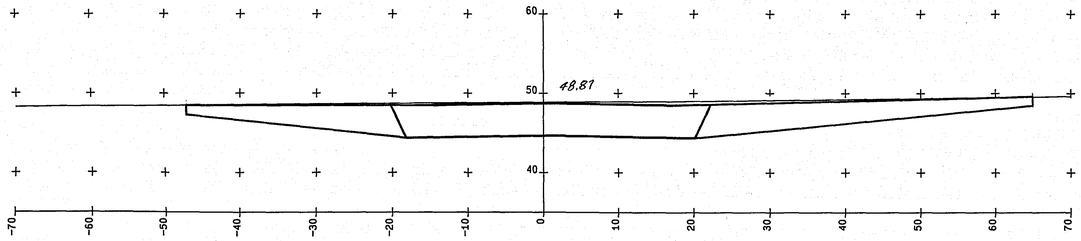

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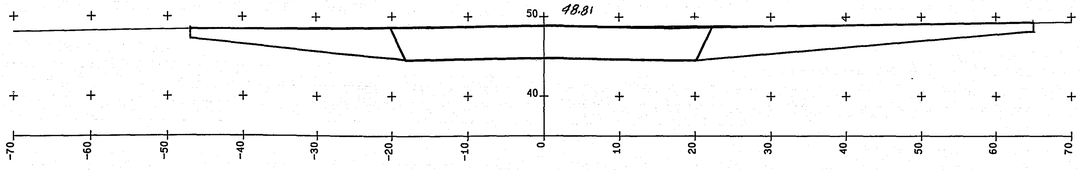

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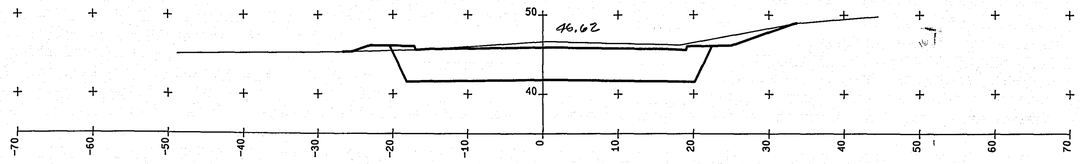

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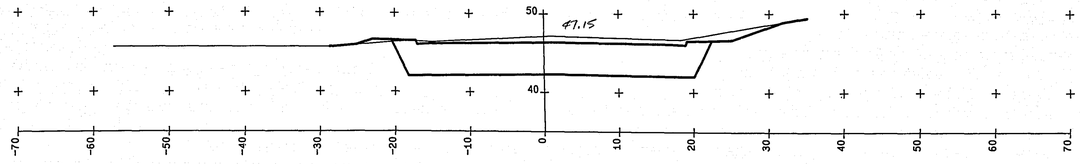

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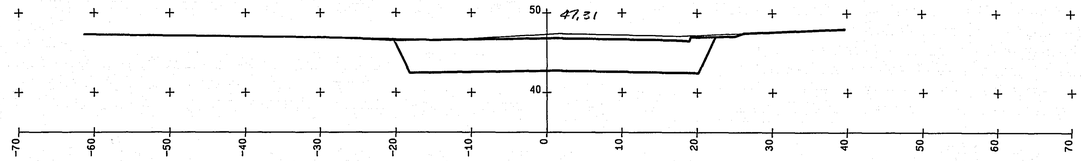

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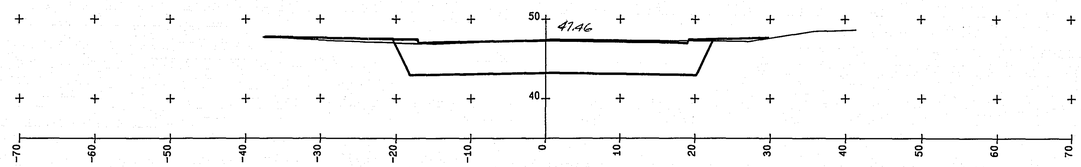

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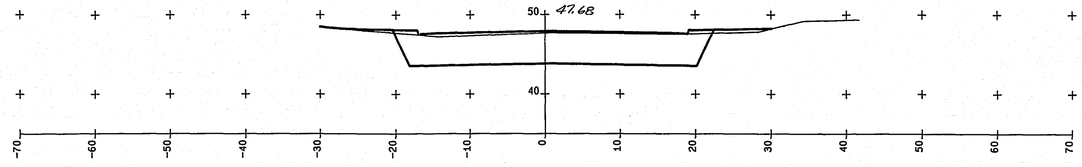
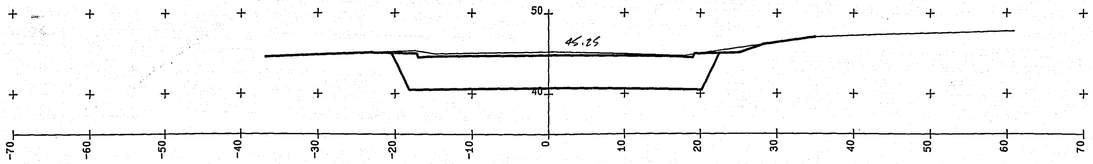


9+93.00

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31



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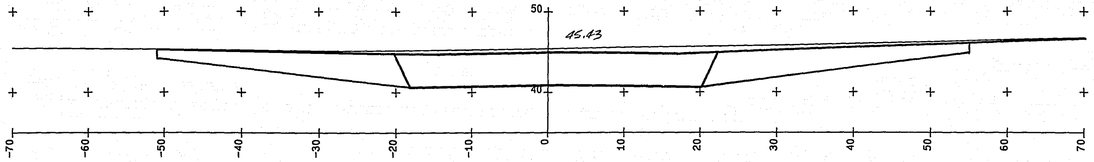

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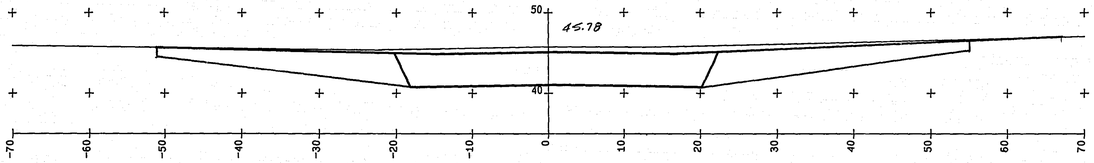

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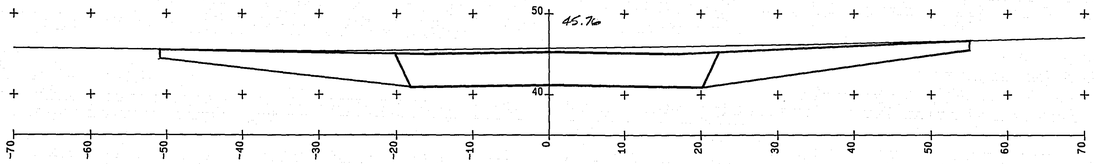

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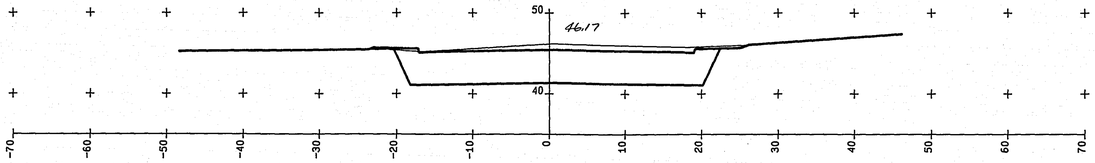

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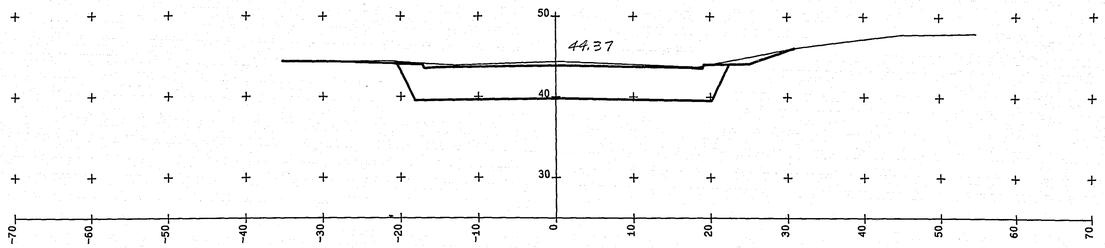

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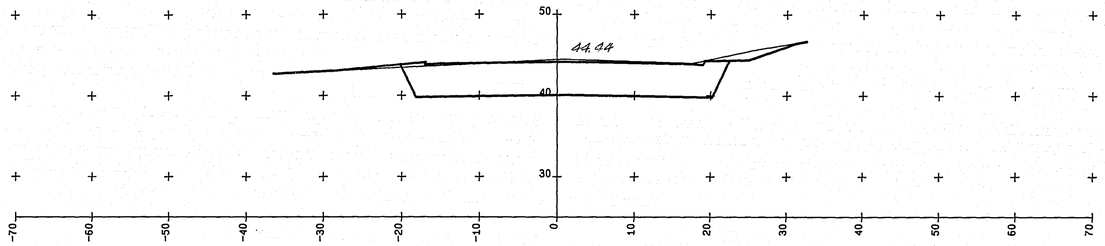

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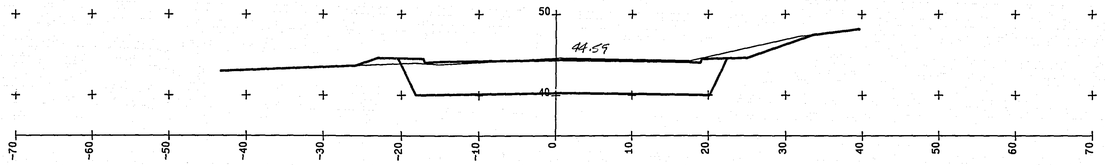

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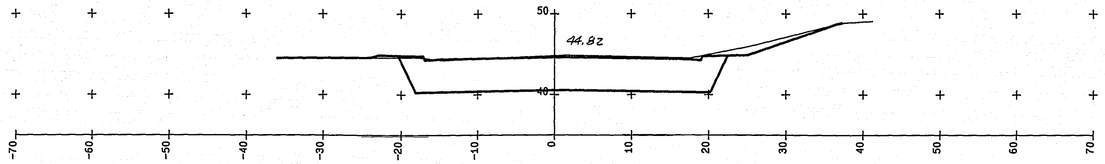

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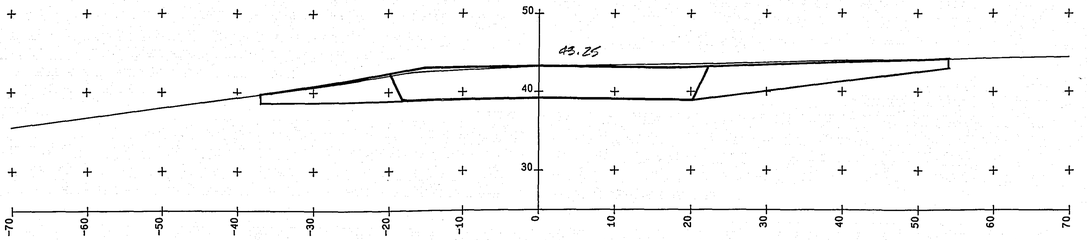

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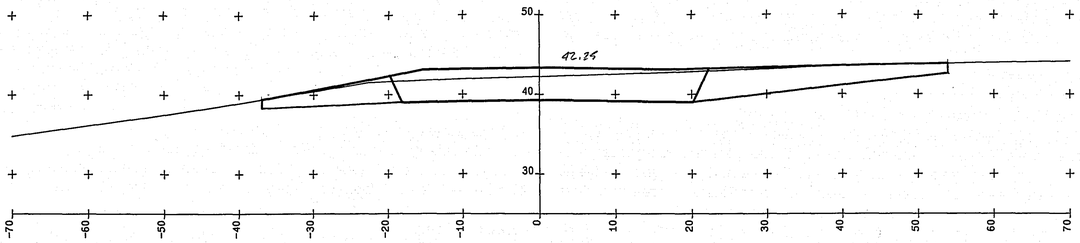

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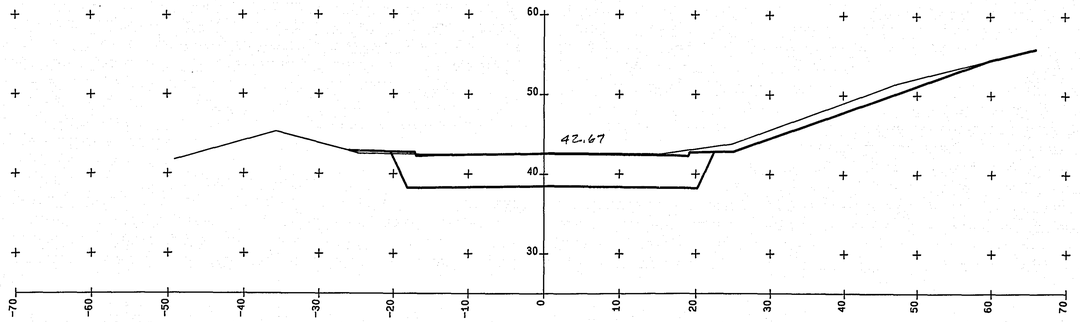

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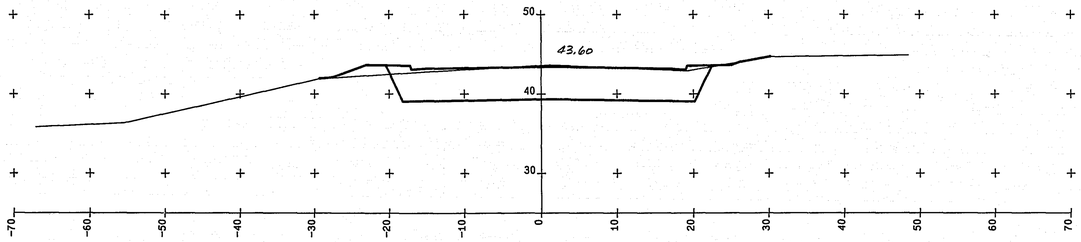

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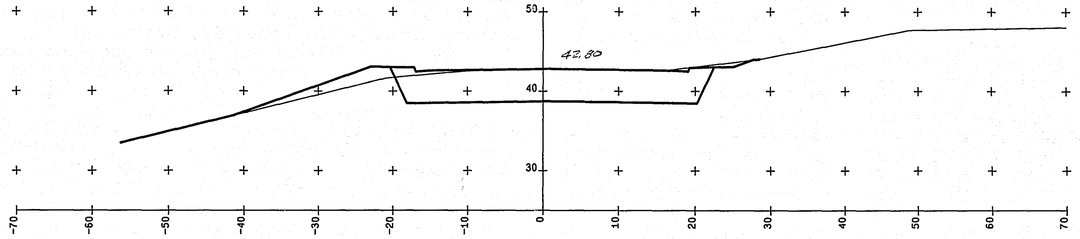

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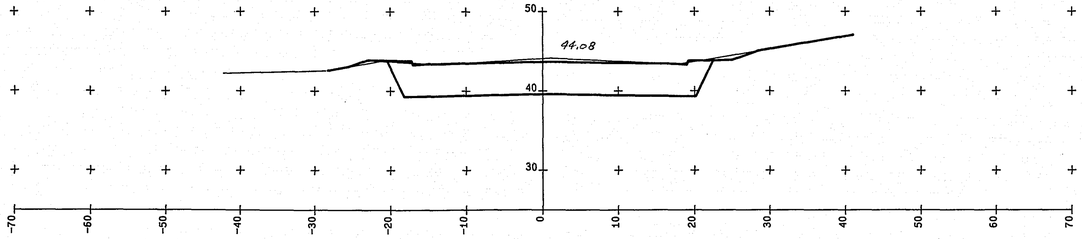

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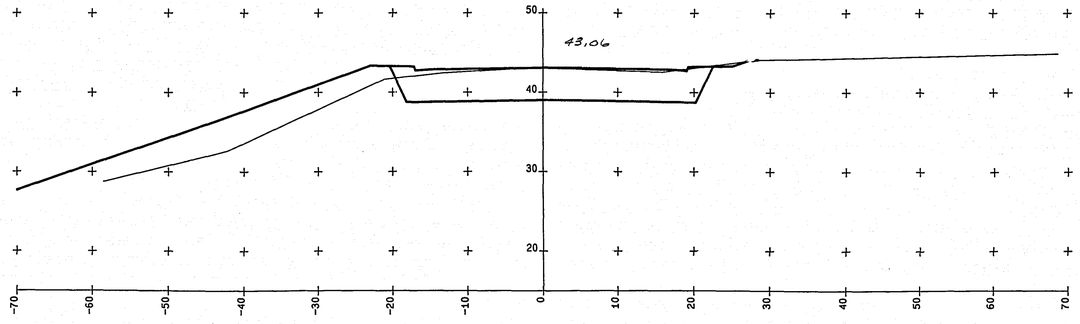

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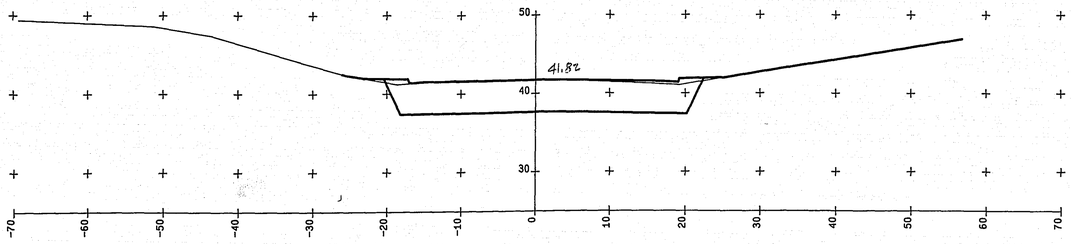

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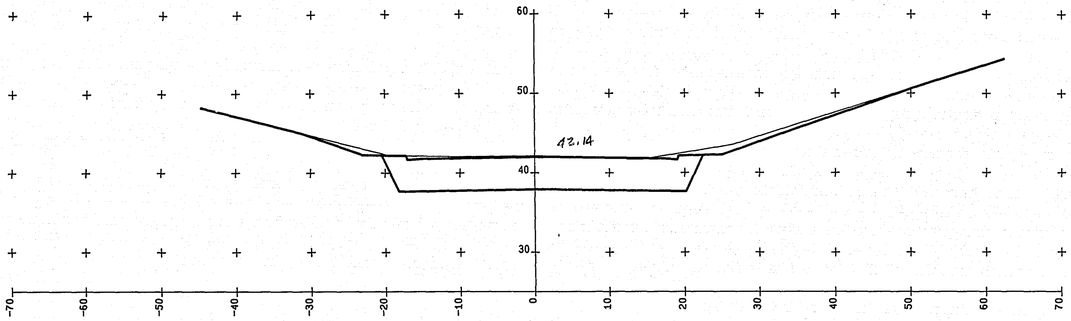

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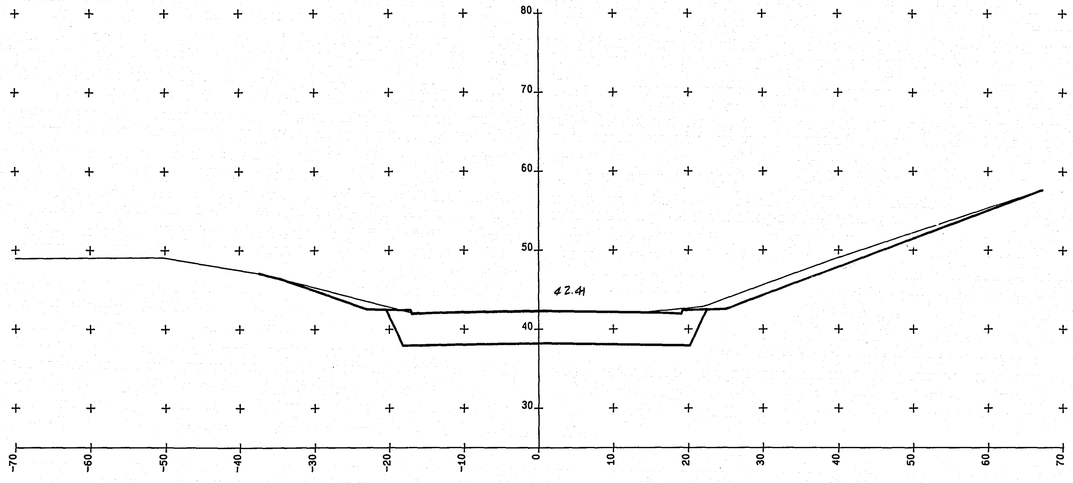

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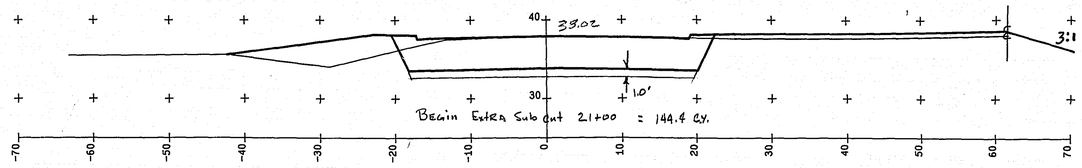

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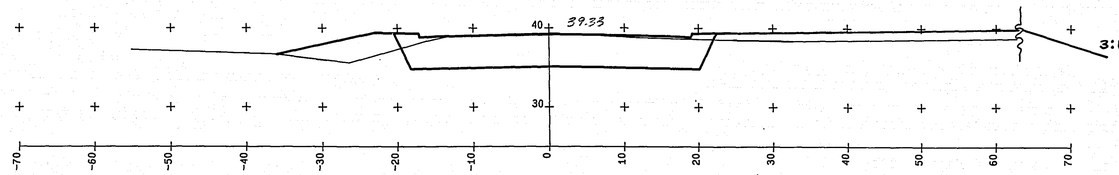

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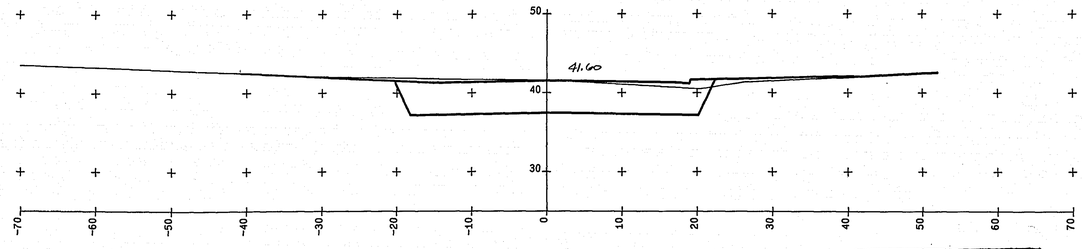
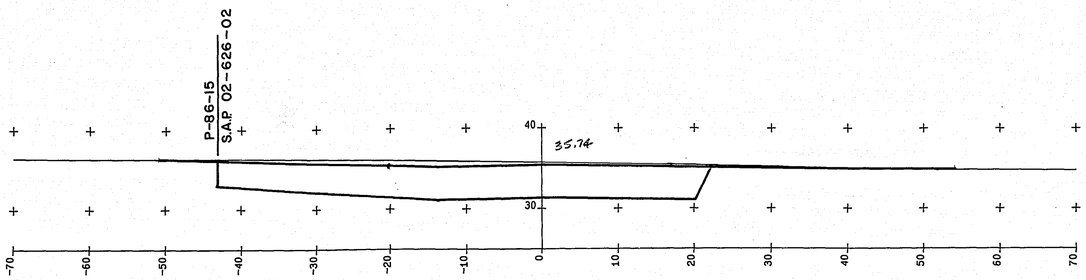


19+28.00

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: J.A.
DATE: 1-4-89

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31



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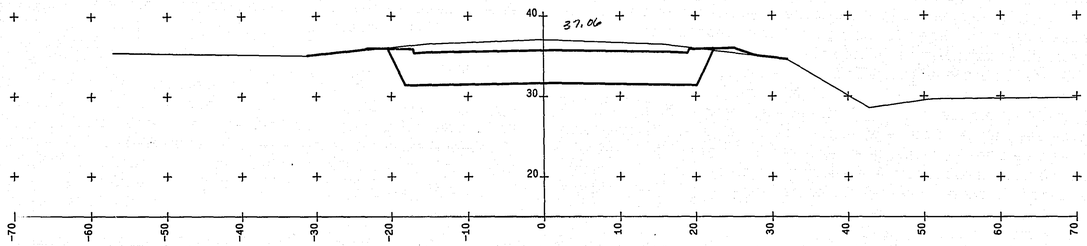

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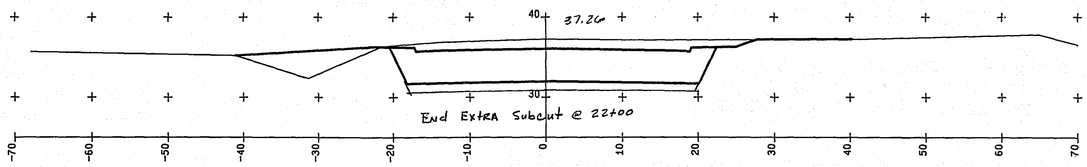

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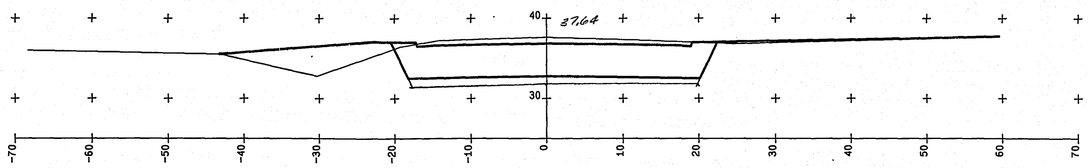

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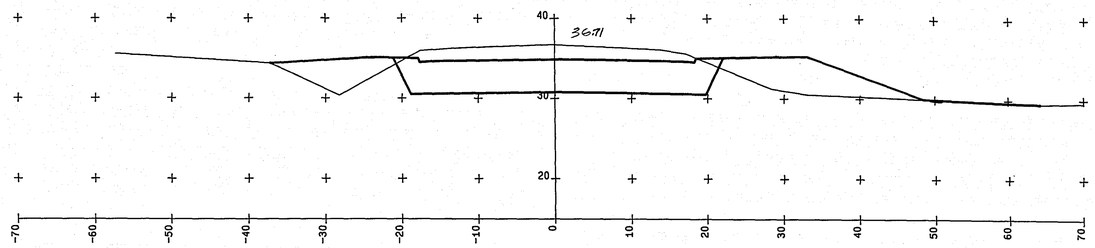

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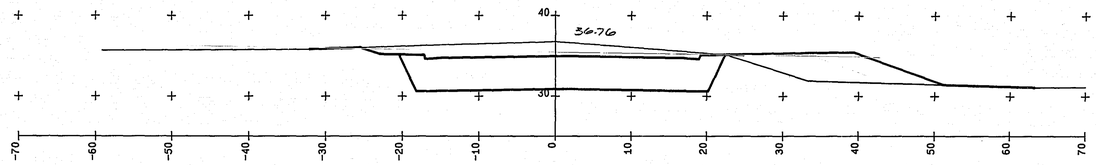

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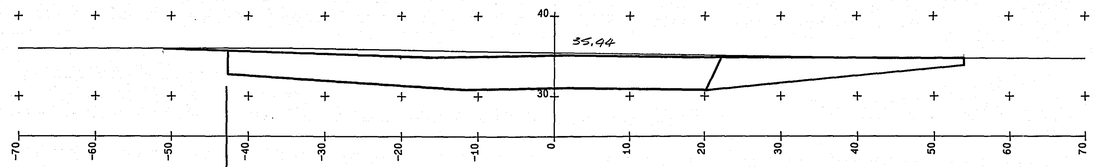

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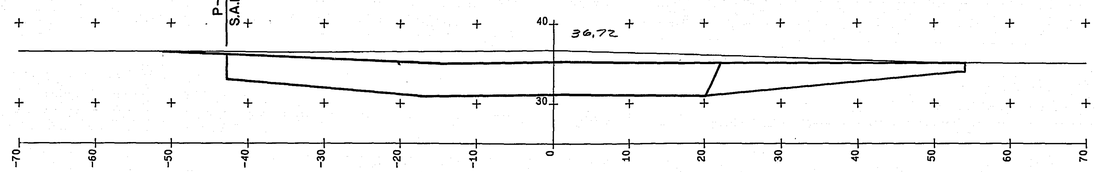
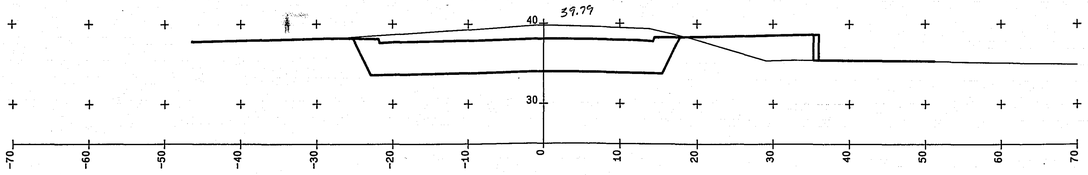


22+58.00

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: J.A.
DATE: 1-4-89

C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31



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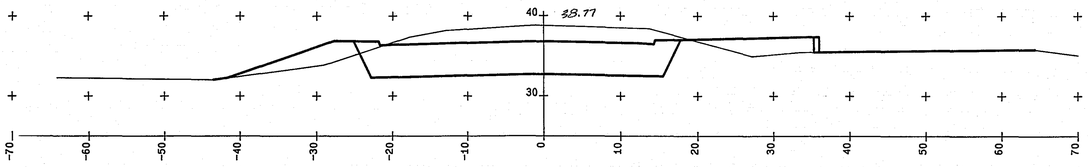

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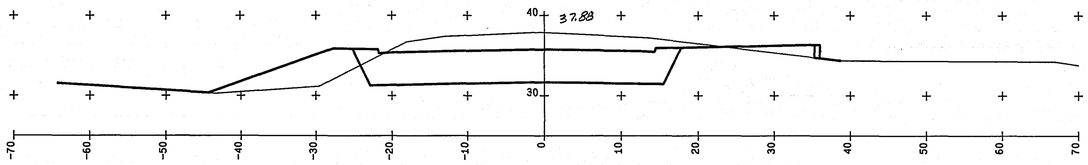

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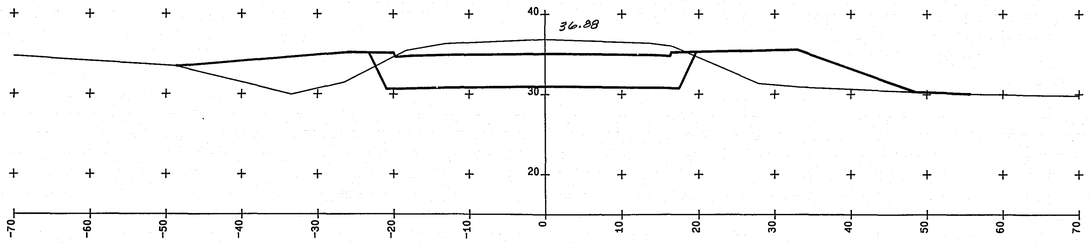

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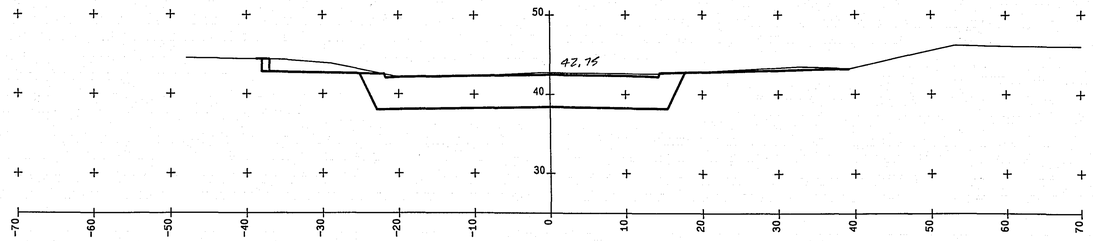

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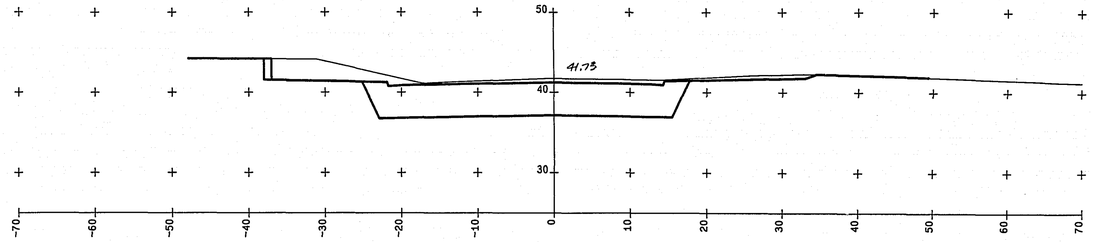

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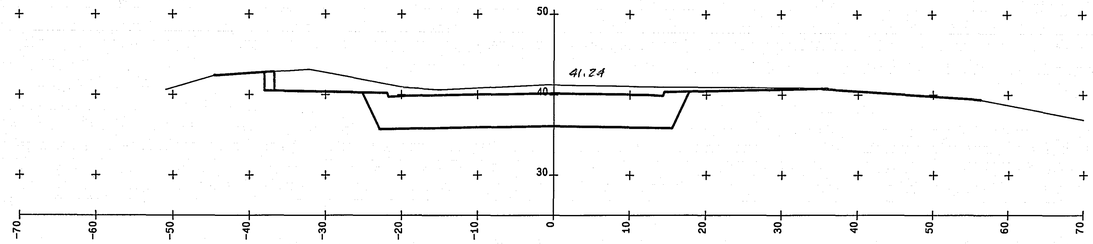

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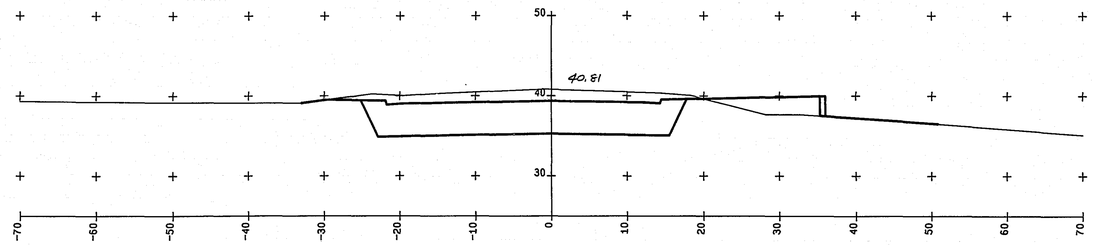

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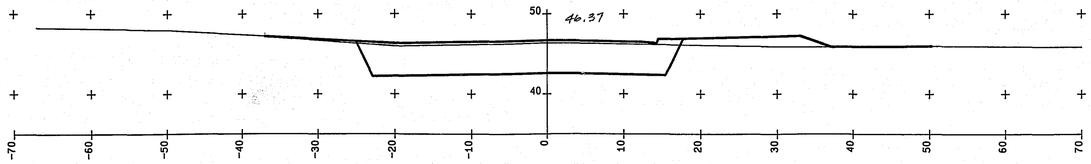
C.S.A.P. NO. 62-626-01, NO. 62-626-02, P-W-85-31



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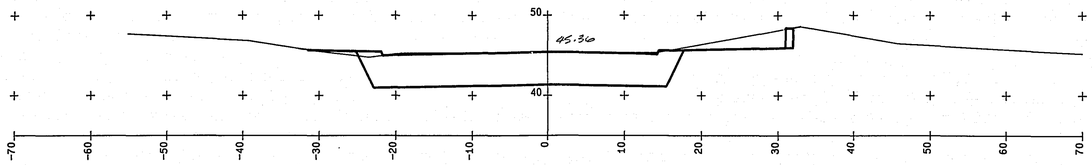

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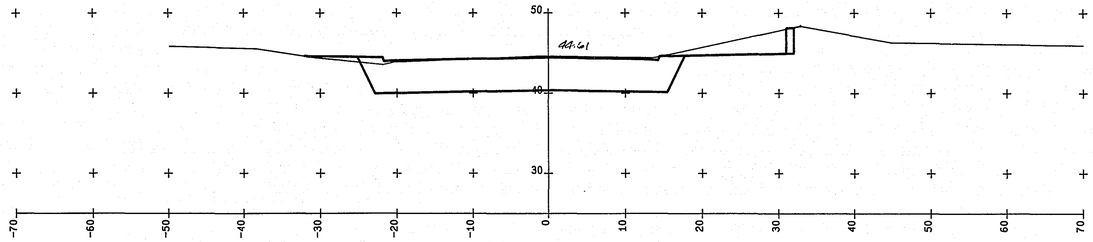

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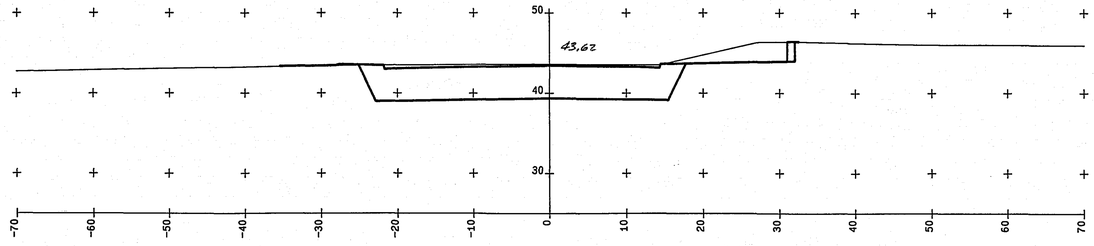

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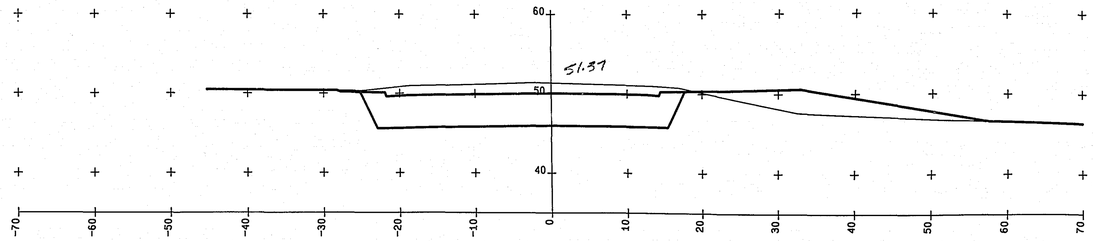

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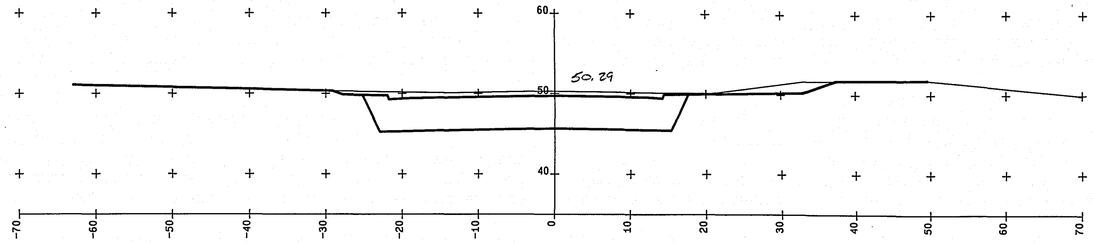

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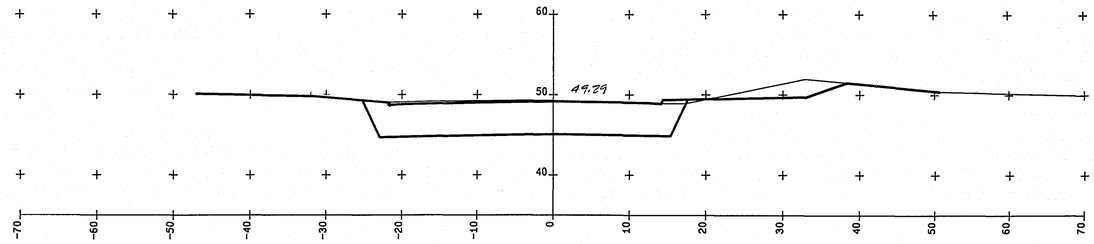

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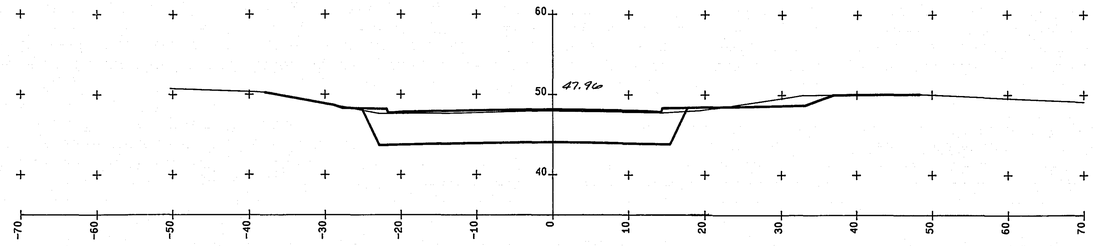

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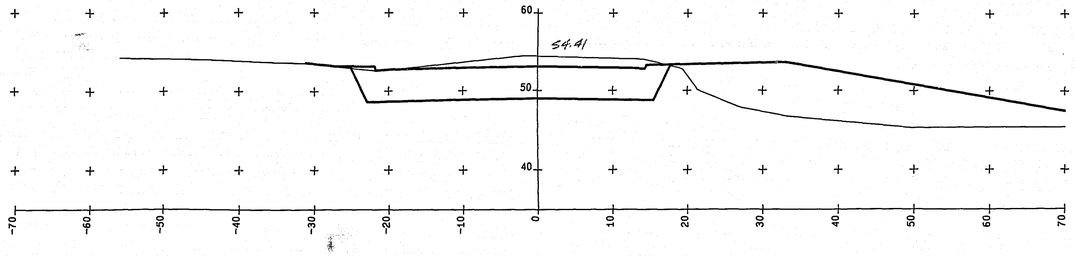

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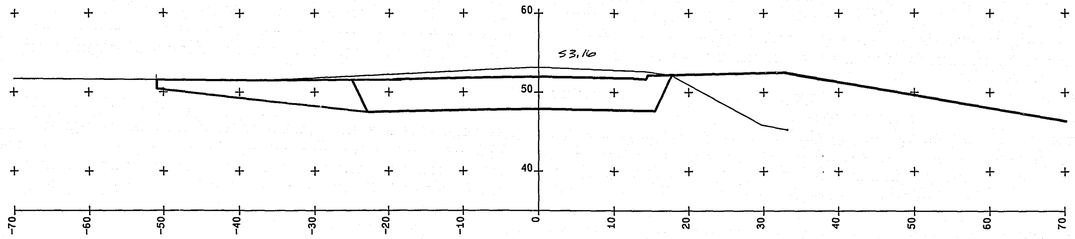

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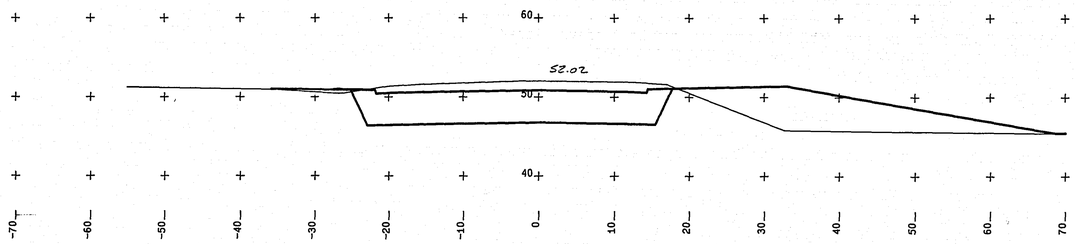

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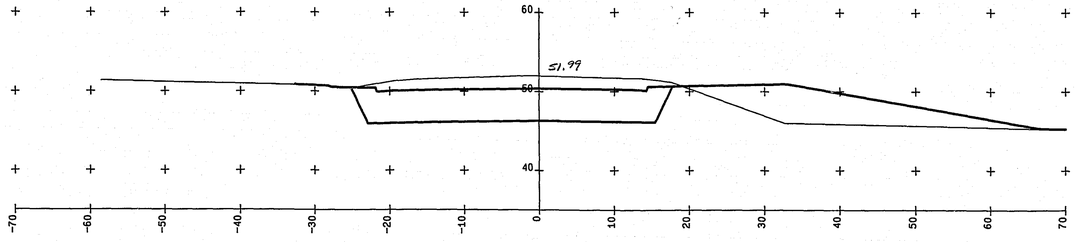

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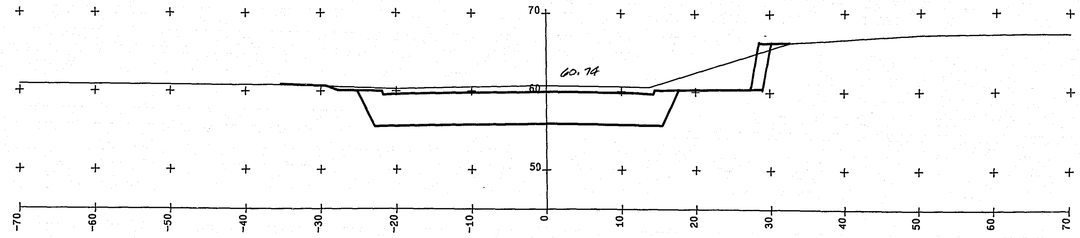

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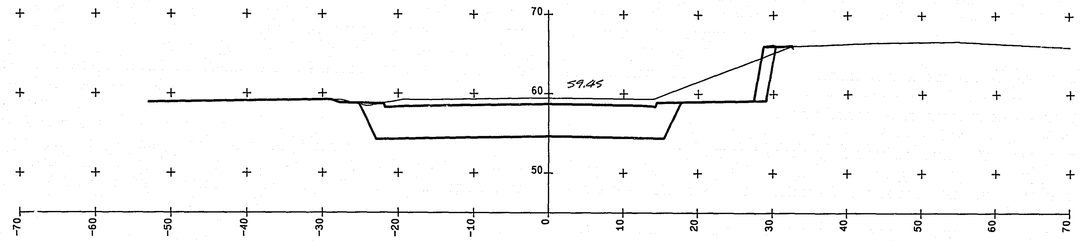

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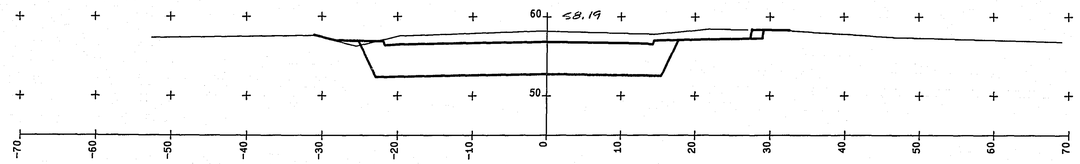

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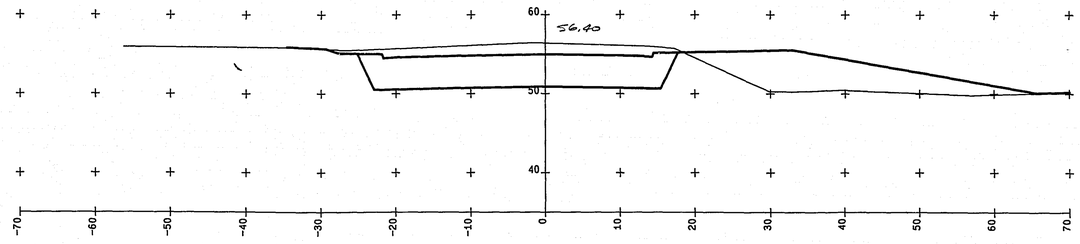

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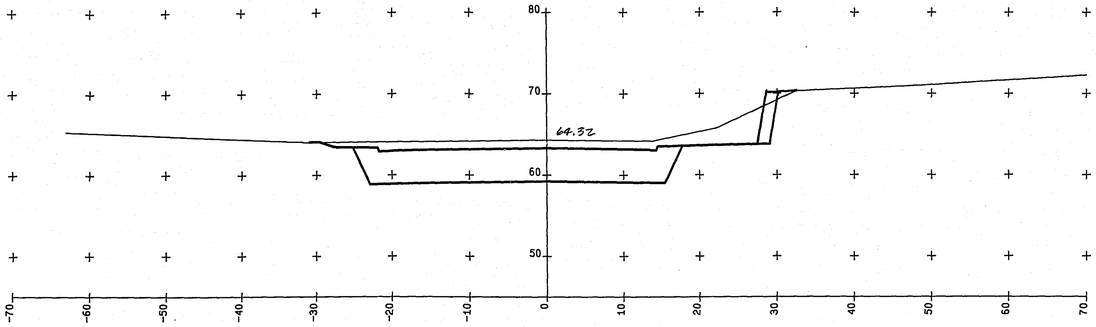

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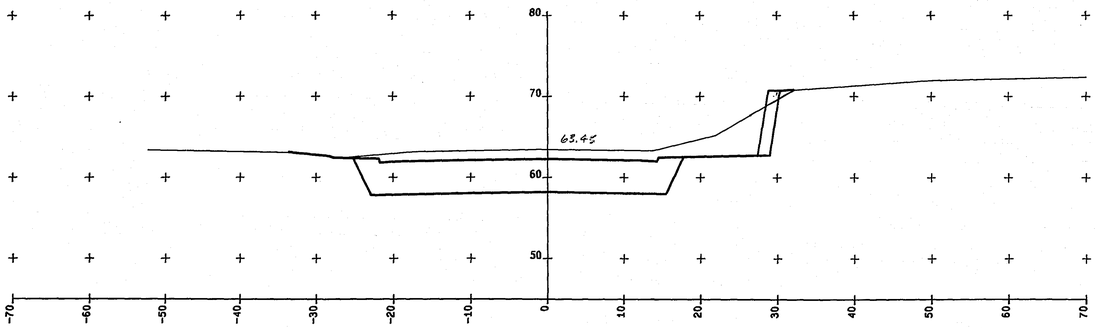

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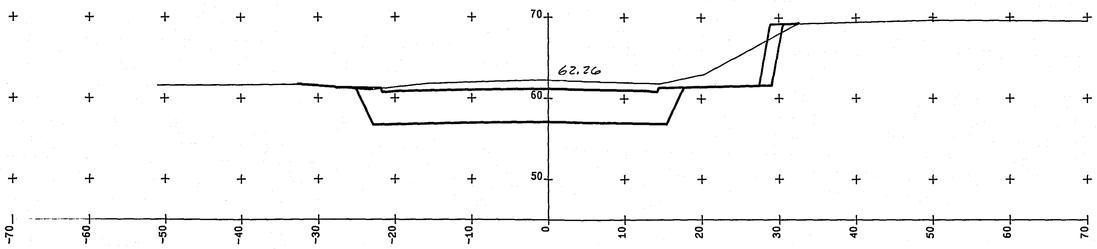

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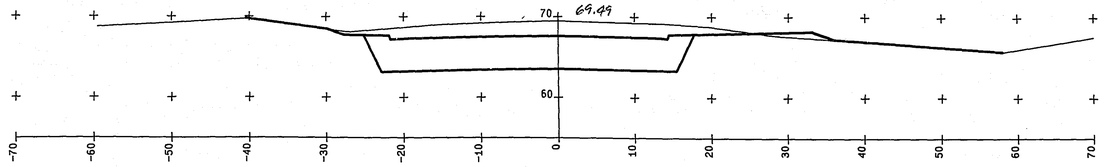

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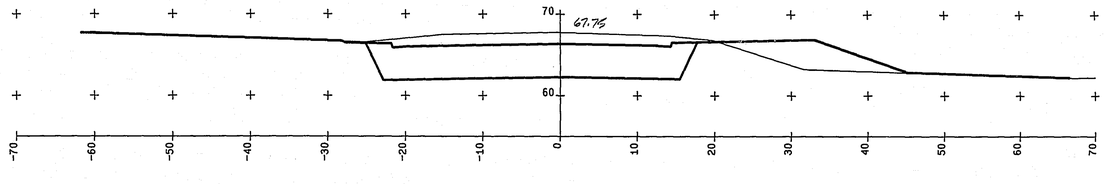

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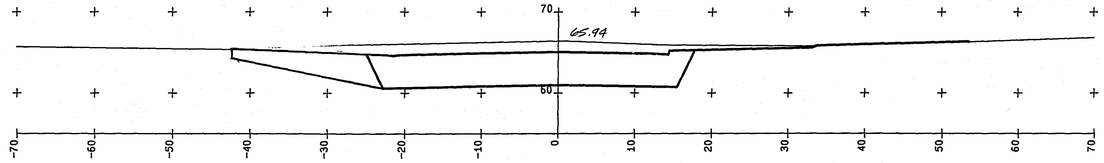

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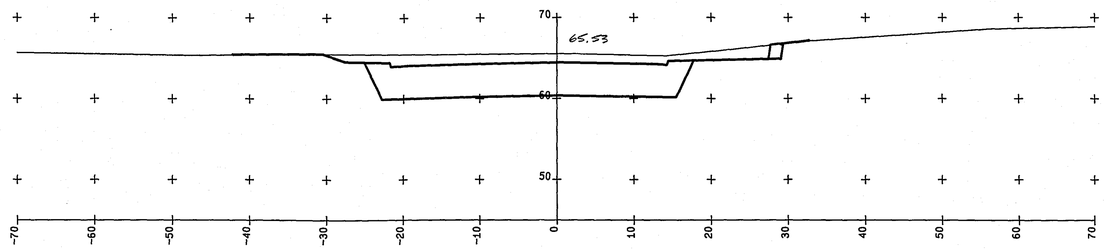

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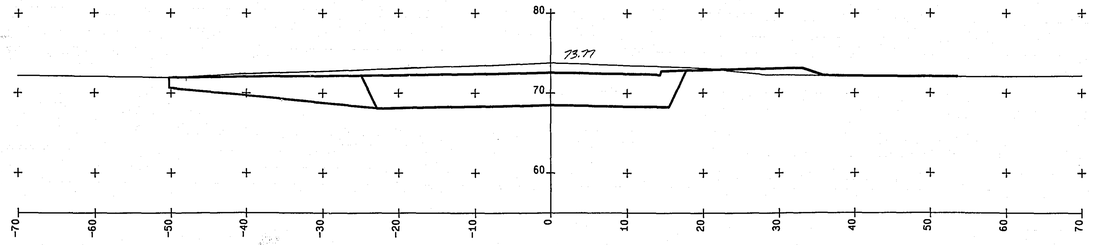

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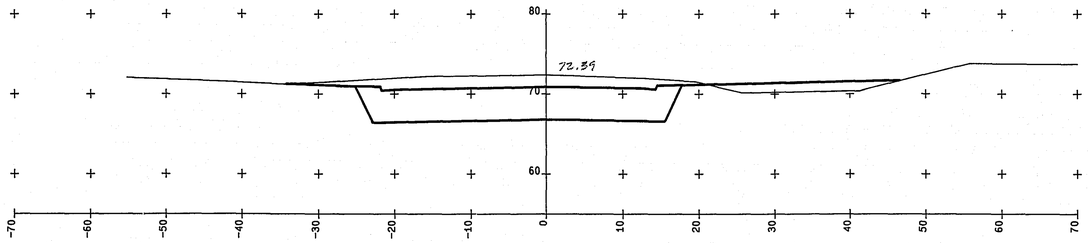

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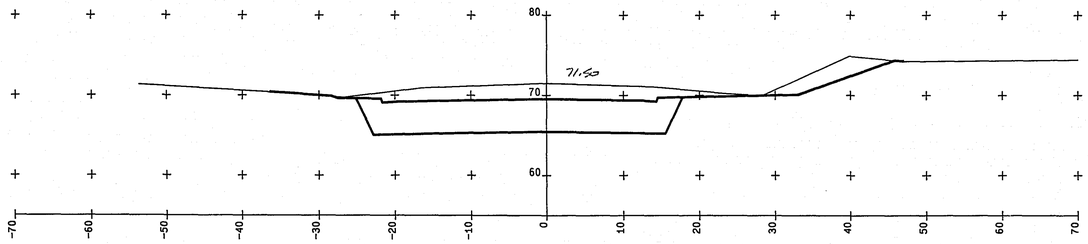

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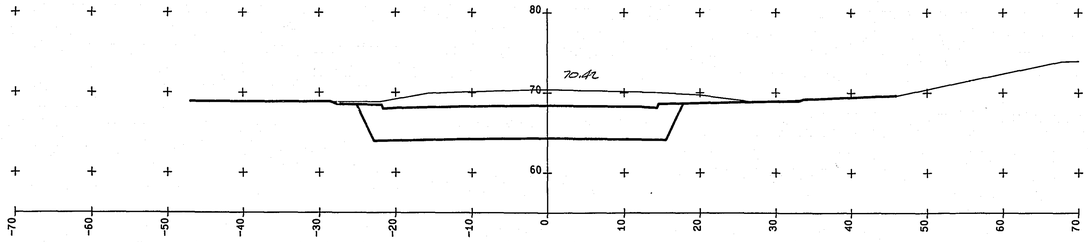

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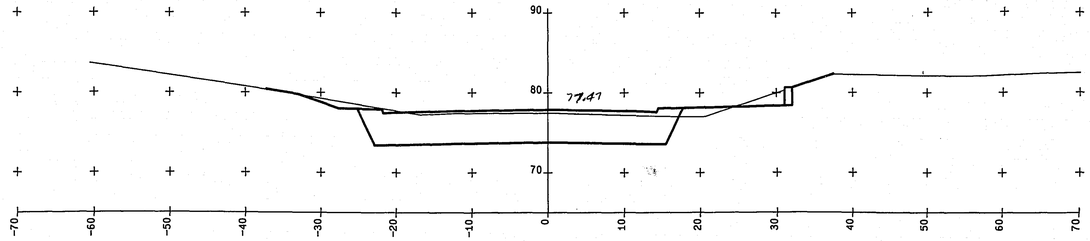

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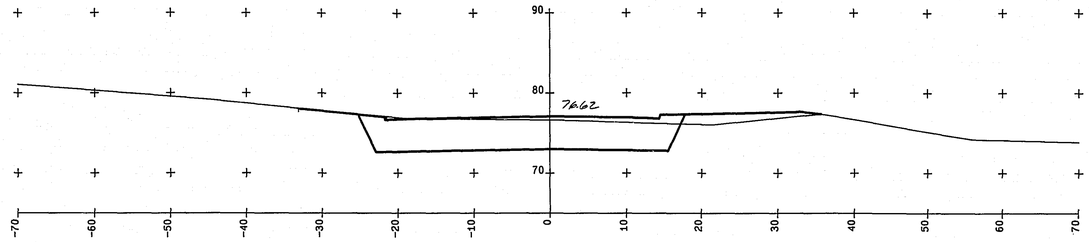

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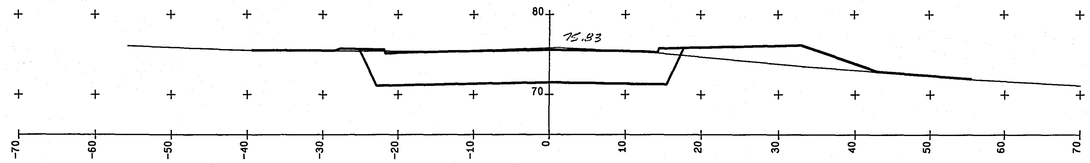

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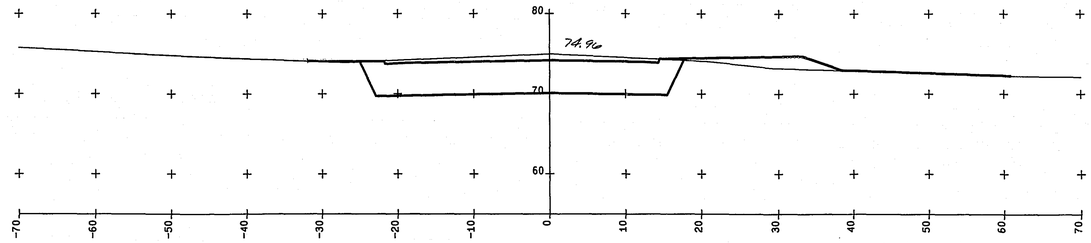

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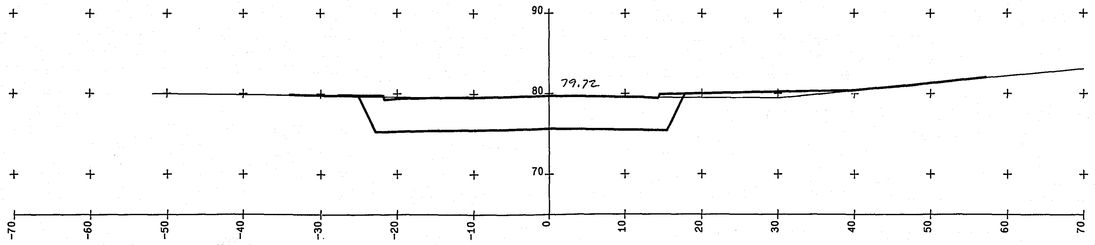

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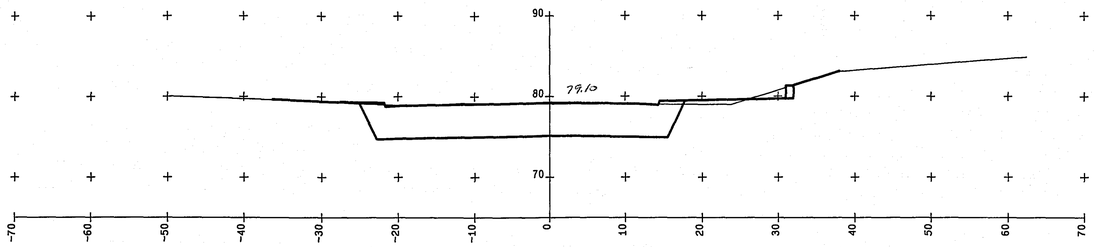

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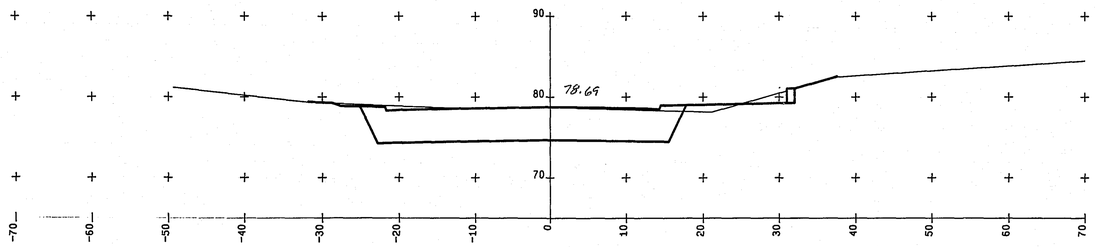

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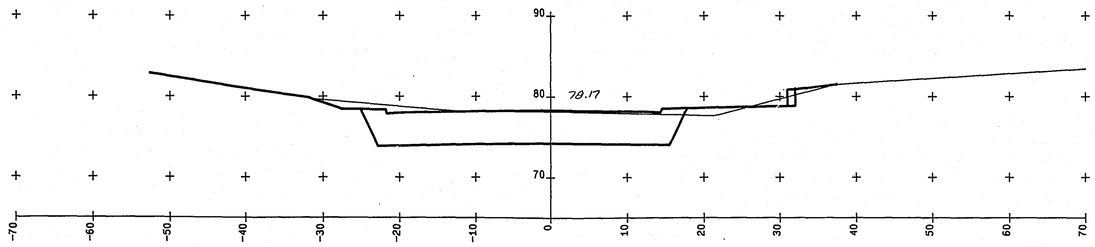

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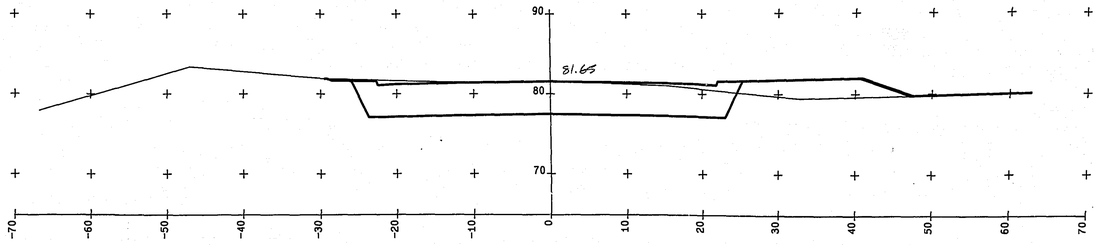

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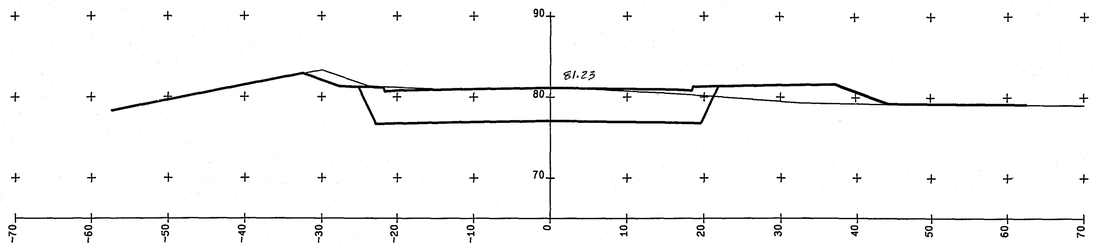

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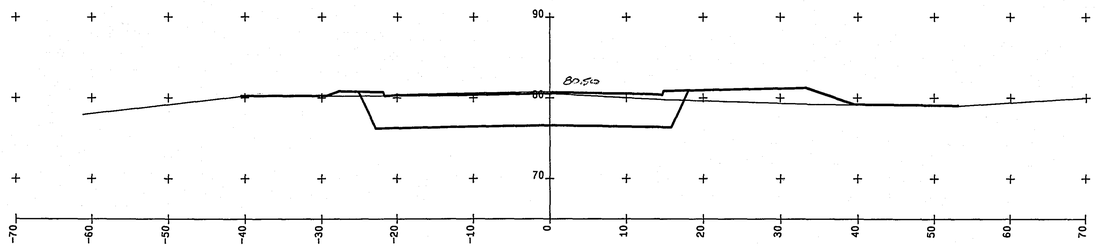

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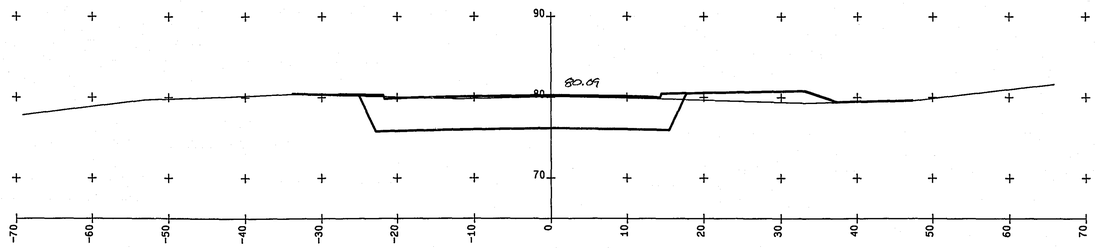

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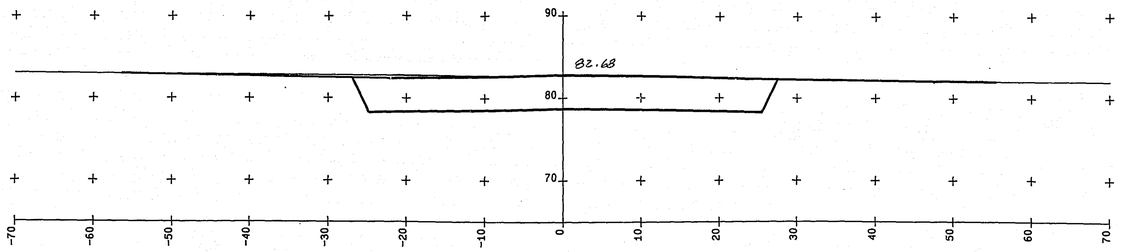

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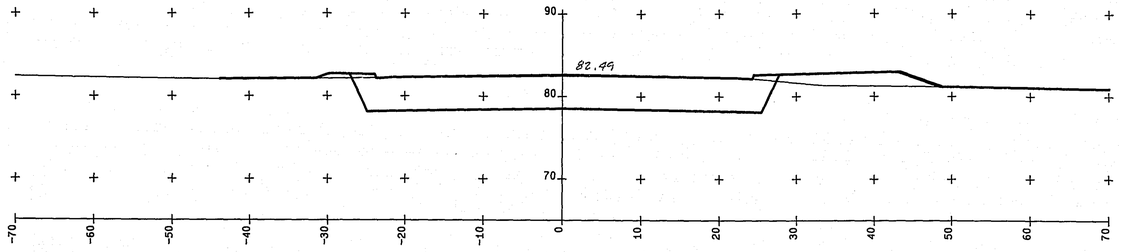

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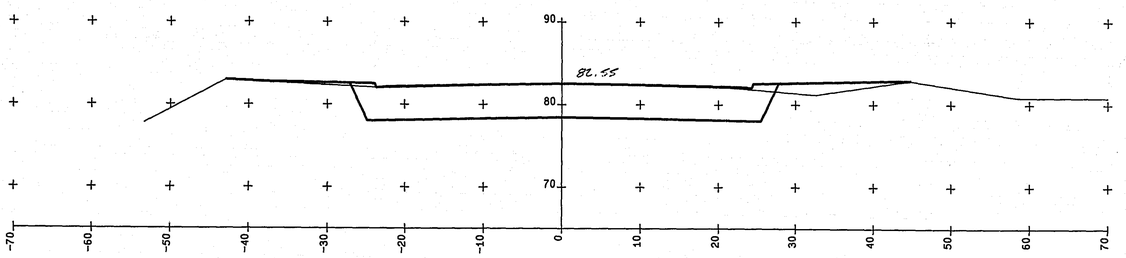

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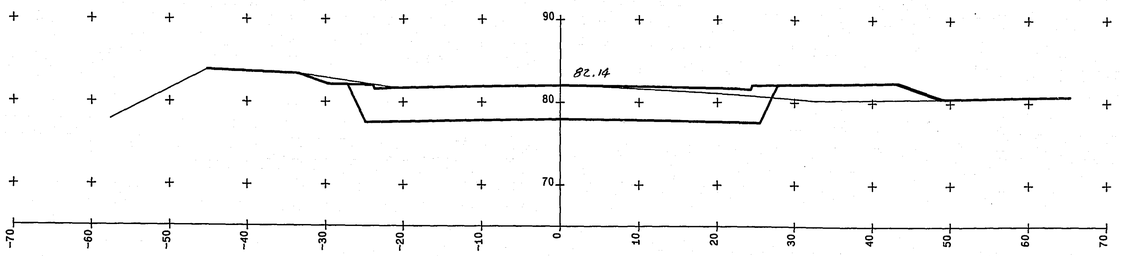
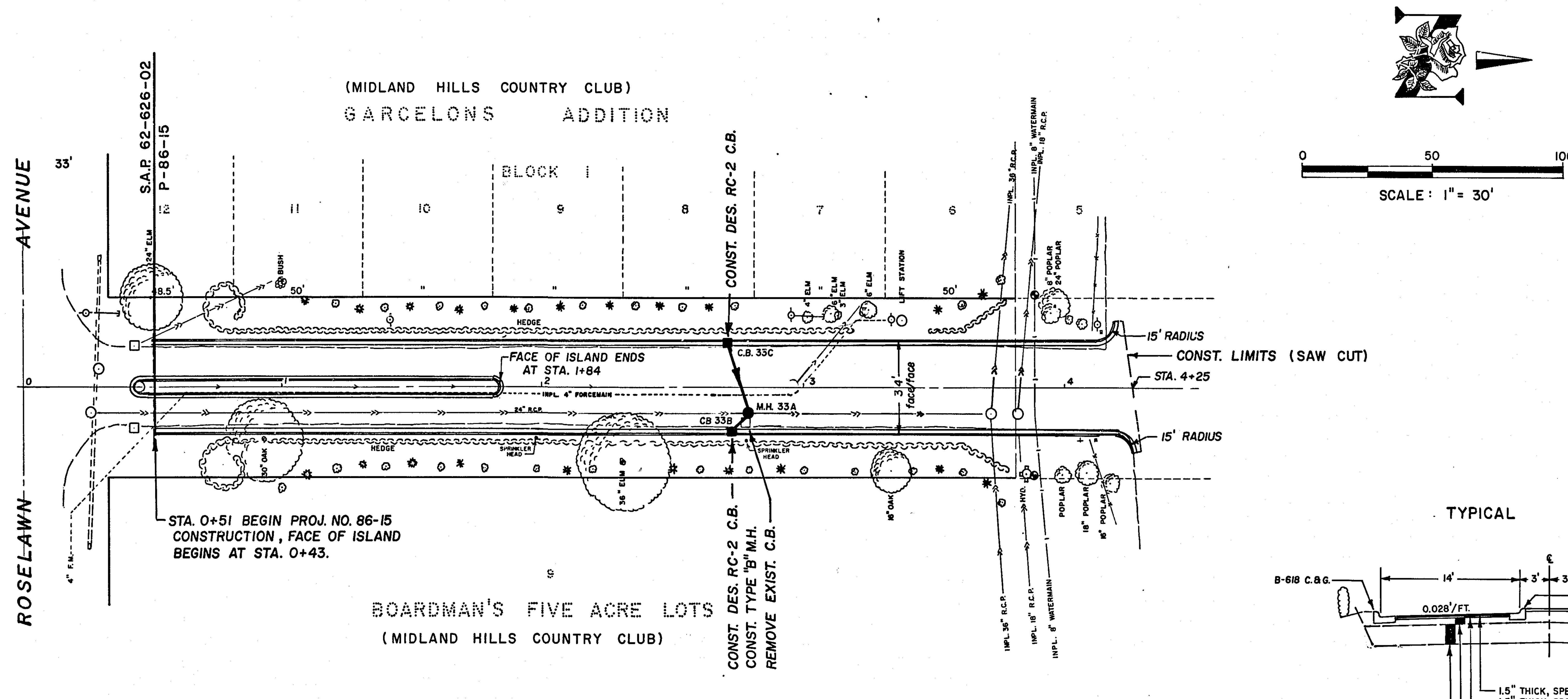
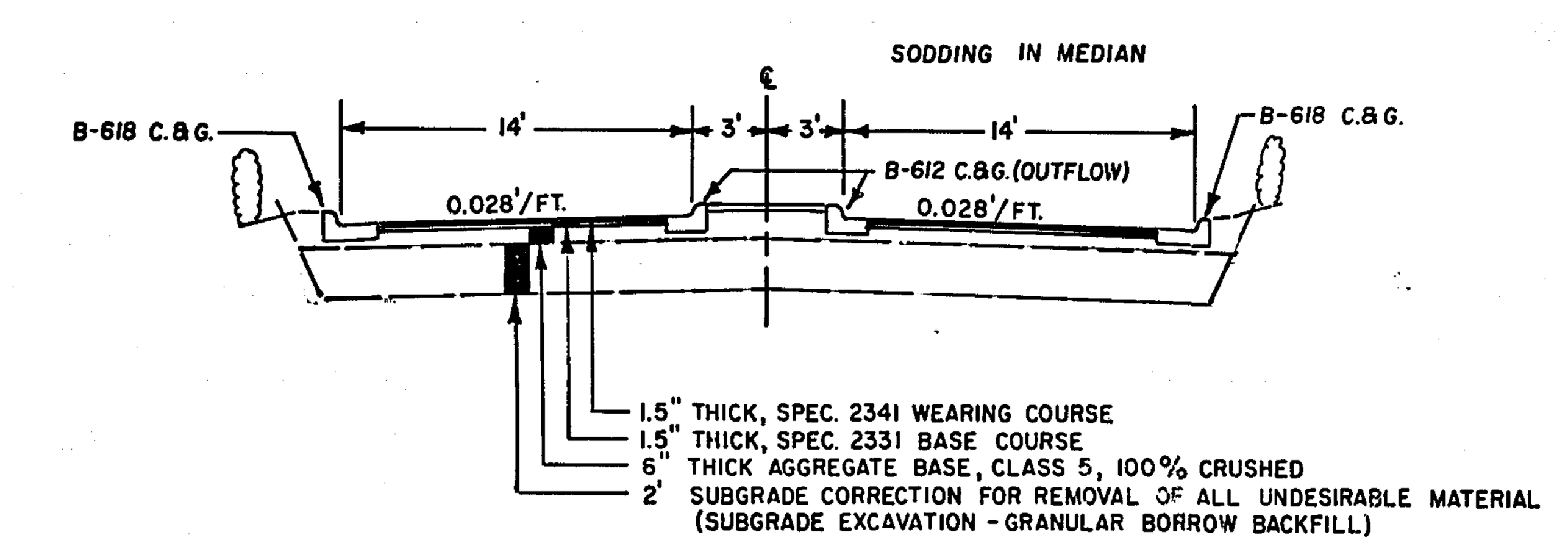


48+09.00

TOPOGRAPHY	PLOTTED BY	DATE	CHECKED BY	DATE
	B.H. BEHNING	6-20-86		
UTILITIES	PLOTTED BY	DATE	CHECKED BY	DATE
	B.H. BEHNING	6-20-86		
PROFILE	PLOTTED BY	DATE	AS-BUILT BY	DATE
	B.H. BEHNING	6-05-87		



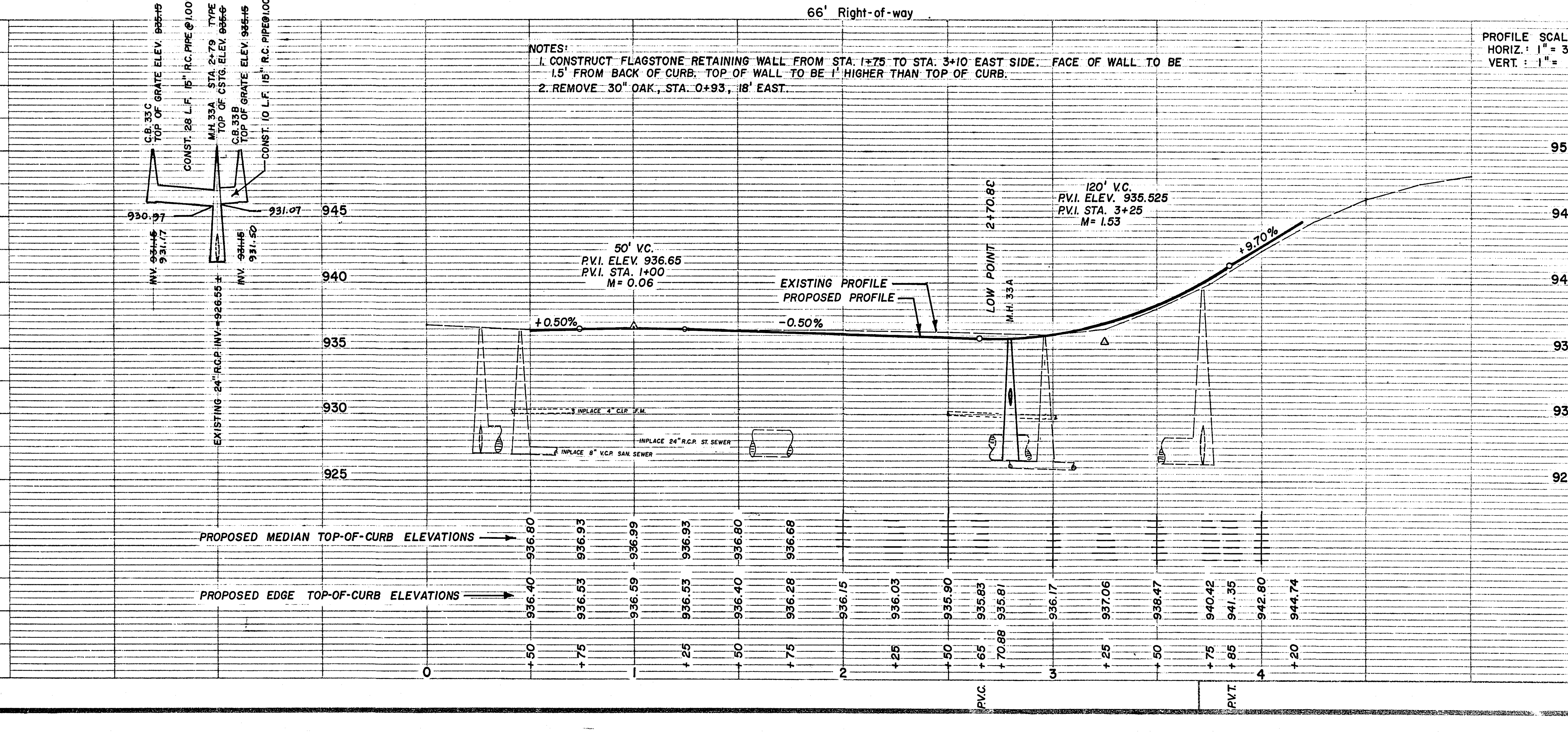


FINISHED ℄ ELEVATIONS ON SECTIONS WITHOUT MEDIAN ARE 0.02' HIGHER THAN TOP OF CURB ELEVS.

FULHAM STREET

66' Right-of-way

NOTES:
1. CONSTRUCT FLAGSTONE RETAINING WALL FROM STA. 1+75 TO STA. 3+10 EAST SIDE. FACE OF WALL TO BE 1.5' FROM BACK OF CURB. TOP OF WALL TO BE 1' HIGHER THAN TOP OF CURB.
2. REMOVE 30" OAK, STA. 0+93, 18' EAST.



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: J.A.
DATE: 1-4-89

CHARLES V. HONCHELL
REGISTERED PROFESSIONAL ENGINEER
10695
STATE OF MINNESOTA
Charles V. Honchell
7-2-87

ENGINEERING DEPARTMENT
CITY OF ROSEVILLE
STREET RECONSTRUCTION
FULHAM STREET
FROM ROSELAWN AVE. TO 400'± NORTH
CITY PROJECT NO. 86-15

27-117

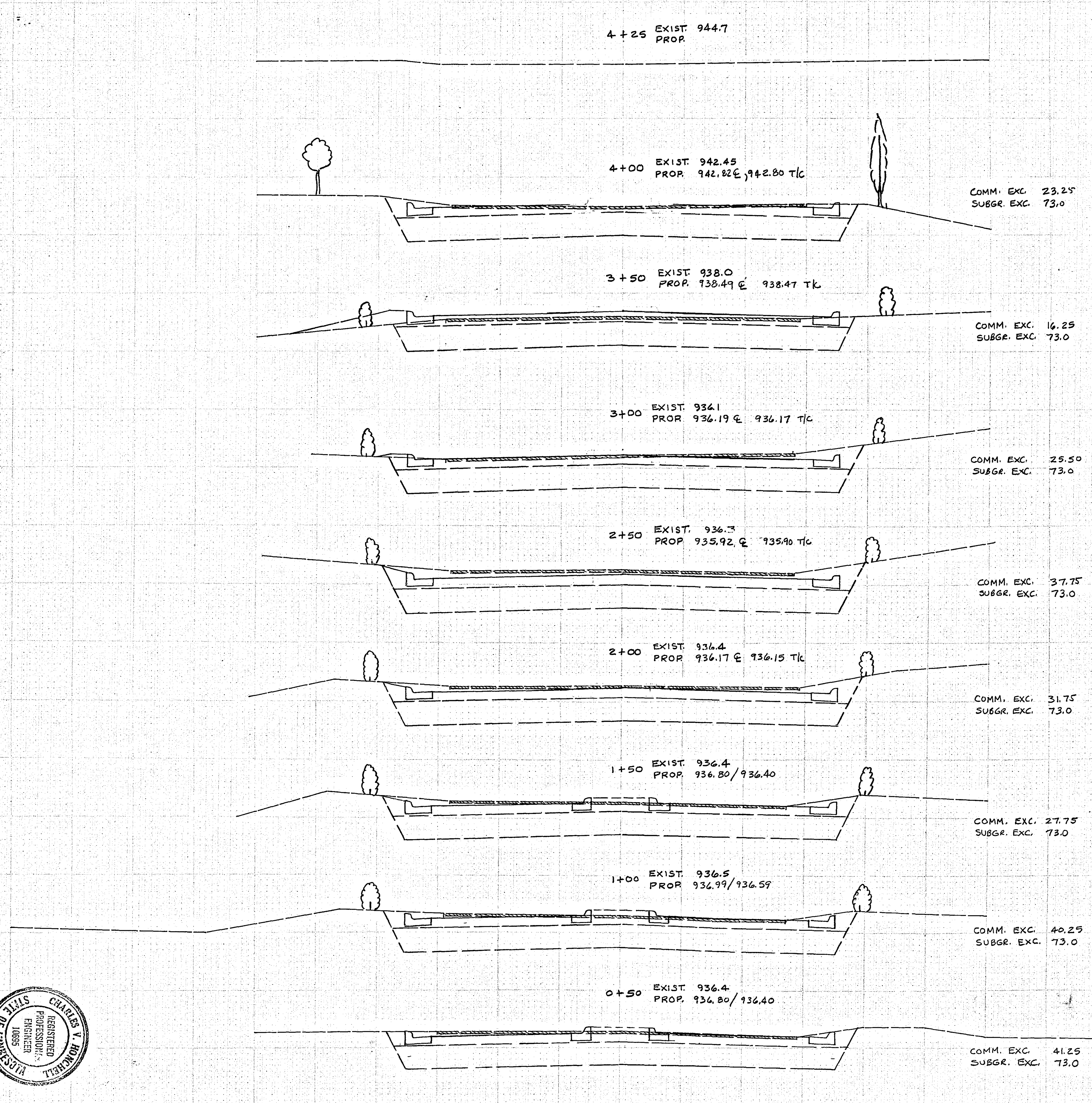
SHEET NO. 29A OF 29 SHEETS

ORIGINAL SURVEY		BY	DATE
	SURVEYED	D.D.F., J.A.O., W.M.C., ISAK	6-13-86
NOTE BOOK	PLOTTED	B.H.B.	6-23-86
NO.	TEMPLATE	B.H.B.	6-02-87
	AREAS		
	AREAS CHECKED		

FINAL SURVEY		BY	DATE
	SURVEYED		
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	AREAS CHECKED		

EARTHWORK COMPUTATIONS

STA.	DIST.	COMM. EXC.	S.G. EXC.	C.E./C.Y.	S.G./C.Y.
0+51		41.25	73.0		
1+00	49	40.25	73.0	73.95	132.48
+50	50	27.75	73.0	62.96	135.18
2+00	50	31.75	73.0	55.09	135.18
+50	50	37.75	73.0	64.35	135.18
3+00	50	25.50	73.0	58.56	135.18
+50	50	16.25	73.0	38.66	135.18
4+00	50	23.25	73.0	36.57	135.18
+25	25	28.50	0	23.96	33.80
				414.1	977.4



HIGHWAY FEDERAL AID SHEET
PLATE 3-FULL CROSS SECTION-FULL DOT
TELEDYNE
PRINTED IN U.S.A.

CHARLES V. HONCHELL
REGISTERED PROFESSIONAL ENGINEER
10695
STATE OF MINNESOTA

City of Roseville   Proj. no. P-86-15   Fulham Street   27-117