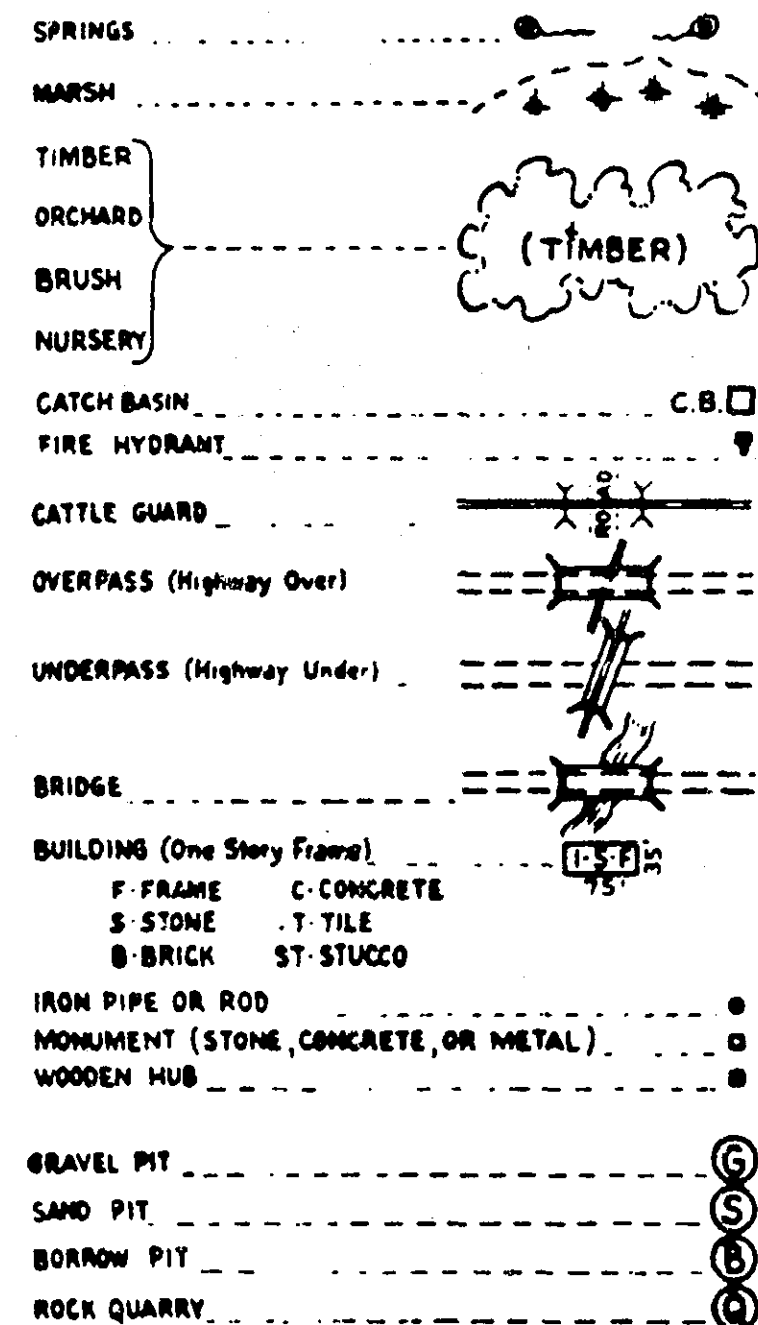
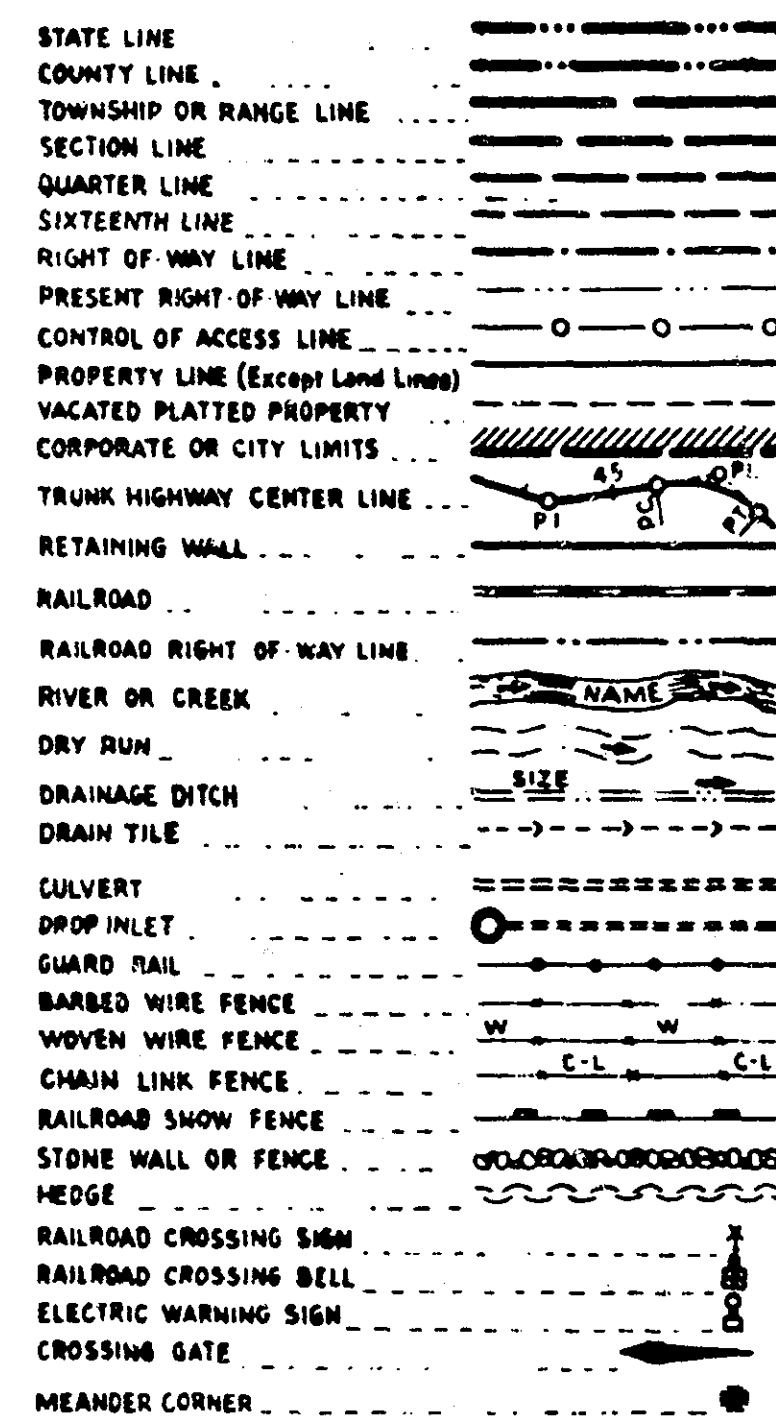
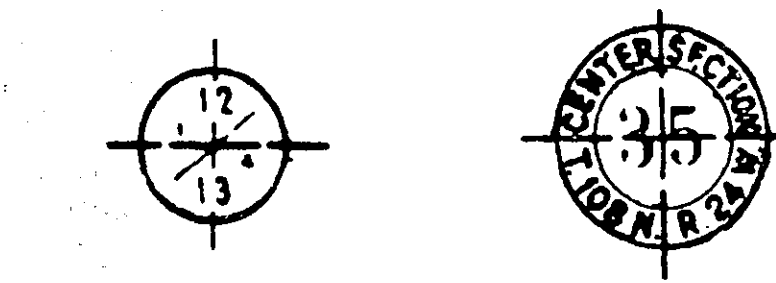
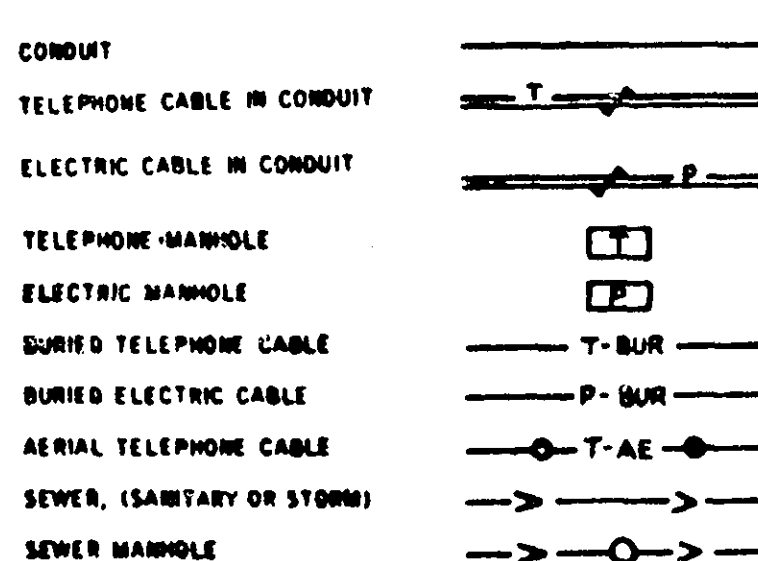
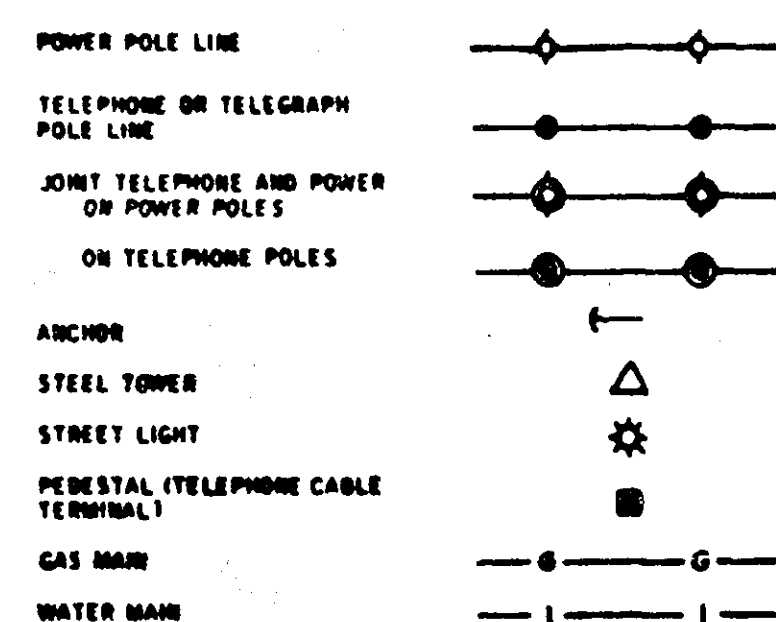


PLANS SYMBOLS



UTILITIES SYMBOLS



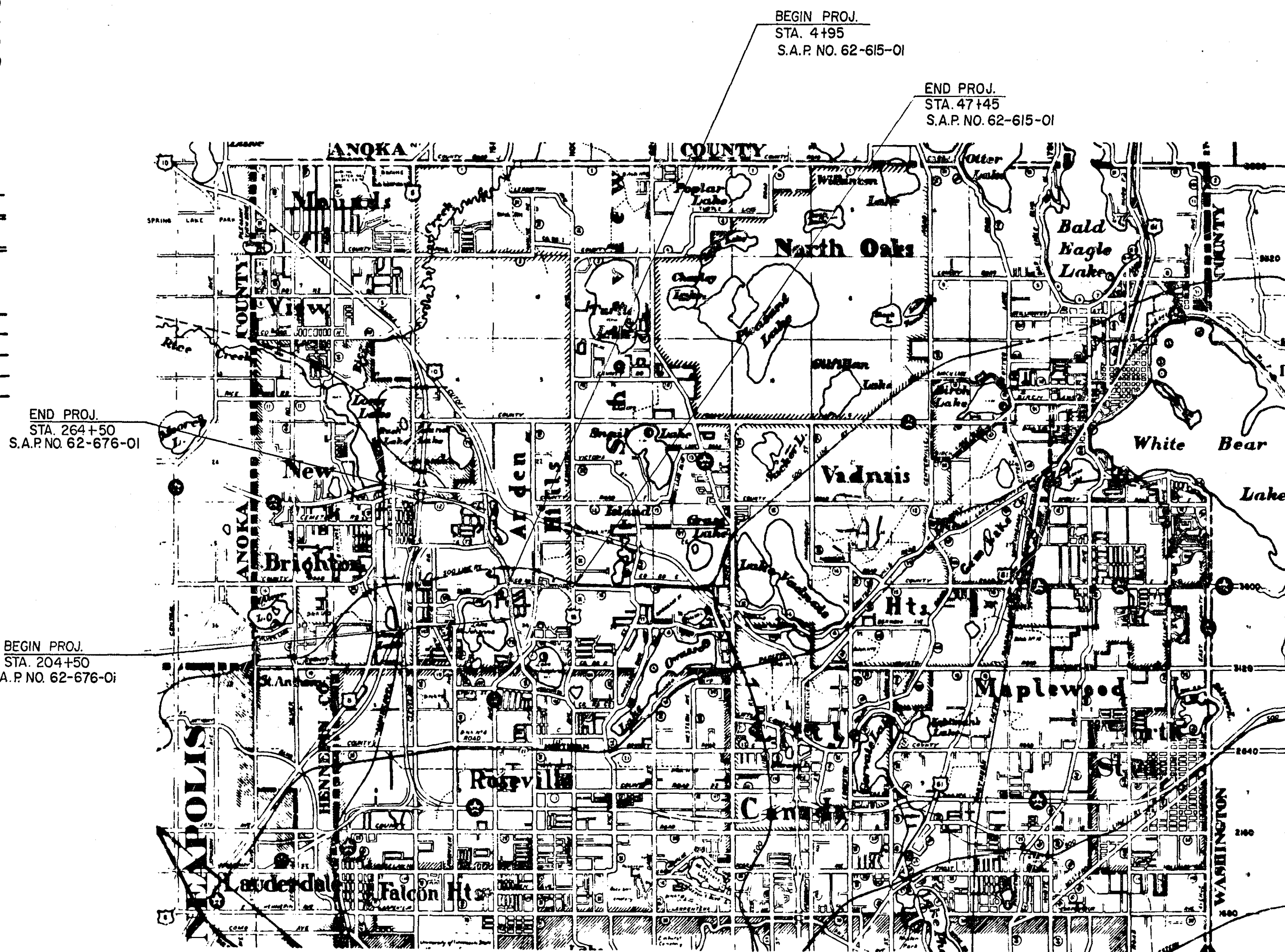
NOTE: SECTION NUMBERS READ FROM THE SOUTH

PIT DATA

PIT NO. _____	Located in _____
PIT NO. _____	Located in _____

S.A.P. NO. 62-676-01 C.T.B.
GROSS LENGTH 5800 FEET 1.0984 MILES
BRIDGE-LENGTH FEET MILES
EXCEPTIONS-LENGTH FEET MILES
NET LENGTH 5,800 FEET 1.0984 MILES

S.A.P. NO. 62-615-01 C.T.B.
GROSS LENGTH 4,250 FEET 0.804 MILES
BRIDGE-LENGTH FEET MILES
EXCEPTIONS-LENGTH 816 FEET 0.155 MILES
NET LENGTH 3,434 FEET 0.649 MILES



CITY OF ST. PAUL

OFFICE OF COUNTY ENGINEER

RAMSEY COUNTY

CONSTRUCTION PLAN FOR GRADING AND BITUMINOUS SURFACING

SNELLING AVE. - S.A.P. NO. 62-676-01 C.T.B.

BETWEEN: ARDEN PLACE AND: COUNTY ROAD "F"
STA. 204+50 STA. 264+50

COUNTY ROAD E - S.A.P. NO. 62-615-01 C.T.B.

BETWEEN: SNELLING AVE AND LEXINGTON AVE
STA. 4+95 STA. 47+45

PLAN, 1 inch = 50 Feet
PROFILE, Horiz. 1 inch = 50 Feet, Vert. 1 inch = 5 Feet
CROSS-SECTIONS, 1 inch = 10 Feet
LAYOUT, 1 inch = 5280 Feet

SNELLING AVE

DESIGN DESIGNATION
A.D.T. NO. OF T.H. 51 1900
A.D.T. NO. OF CO. RD. "E" 2925
A.D.T. NO. OF CO. RD. "E" 2575

H.C.A.D.T. 150-300
DESIGN SPEED = 50 M.P.H.
DESIGN LOAD = 9 TON
SOIL FACTOR = 100 %

COUNTY ROAD "E"

DESIGN DESIGNATION
A.D.T. W. OF LEXINGTON = 6,600 1985 A.D.T. = 10,500
A.D.T. E. OF SNELLING = 3,200 1985 A.D.T. = 7,000
H.C.A.D.T. 1985 = 525
DESIGN SPEED = 45 M.P.H.
DESIGN LOAD = 9 TON
SOIL FACTOR = 100 %

INDEX

SNELLING AVE.
SHEET NO. DESCRIPTION
1 TITLE SHEET
2 TYPICAL SECTIONS & ESTIMATED QUANTITIES
3 DRAINAGE CHART
4-9 PLAN PROFILES
10-12 CONSTRUCTION PLANS

INDEX

COUNTY ROAD E
SHEET NO. DESCRIPTION
2 ESTIMATED QUANTITIES
13 TYPICAL SECTIONS
14 DRAINAGE CHART
15-18 PLAN PROFILES & CONSTRUCTION PLAN

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.
Raymond J. Snyder REG. NO. 6334 DATE 7/22/70

RECOMMENDED FOR APPROVAL *Don R. Arden* COUNTY ENGINEER DATE 2/2/71

APPROVED *Samuel D. Calhoun* VICE CHAIRMAN OF THE RAMSEY COUNTY BOARD DATE 1/24/71

APPROVED _____ MAYOR, VILLAGE OF ARDEN HILLS DATE _____

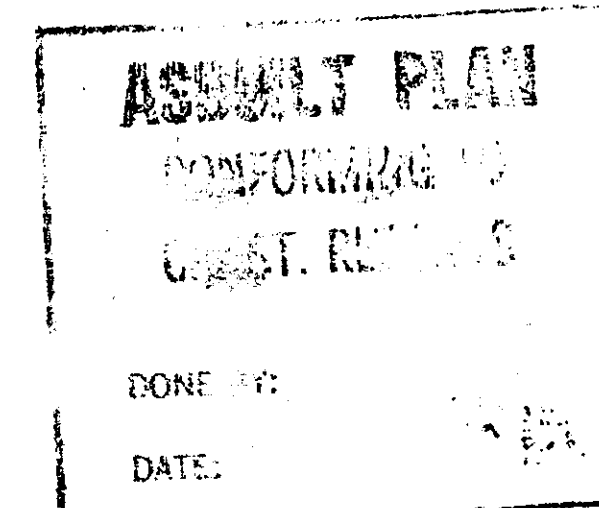
APPROVED _____ DATE _____

MINNESOTA STATE HIGHWAY DEPARTMENT

RECOMMENDED FOR APPROVAL *C.E. Weichelt* DATE 2-26-71

RECOMMENDED FOR APPROVAL *John F. Schuch* DISTRICT STATE AID ENGINEER DATE 2-26-71

APPROVAL *John F. Schuch* STATE AID ENGINEER DATE 3/1/71



THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JANUARY 1, 1968 AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED JULY 1, 1969 SHALL GOVERN

S.A.P. NO. 62-676-01 C.T.B.

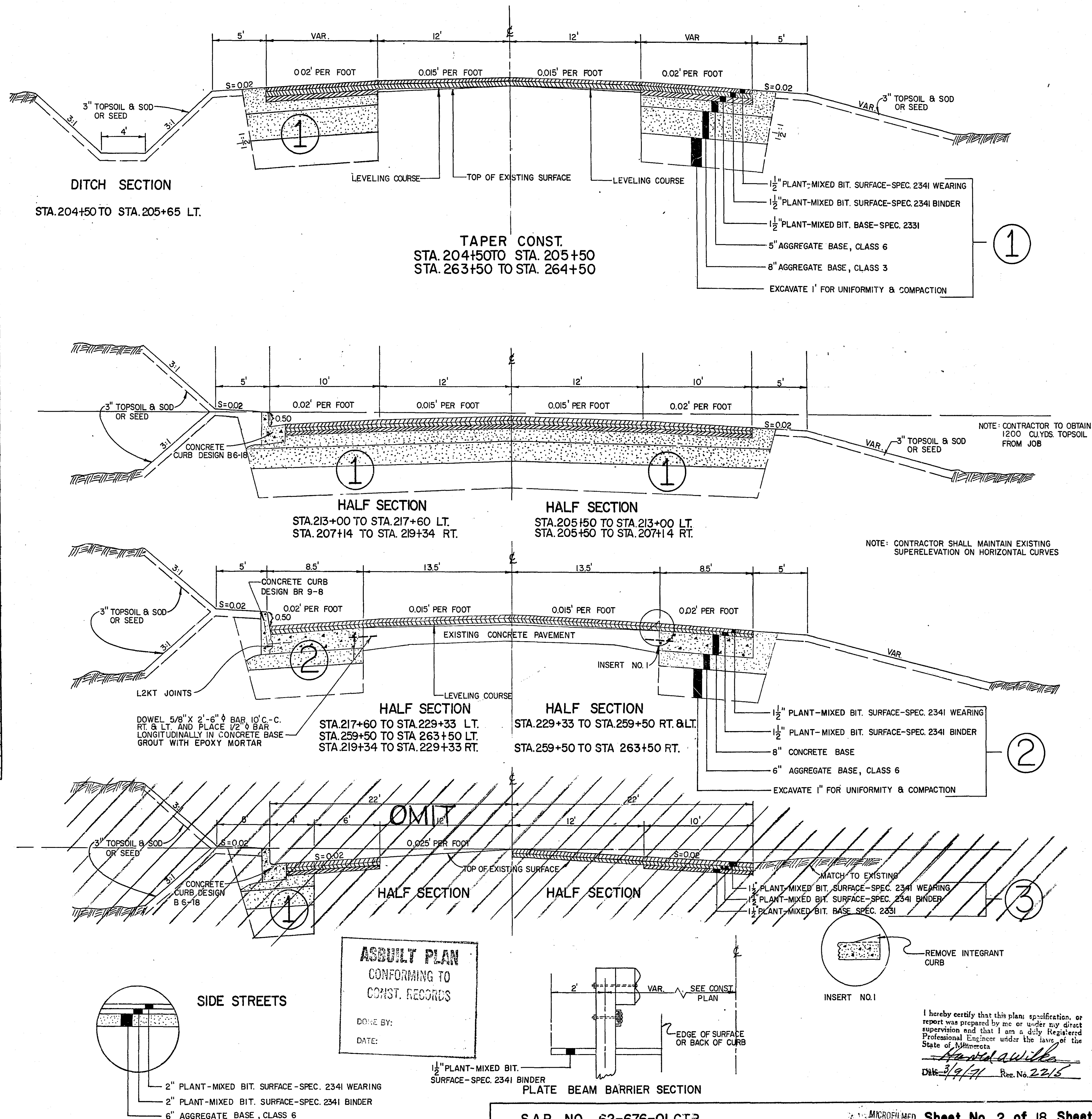
Sheet No. 1 of 18 Sheets

STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	SNELLING AVE ESTIMATED QUANTITIES	COUNTY RD E ESTIMATED QUANTITIES	TOTAL
2021.501	MOBILIZATION	L.S.	1		1
2101.502	CLEARING	TREE	5	5	10
2101.507	GRUBBING	TREE	5	5	10
2104.502	REMOVE PAVEMENT	SQ. YD.	115	8,585	8,700
2104.509	REMOVE GUARD RAIL	L.F.	1,860		1,860
2104.510	REMOVE FENCE(WOOD 2 RAIL)	L.F.		290	290
2104.515	REMOVE PIPE SEWERS	L.F.	16		16
2104.519	REMOVE INTEGRANT CURB	L.F.	3,035		3,035
2105.501	COMMON EXCAVATION	C.Y.	19,500	34,100	53,600
2105.525	TOP SOIL BORROW	C.Y.	1,000	1,000	2,000
2103.501	WATER	M.GAL.	100	200	300
2201.501	CONCRETE BASE	S.Y.	8,545		8,545
2201.511	STRUCTURAL CONCRETE	C.Y.	1,900		1,900
2201.529	REINFORCEMENT BARS	POUND	15,000		15,000
2201.531	STANDARD JOINTS,DESIGN L2KT	L.F.	1,834		1,834
2201.531	STANDARD JOINTS,DESIGN C	L.F.	3,634		3,634
2211.501	AGGREGATE BASE,CLASS 3	TON	2,679		2,679
2211.501	AGGREGATE BASE,CLASS 6	TON	6,535		6,535
2211.501	AGGREGATE BASE,CLASS 5	TON		700	700
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	28	364	392
2331.514	BASE COURSE MIXTURE	TON	1,596	10,404	12,000
2341.504	BITUMINOUS MATERIAL FOR MIXTURE	TON	144	141	285
2341.508	WEARING COURSE MIXTURE	TON	2,457		2,457
2341.510	BINDER COURSE MIXTURE	TON	2,480	2,820	5,300
2341.512	LEVELING COURSE MIXTURE	TON	350		350
2351.504	ASPHALT CEMENT	TON		175	175
2351.509	ASPHALT CONCRETE WEARING COURSE AND FILLER	TON		2,820	2,820
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL.	3,607	3,393	7,000
2358.501	BITUMINOUS MATERIAL FOR PRIME COAT	GAL.	1,790	7,910	9,700
2451.503	GRANULAR BACKFILL	C.Y.	200	1,100	1,300
2501.511	24" METAL PIPE CULVERT	L.F.	54		54
2501.532	24" METAL APRON	APRON	1		1
2501.536	15" CONCRETE APRONS	APRON	1	3	4
2501.536	18" CONCRETE APRONS	APRON	1	1	1
2503.502	15" REINFORCED CONCRETE SEWER CL II	L.F.	406	1,740	2,146
2503.502	18" REINFORCED CONCRETE SEWER CL II	L.F.	336	1,186	1,522
2503.502	21" REINFORCED CONCRETE SEWER CL II	L.F.		241	241
2503.502	30" REINFORCED CONCRETE SEWER CL II	L.F.	26		26
2501.536	30" CONCRETE APRONS	APRON	1		1
2501.536	24" CONCRETE APRONS	APRON	2		2
2501.511	18" METAL PIPE CULVERT	L.F.	10		10
2506.506	CONSTRUCT MANHOLES,DESIGN A OR F	L.F.	11.7	38.5	50.2
2506.509	CONSTRUCT CATCH BASINS,DESIGN RC2	STRUCTURE	9	7	16
2506.509	CONSTRUCT CATCH BASINS,DESIGN LP4	STRUCTURE		8	8
2506.516	CASTING ASSEMBLIES	ASSEMBLY	4	4	8
2506.521	INSTALL CASTINGS	ASSEMBLY		4	4
2506.522	ADJUST FRAME AND RING CASTING	ASSEMBLY	8	28	36
2511.502	HAND PLACED RIP RAP,CLASS A	C.Y.		3	3
2511.504	FILTER BLANKET,TYPE I	C.Y.		1.5	1.5
2521.501	4" CONCRETE WALK	S.F.		1,887	1,887
2531.501	CONCRETE CURB AND GUTTER,DESIGN B618	L.F.	3,153		3,153
2531.501	CONCRETE CURB AND GUTTER,DESIGN B624	L.F.		7,057	7,057
2531.502	CONCRETE CURB,DESIGN S-5	L.F.		315	315
2531.502	CONCRETE CURB,DESIGN BR3-8	L.F.	2,583		2,583
2531.505	CONCRETE MEDIAN	L.F.		190	190
2554.501	TRAFFIC BARRIER,DESIGN B	L.F.	300		300
2554.521	ANCHORAGE ASSEMBLIES	ASSEMBLY	4		4
2575.501	ROADSIDE SEEDING	ACRE	4		4
2575.502	SEED,MIXTURE 6	POUND	300		300
2575.505	SODDING	S.Y.	6,268	12,900	19,168
2575.531	COMMERCIAL FERTILIZER,ANALYSIS 12-12-12	TON	3	1	4
104.604	REMOVE HYDRANT	EACH	1	8	9
504.666	INSTALL HYDRANT	EACH	1	8	9
2503.502	24" REINFORCED CONCRETE SEWER CL II	L.F.	248		248
2557.501	WIRE FENCE,DESIGN 6069322	L.F.	500		500
504.679	ADJUST VALVE BOX	BOX		25	25
557.604	INSTALL FENCE (WOOD 2-RAIL)	L.F.		284	284

STANDARD	DETAIL	PLATES
3133A	RIPRAP AT R.C.P. OUTLETS	
4110D	COVER CASTING FOR MANHOLE	
4180F	MANHOLE STEP CASTING	
0001A	SPECIFICATION REFERENCE TO STANDARD PLATES	
1120K	CONTRACTION JOINTS	
1140J	LONGITUDINAL JOINTS	
1141B	PAVEMENT KEYWAY FOR KEYED JOINT CONSTRUCTION	
3000F	REINFORCED CONCRETE PIPE	
3040C	CORRUGATED METAL PIPE	
3100F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE	
3123F	METAL APRON FOR C.M. PIPE	
3124A	METAL APRON CONNECTION	
4000G	MANHOLE OR CATCH BASIN	
4005H	MANHOLE OR CATCH BASIN	
4016C	CURB OPENING CATCH BASIN	
4101B	RING CASTING FOR MANHOLE OR CATCH BASIN	
4140D	SPECIAL GRATE CASTING FOR CATCH BASIN	
5215B	METAL SHOULDER DRAIN	
7020E	CONCRETE CURB	
7065C	BITUMINOUS CURB	
7100D	CONCRETE CURB AND GUTTERS	
8000C	STANDARD BARRICADES	
8008D	CONTRACTORS SIGN	
8307J	STRUCTURAL PLATE BEAM GUARDRAIL	
8319C	TWISTED END TREATMENT	
9102C	SODDING AT PIPE CULVERT ENDS	
7105C	CONCRETE MEDIAN	

TYPICAL SECTIONS



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

Harold A. Wilko

Date 3/9/71 Reg. No. 2215

S.A.P. NO. 62-676-01 C.T.B.

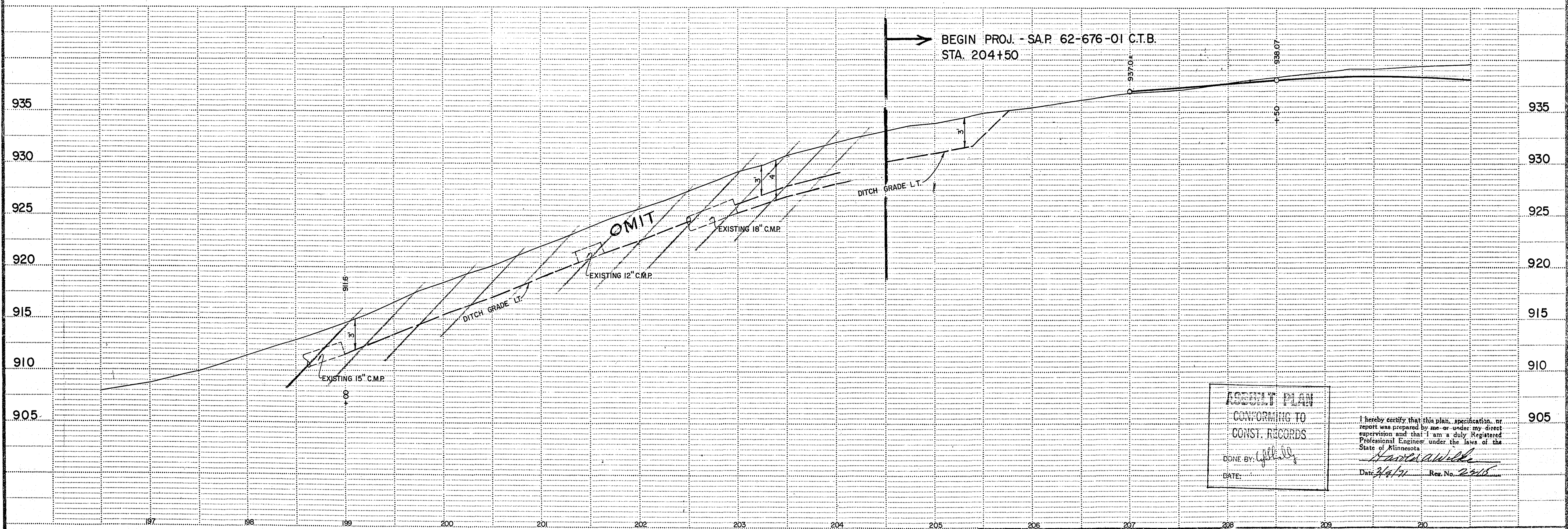
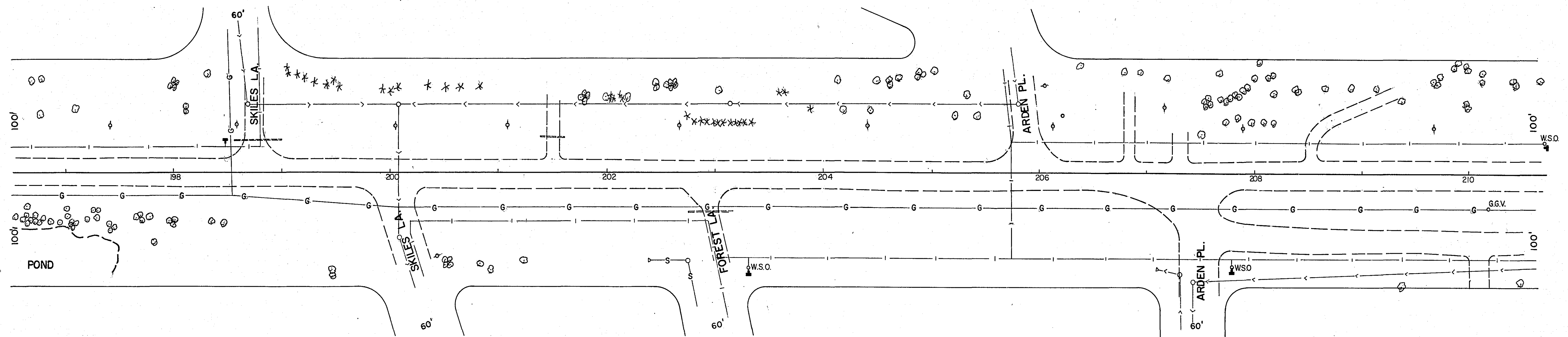
MICROFILMED Sheet No. 2 of 18 Sheets

19-103

CHART

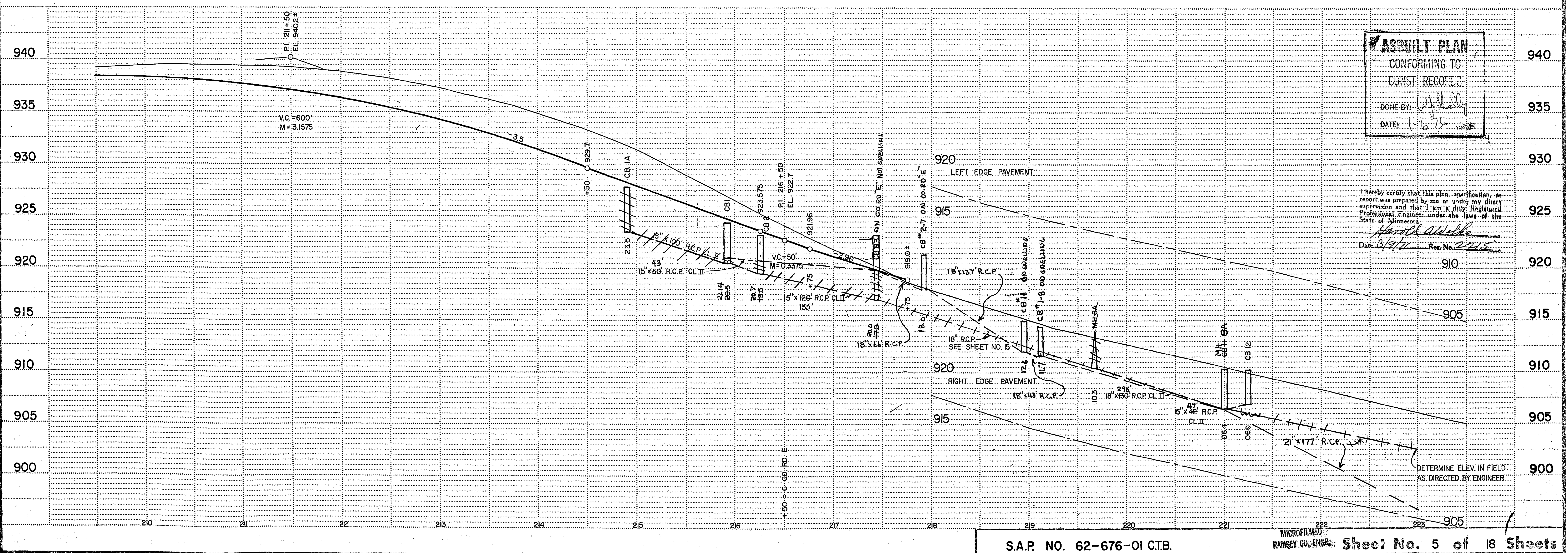
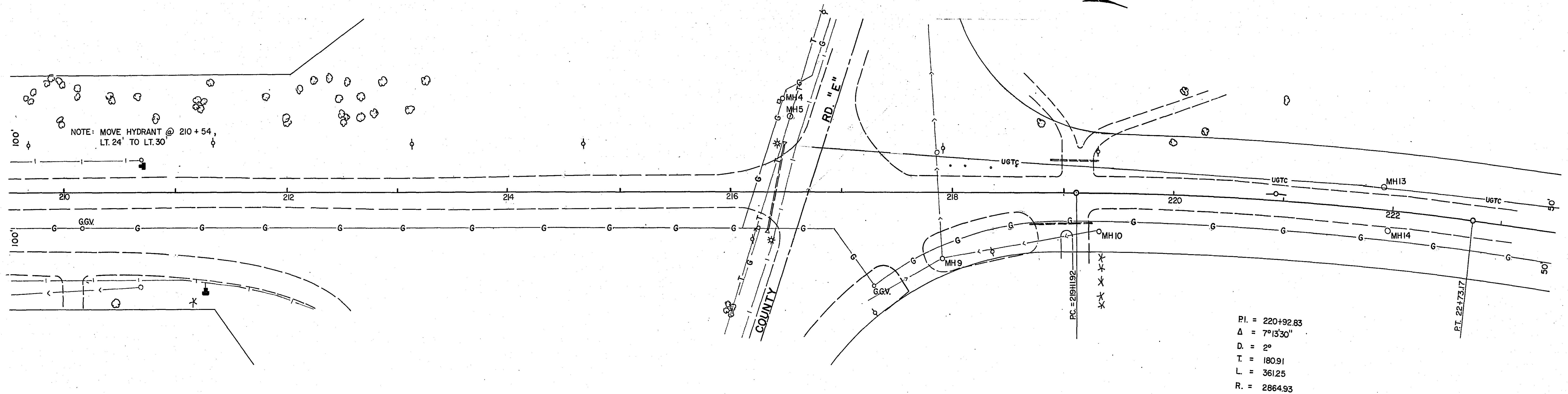
CASTINGS = B= NEENAH INLET FRAME, GRATE, CURB BOX R-3246B OR EQUAL (INCLUDED WITH STRUCTURE-NOT SEPARATE PAY ITEM).
E= RING CASTING NO.700-7, COVER CASTING NO.712



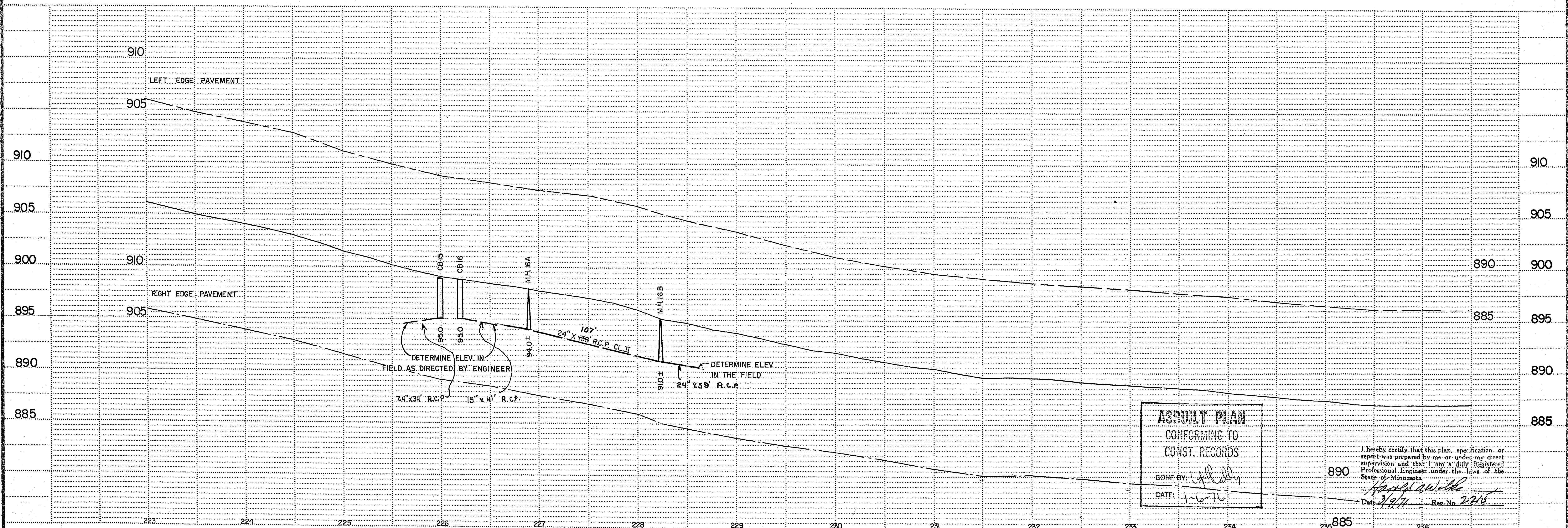
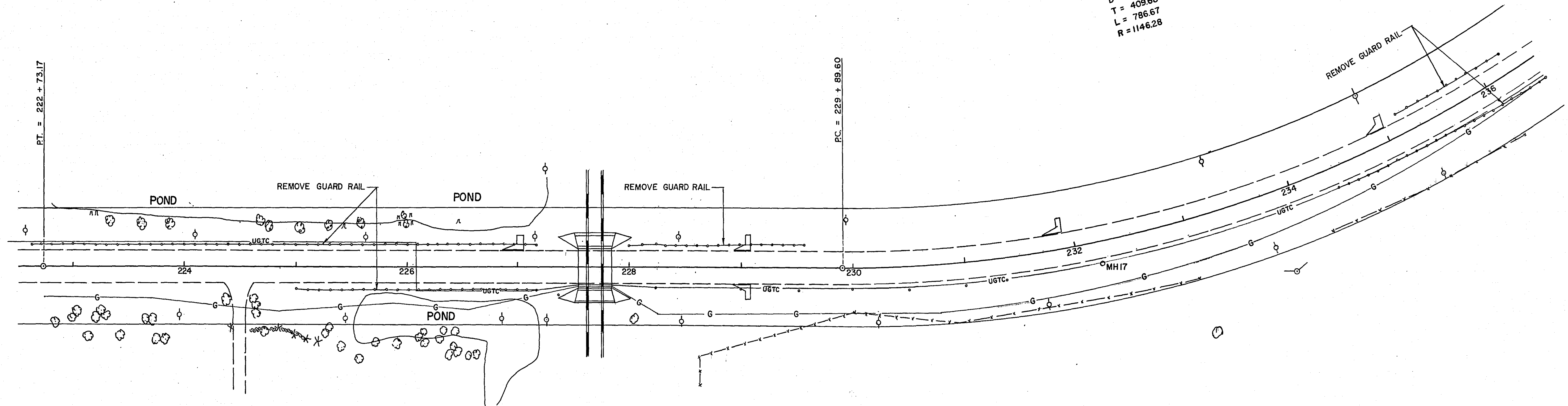


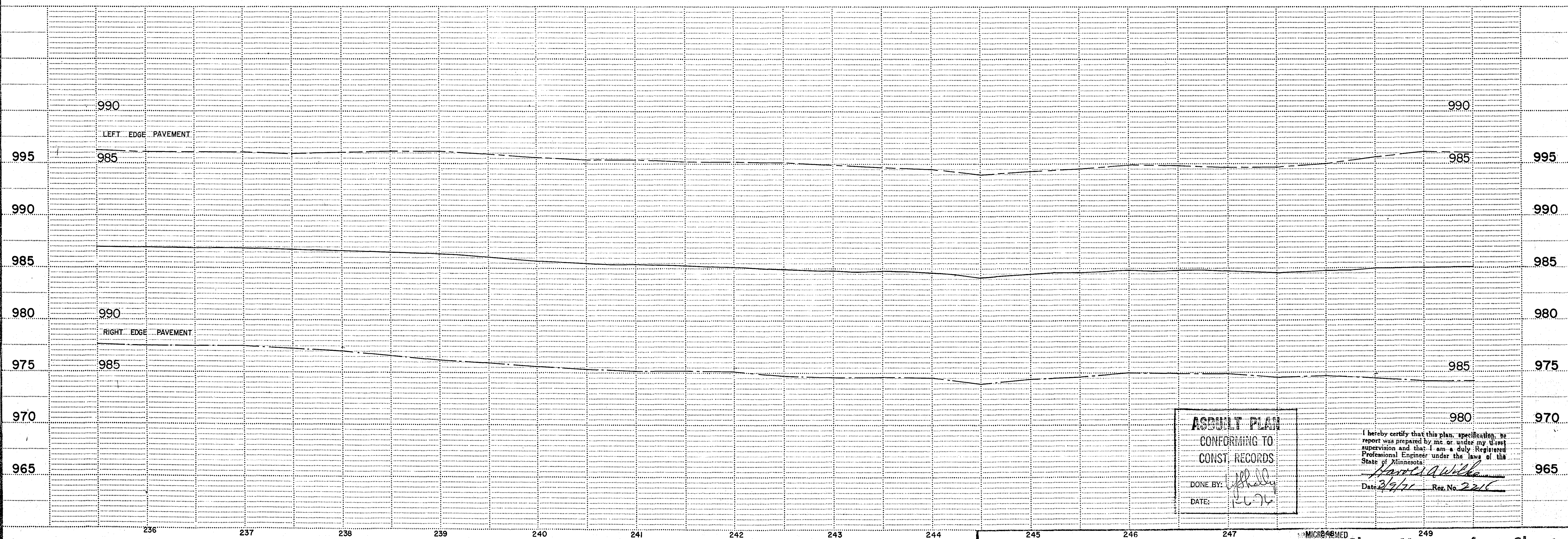
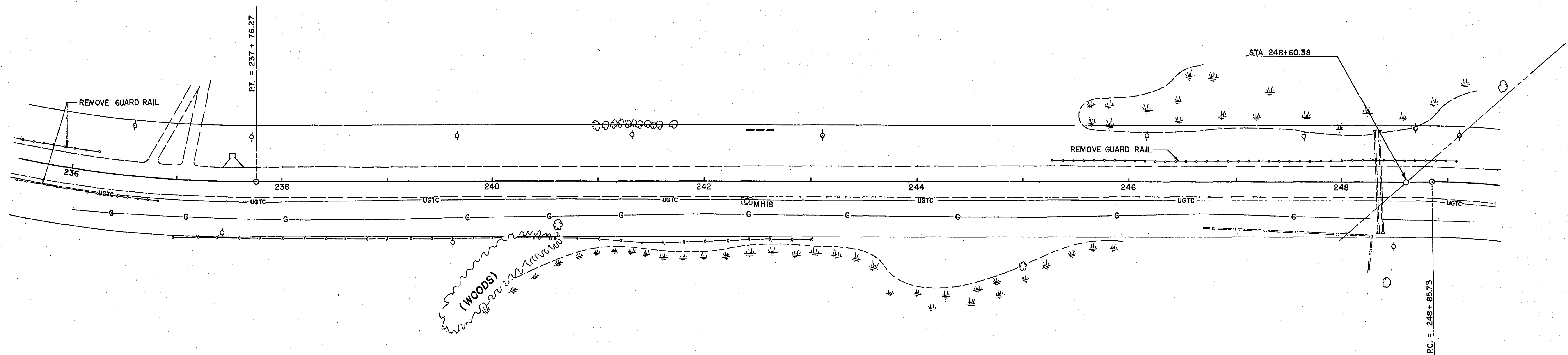
ASSENT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: *[Signature]*
DATE: *3/4/71*

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.
[Signature]
Date: *3/4/71* Reg. No. *2205*



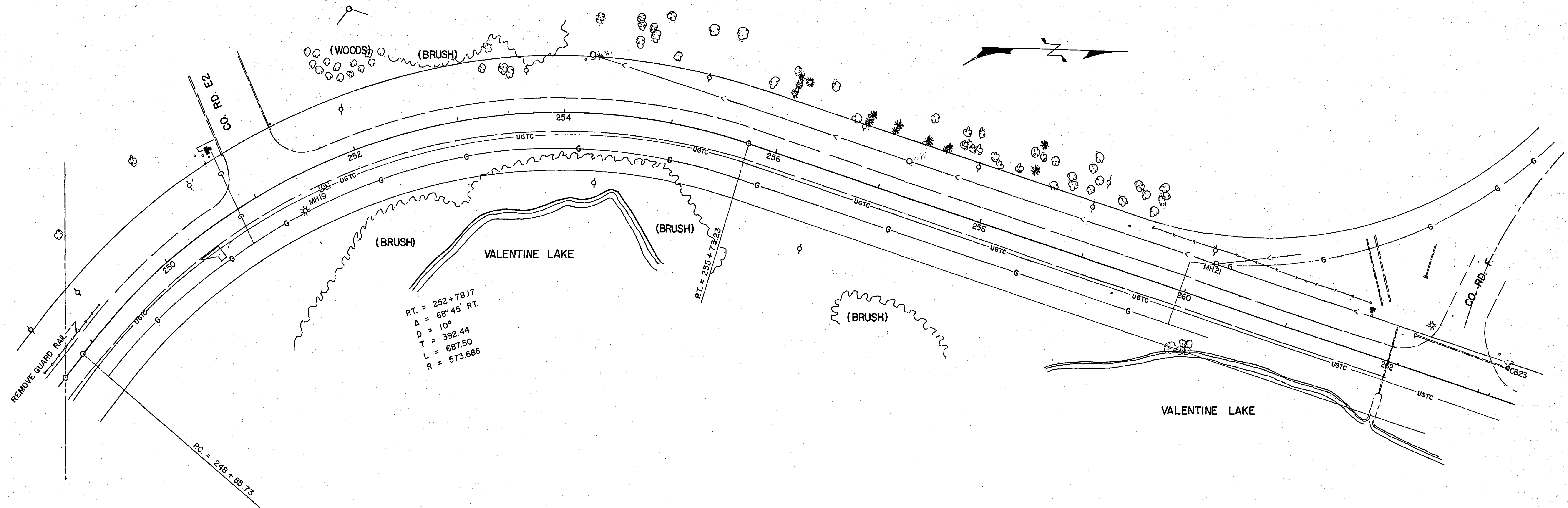
$PI = 233 + 99.28$
 $\Delta = 39^\circ 20' LT.$
 $D = 5^\circ$
 $T = 409.68$
 $L = 786.67$
 $R = 1146.28$





ASBUILT PLAN
 CONFORMING TO
 CONST. RECORDS
 DONE BY: *[Signature]*
 DATE: *2-2-76*

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.
[Signature]
 Date *3/2/76* Reg. No. *2206*



890

LEFT EDGE PAVEMENT

885

890

885

880

RIGHT EDGE PAVEMENT

885

880

249

250

251

252

253

254

255

256

257

258

259

260

261

262

885

880

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880

885

880

890

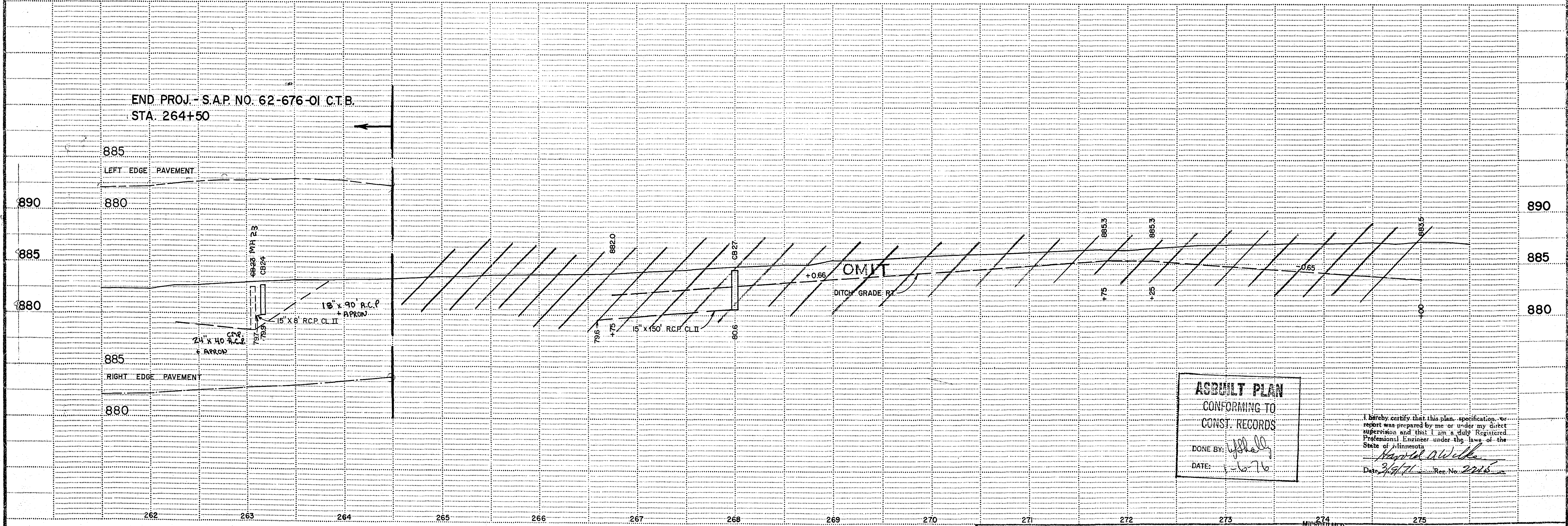
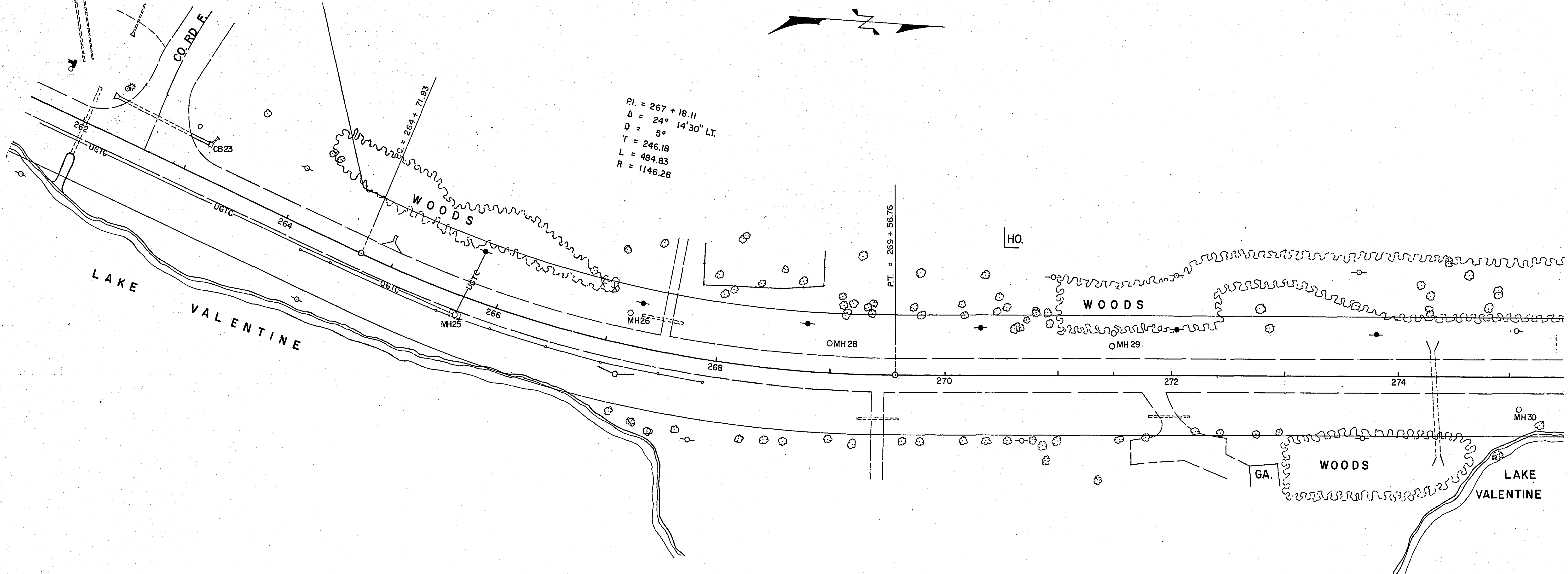
885

880

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

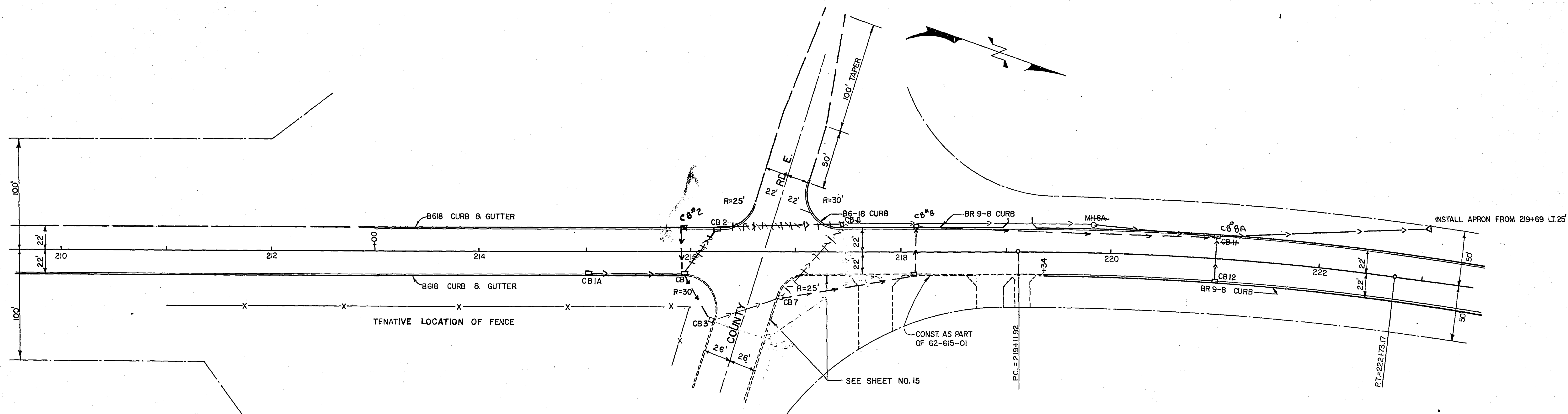
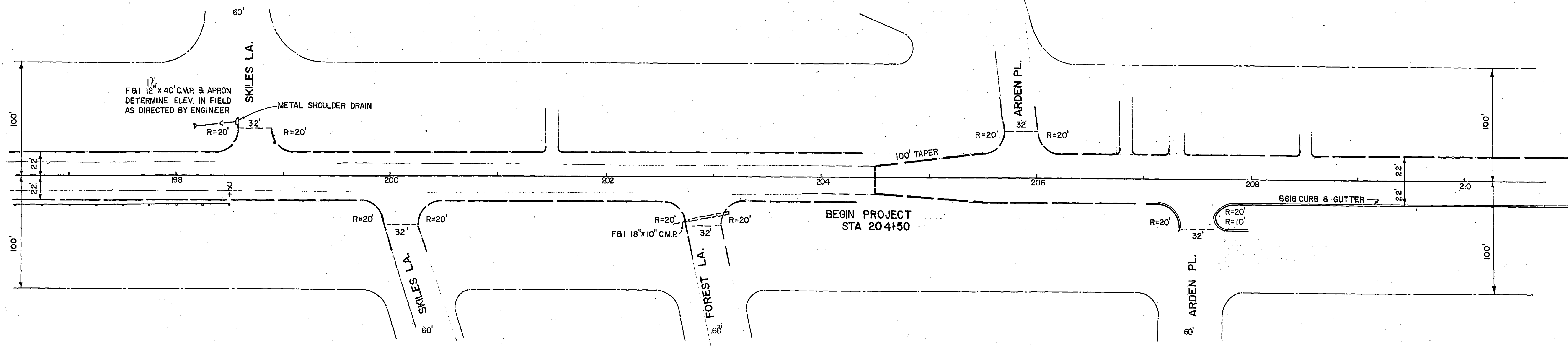
DONE BY: *[Signature]*
DATE: 12/76

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.
[Signature]
Date 3/2/77 Reg. No. 2213



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: *[Signature]*
DATE: 1-6-76

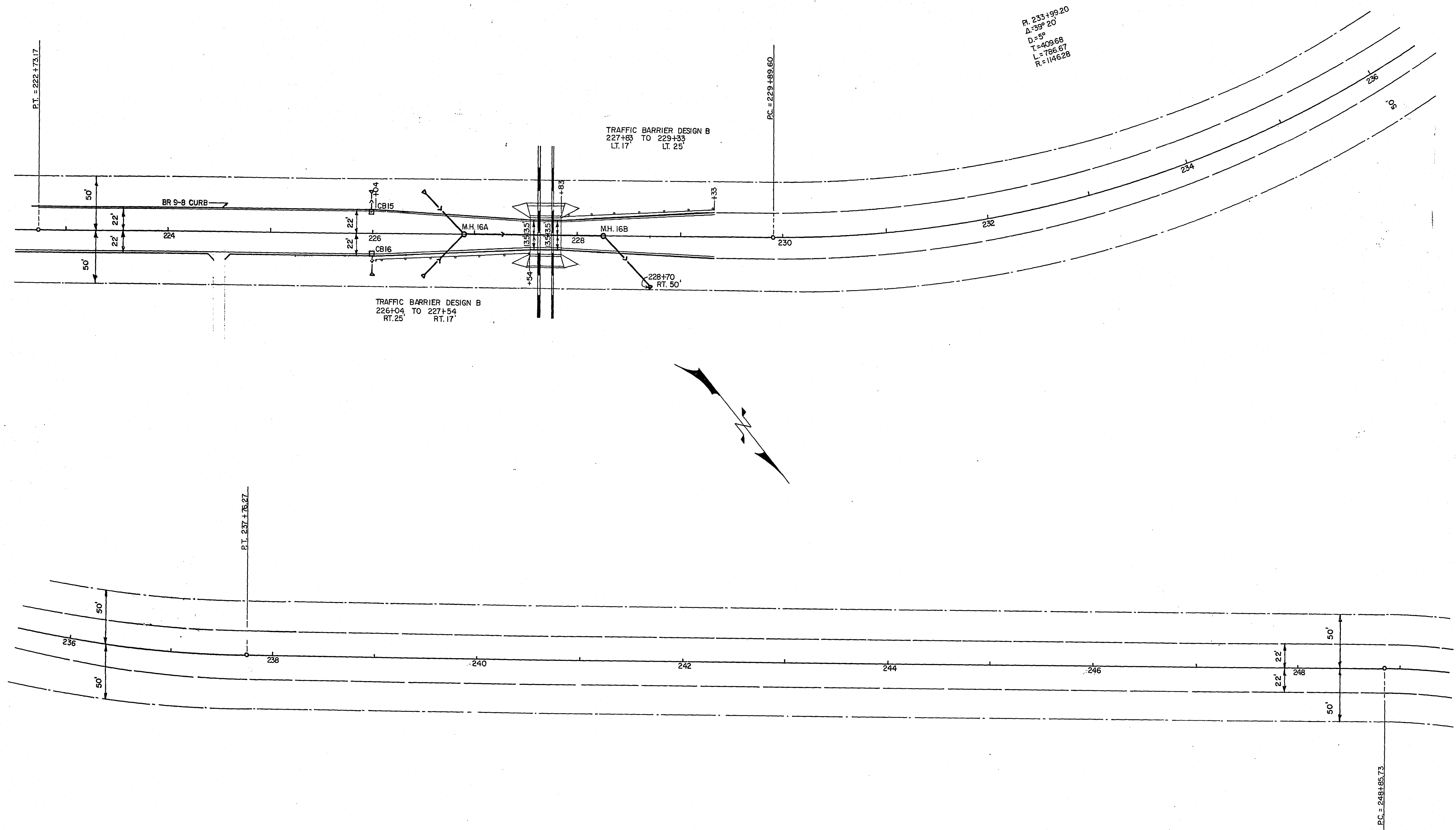
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
[Signature]
Date: 3/9/76 Reg. No. 2226



ASBUILT PLAN
 CONFORMING TO
 CONST. RECORDS
 DONE BY: *Y. Shady*
 DATE: 1-6-76

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
Harold A. Wilke
 Date: 3/9/71 Reg. No. 2245

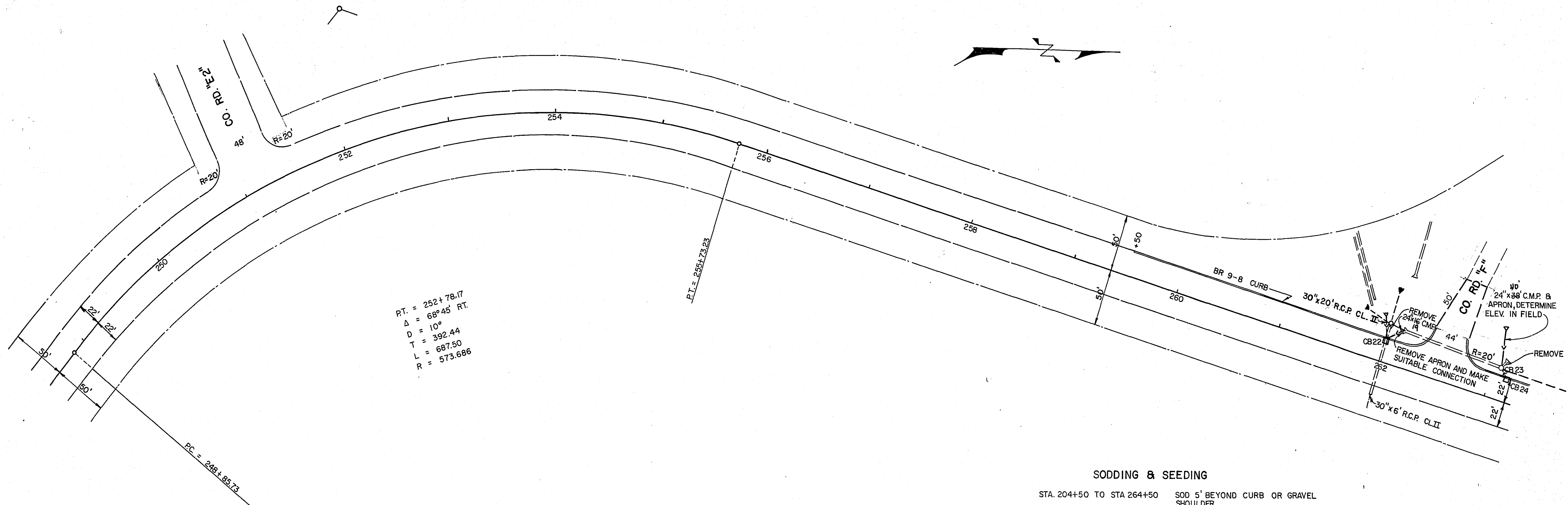
CONSTRUCTION PLAN



ASBUILT PLAN
 CONFORMING TO
 CONST. RECORDS
 DONE BY: *[Signature]*
 DATE: 1-6-76

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.
[Signature]
 Date: 3/9/71 Reg. No. 2215

CONSTRUCTION PLAN

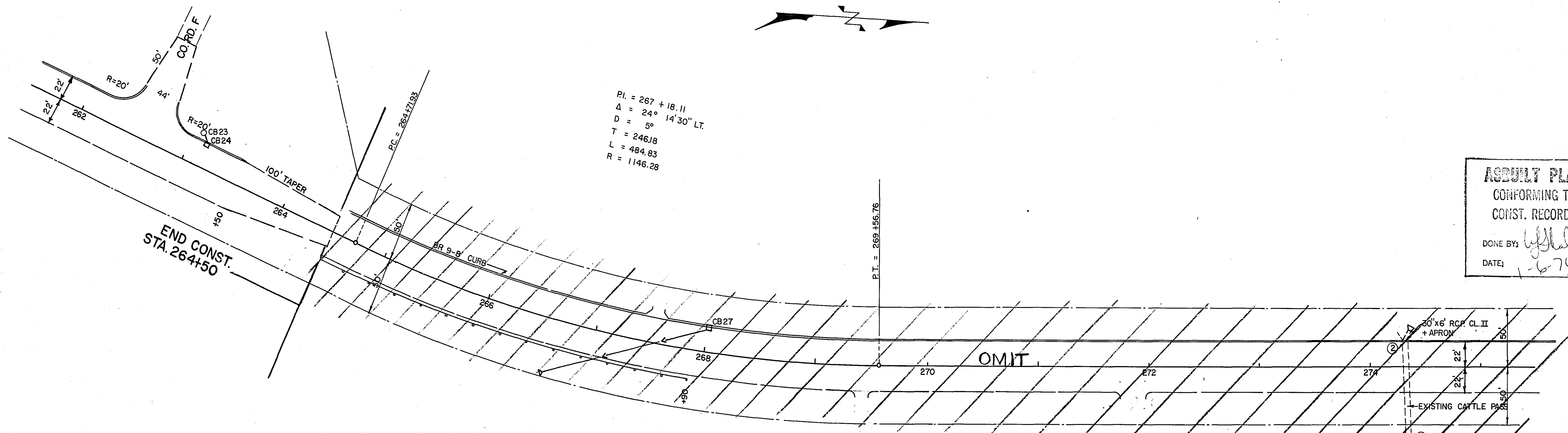


SODDING & SEEDING

STA. 204+50 TO STA. 264+50 SOD 5' BEYOND CURB OR GRAVEL SHOULDER

STA. 204+50 TO STA. 264+50 SEED ALL OTHER AREAS, BEYOND SODDING, DISTURBED BY CONSTRUCTION AS DIRECTED BY ENGINEER.

EXCEPTION SEE PLATE BEAM BARRIER SECTION SHEET NO. 2



ASBUILT PLAN
CONFORMING TO
CONST. RECORDS

DONE BY: *[Signature]*

DATE: 1-6-74

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.

[Signature]

Date: 3/2/71 Reg. No. 2215

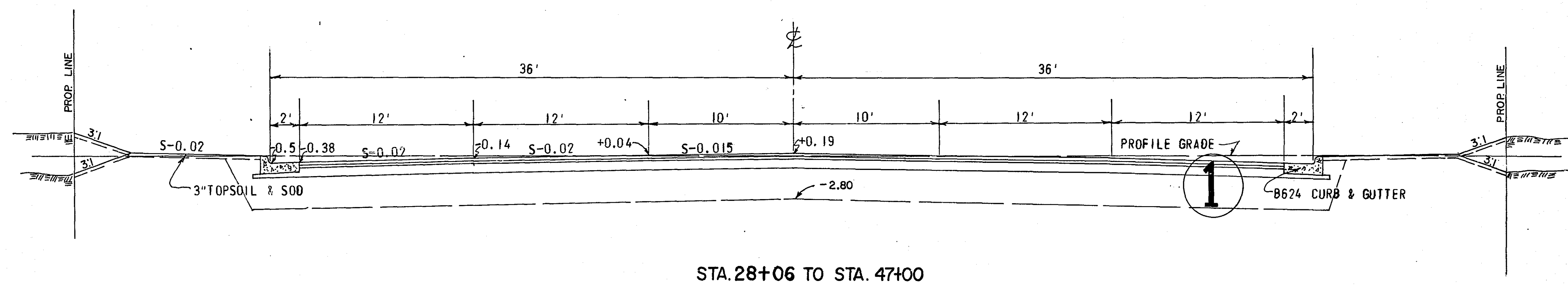
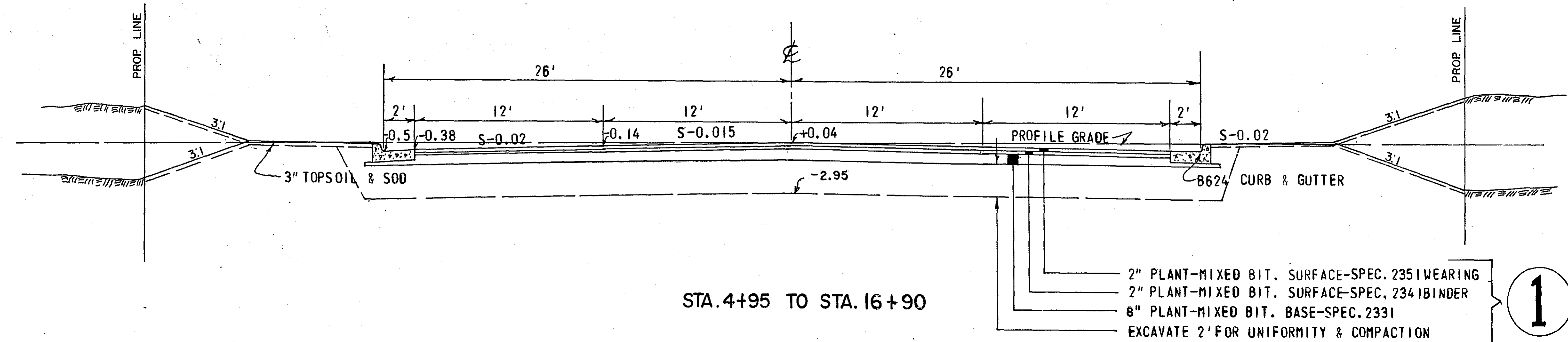
NOTE ② PLACE 30" R.C.P. AT ENDS OF CATTLE PASS, BLOCK ENDS OF CATTLE PASS WITH 6" BLOCK AS DIRECTED BY ENGINEER

CONSTRUCTION PLAN

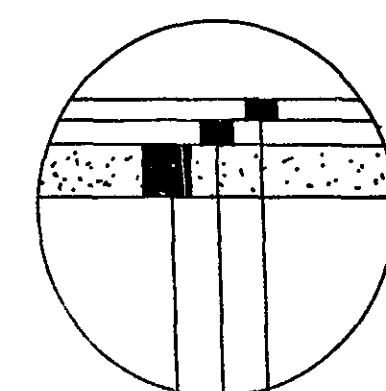
TYPICAL

SECTIONS

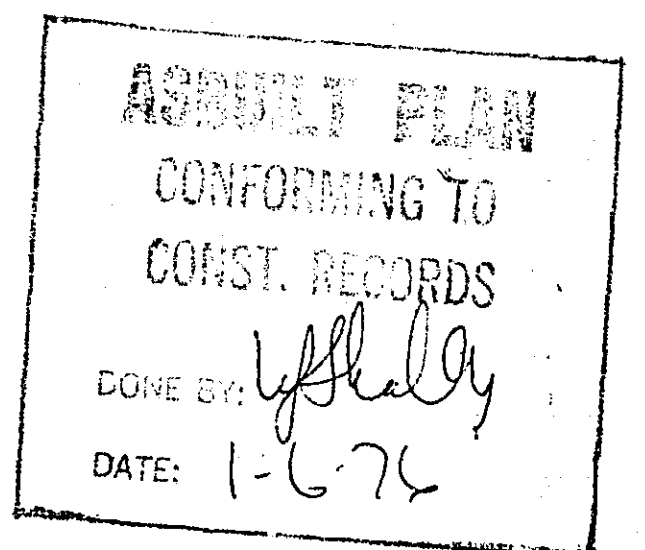
Fed. Proj No.



SIDE STREETS



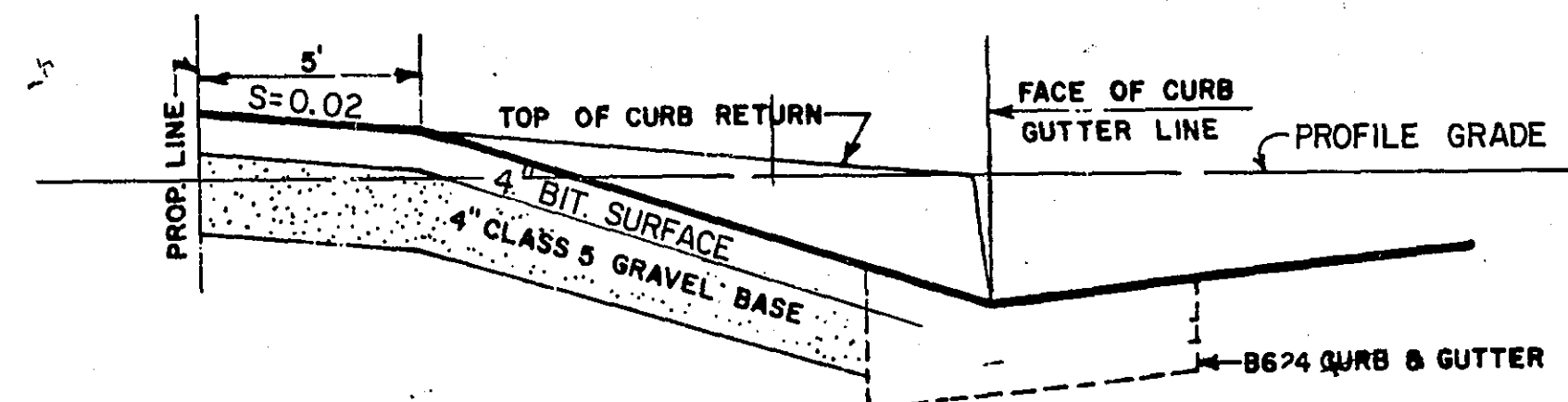
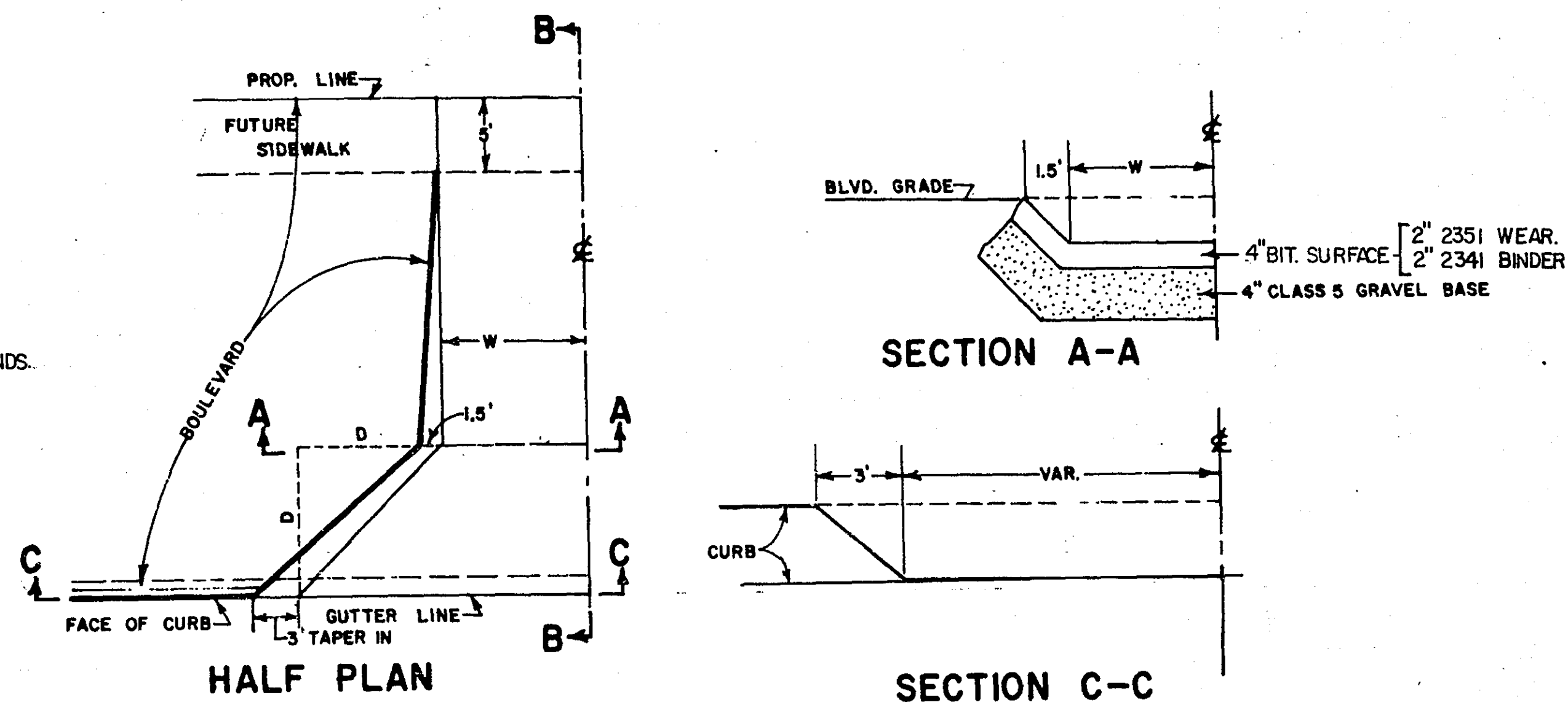
- 2" PLANT-MIXED BIT. SURFACE-SPEC. 2351 WEARING
- 2" PLANT-MIXED BIT. SURFACE-SPEC. 2341 BINDER
- 6" AGGREGATE BASE CLASS 5



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.
 Harold A. Wilke
 Date: 3/9/71 Reg. No. 2215

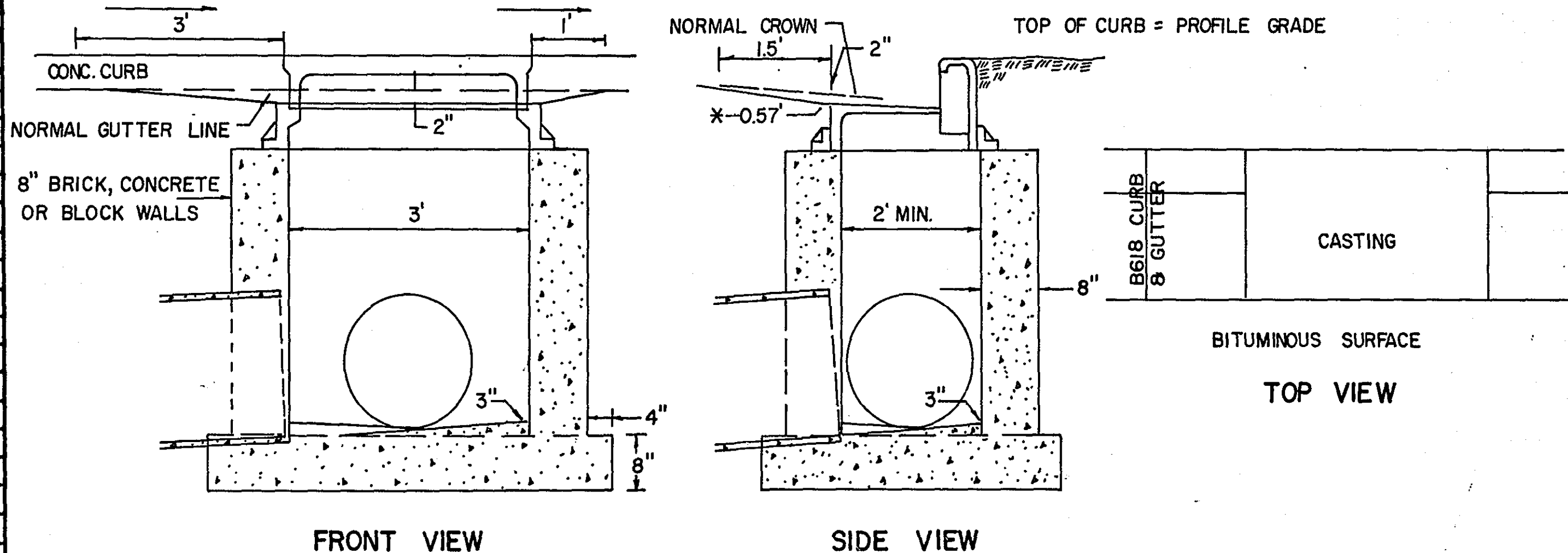
DRAINAGE												CHART														
STATION	LOCATION	NO.	TYPE	DESIGN	CONST. HEIGHT LIN. FT.	F&I CASTING ASSEMBLY	ELEVATION				ADJUST CASTING ASSEMBLY	RECONSTRUCT C.B. OR M.H. LIN. FT.	INSTALL CASTING ASSEMBLY	INSTALL CONCRETE PIPE SEWER LINEAR FEET				MOVING M.H. OR C.B. LIN. FT.	REMOVE PIPE SEWER LIN. FT.	APRON	CLASS	DRAINS TO		REMARK		
							PROFILE	ORIGINAL GRATE OR RING	NEW GRATE OR RING	C.B. OR MH INVERT				12"	15"	18"	21"					18" ARCH	STRUCTURE NO.		INV. EL.	
4+25	LT. 50 ±	1	C.B.	R.C-2	3.16	B	922.0 ±		920.0 ±	917.0												II	NORTH	910.3	TO OUTLET	
5+10	LT. 28'	2	C.B.	L.P-4	3.33	E	923.83		923.83	920.5												II	11	917.0		
5+46	RT. 28'	3	C.B.	L.P-4	3.38	E	925.38		925.38	922.0												II	2	920.5		
9+27	RT. 255'	4	C.B.	RC-2	4.64	B	939.05		938.48	934.0												II	3	922.0		
9+82	LT. 48'	5	C.B.	R.C-2	3.69	B	939.0 ±		938.43	934.90												II	4X	934.0		
9+68	LT. 31'	X	M.H.	A OR F		A																				
10+13	LT. 48'	6	C.B.	R.C-2	4.09	B	939.0 ±		938.43	935.5												II	5	934.9		
10+38	LT. 25.5'	7	C.B.	RC-2	4.13	B	940.59		940.02	936.0												II	6	935.5		
17+51	LT. 256	8	C.B.	L.P-4	4.57	E	935.40		935.40	931.5												II	9	931.0		
17+51	RT. 256	9	C.B.	L.P-4	5.07	E	935.4		935.40	931.0												II	10	930.5		
19+20	RT. 255	10	M.H.	A OR F	6.8	A	937.26		937.3 ±	930.5												I	II	RT.	930.0	
24+27	LT. 35.5	11	M.H.	A OR F	18.00	A	939.3 ±		935.5 ±	917.5												+	II	LT.	913.5 ±	23408 ± LT. 66 ± INCLUDE
25+87	LT. 35.5	13	M.H.	A OR F	7.2	A	936.86		935.0 ±	927.8												II	11	923.8		
28+28	LT. 38	14	C.B.	L.P-4	6.63	E	934.36		934.36	928.70												II	13	927.8		
28+28	RT. 38	15	C.B.	L.P-4	5.53	E	934.36		934.36	929.50												II	14	928.7		
33+00	RT. 35.5	16	C.B.	R.C-2	5.69	B	937.50		936.93	931.40												II	15	929.5		
33+00	LT. 35.5	17	C.B.	R.C-2	4.09	B	937.50		936.93	933.0												II	16	932.3		
36+75	RT. 38	18	M.H.	A OR F	6.47	A	939.37		939.40	932.93												II	16	931.4		
40+37	RT. 38	19	C.B.	L.P-4	5.32	E	939.05		939.05	934.40												II	18	932.93		
40+37	RT. 38	20	C.B.	L.P-4	4.52	E	939.05		939.05	935.20												II	19	934.40		
10+16	RT. 46		ARROW																			I	II	4		
9+58	LT. 56		ARROW																			I		5		

BITUMINOUS ENTRANCE DETAILS



NOTE: D=RESIDENTIAL 5', COMMERCIAL IS MIN. 5' MAX. 15' ALL TO BE VARIFIED BY THE ENGINEER.
W=RESIDENTIAL IS 6' MIN. 11' MAX. COMMERCIAL IS 16' FOR 90°, 13' FOR 60°
THE EXACT LOCATION AND WIDTH OF ENTRANCES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.

CATCH BASIN DESIGN NO. R.C.-2



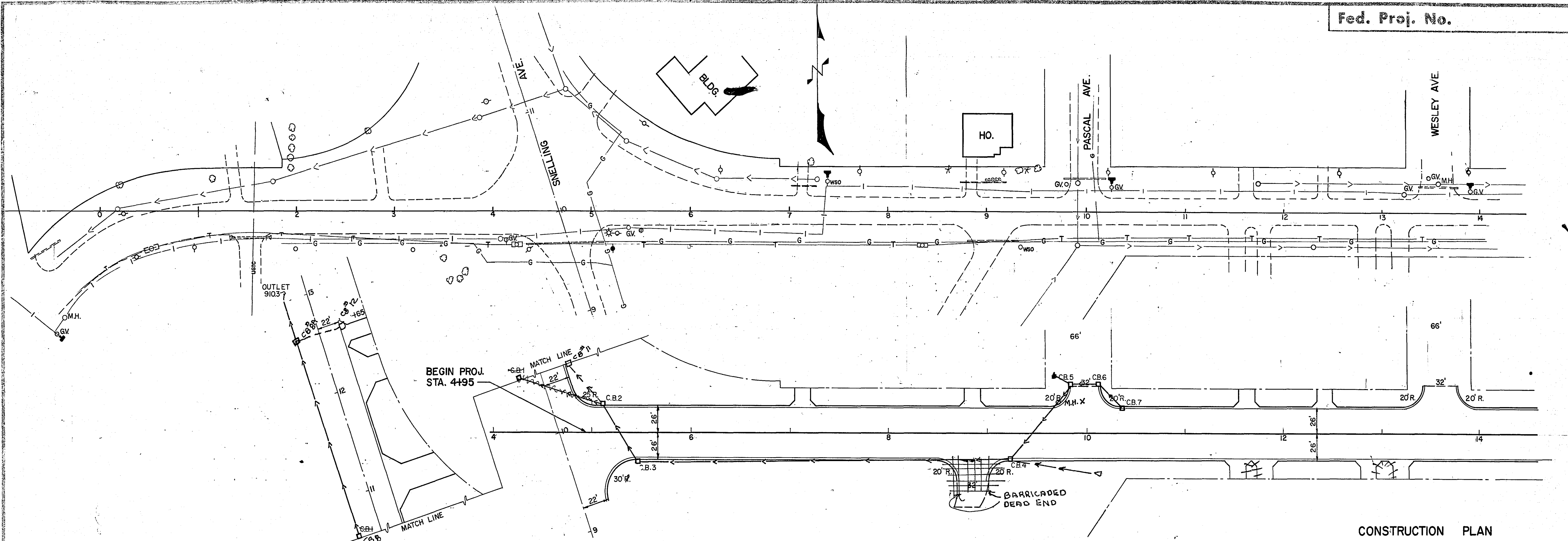
* ELEV. COMPUTED TO THIS POINT, DETERMINE IN FIELD TO FIT EXISTING CONDITIONS.

ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: *[Signature]*
DATE: 1-6-76

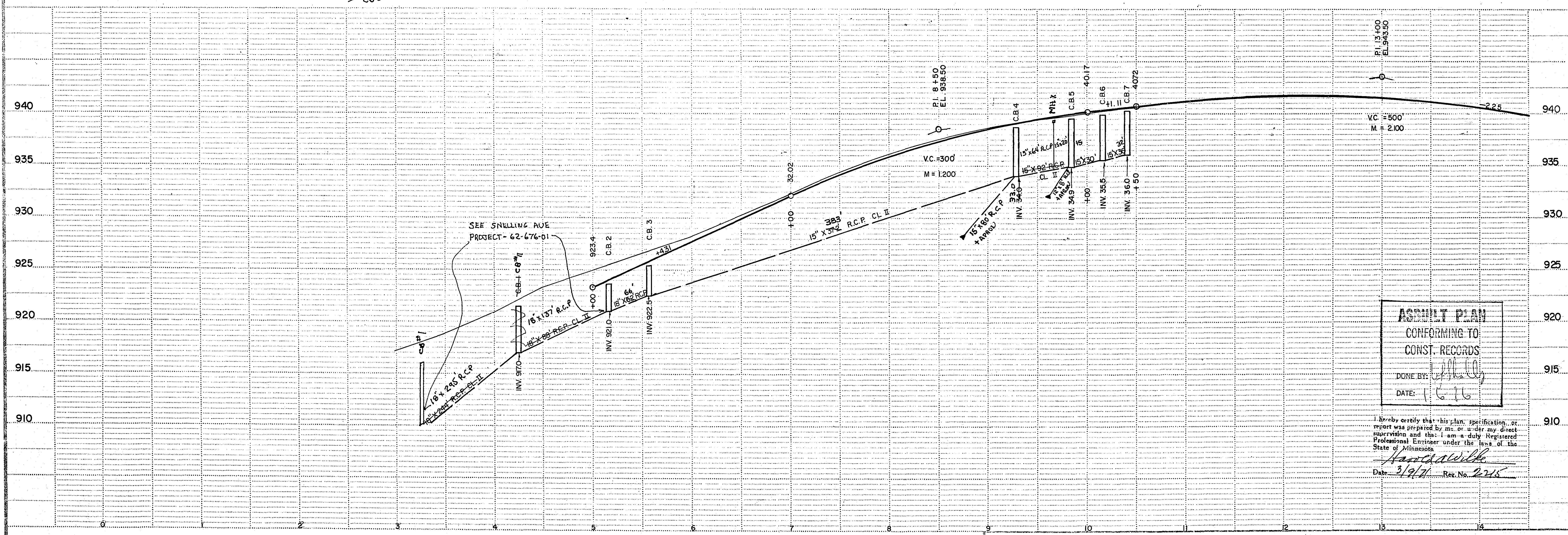
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
[Signature]
Date: 3/9/71 Reg. No. 2215

B = NEENAH INLET FRAME, GRATE, CURB BOX R-3246-B OR EQUAL (INCLUDED WITH STRUCTURE - NOT SEPERATE PAY ITEM)
E = RING CASTING NO. 790-2 & COVER CASTING NO. 712 (INCLUDED WITH STRUCTURE - NOT SEPERATE PAY ITEM)
A = FRAME CASTING NO. 700-7, COVER CASTING NO. 712

MANHOLE & CATCH BASIN DESIGN - RC-2 DETAIL ON SHEET NO. 3
LP-4 STD. PLATE NO. 406 C
A OR F STD. PLATE NO. 4000G OR 4005H

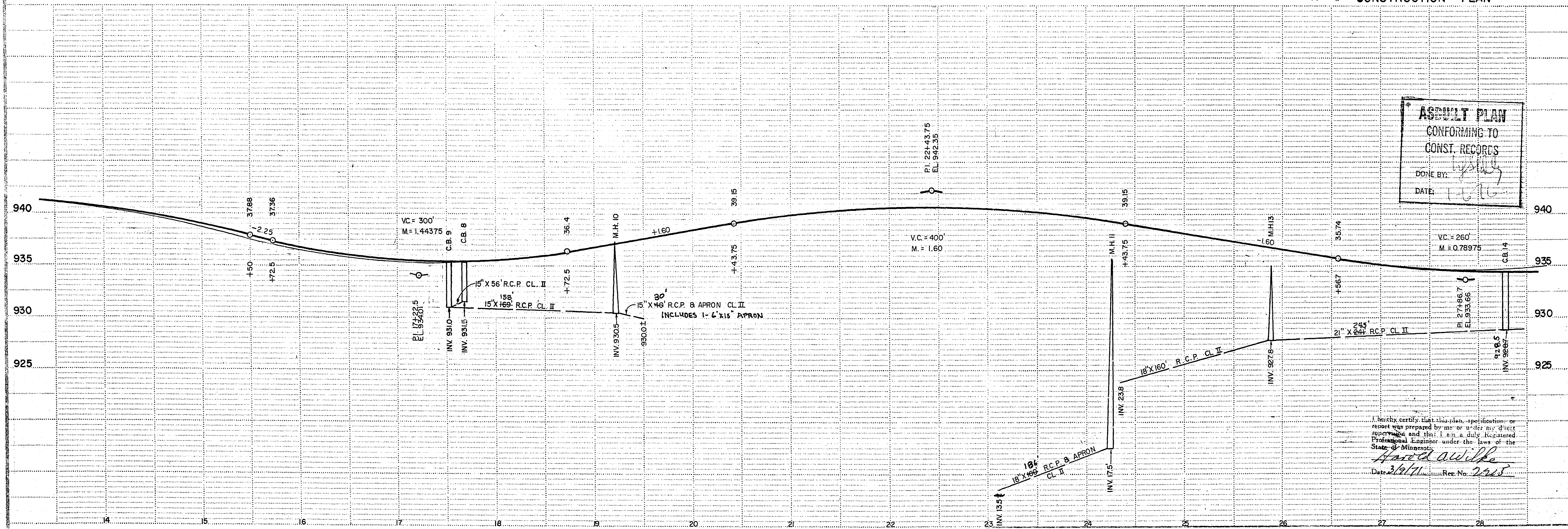
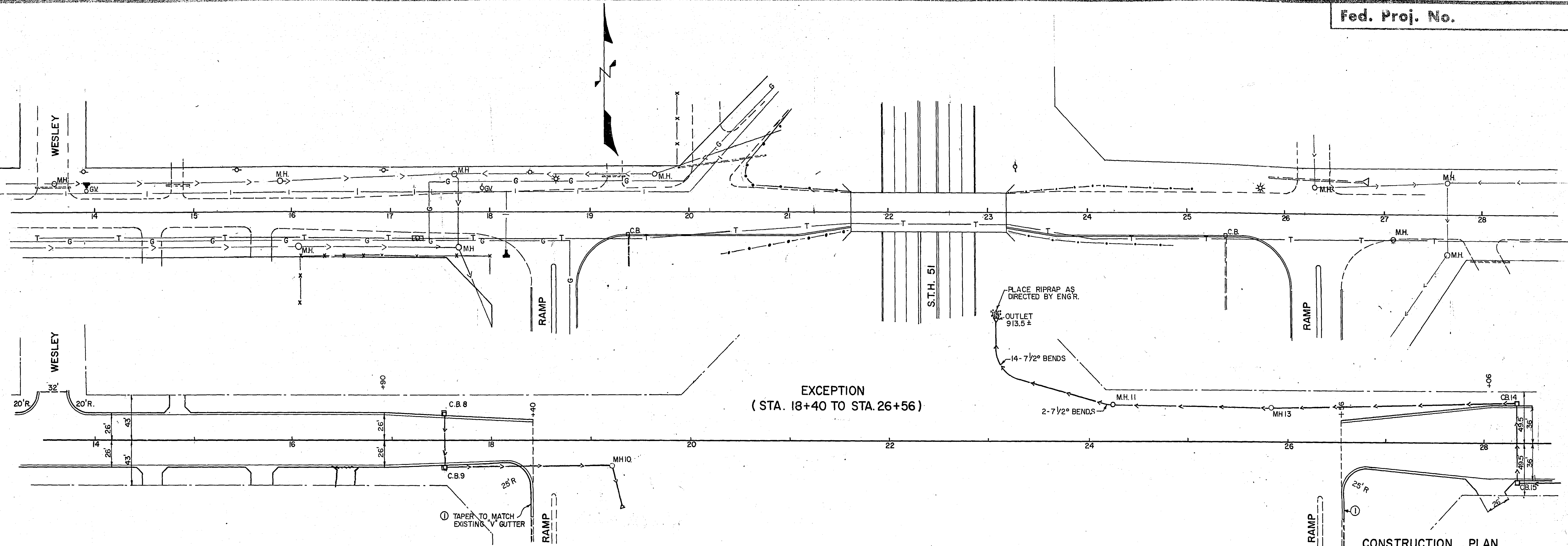


CONSTRUCTION PLAN



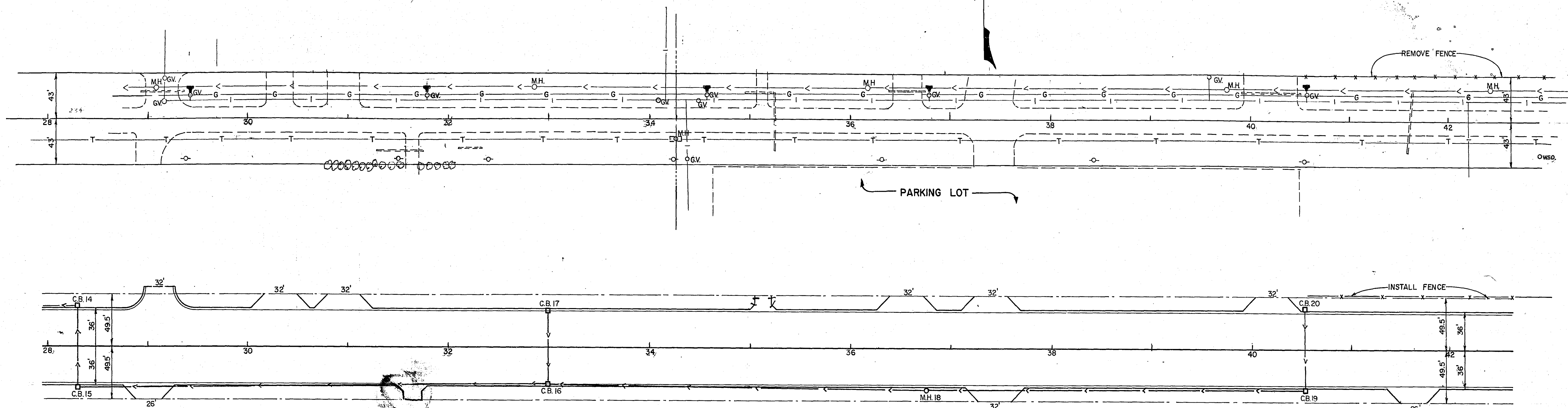
ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: *[Signature]*
DATE: 6-16

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.
[Signature]
Date: 3/27/71 Reg. No. 2215

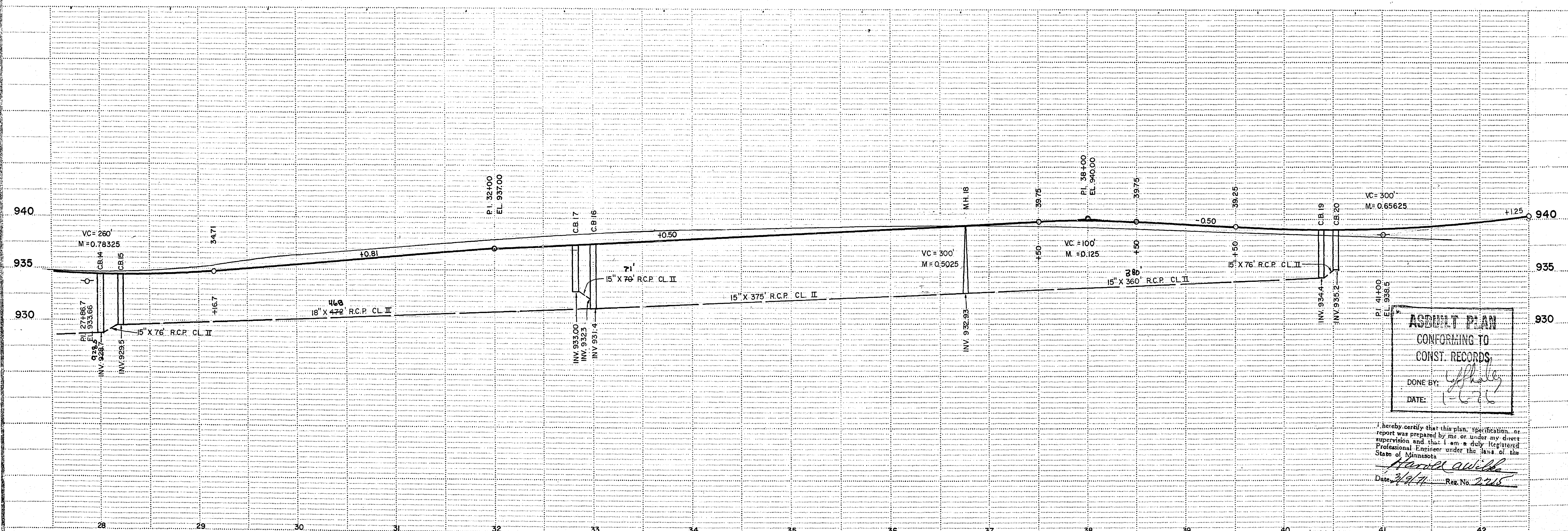


ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: *[Signature]*
DATE: *10/10*

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.
[Signature]
Date: *3/2/71* Reg. No. *73403*

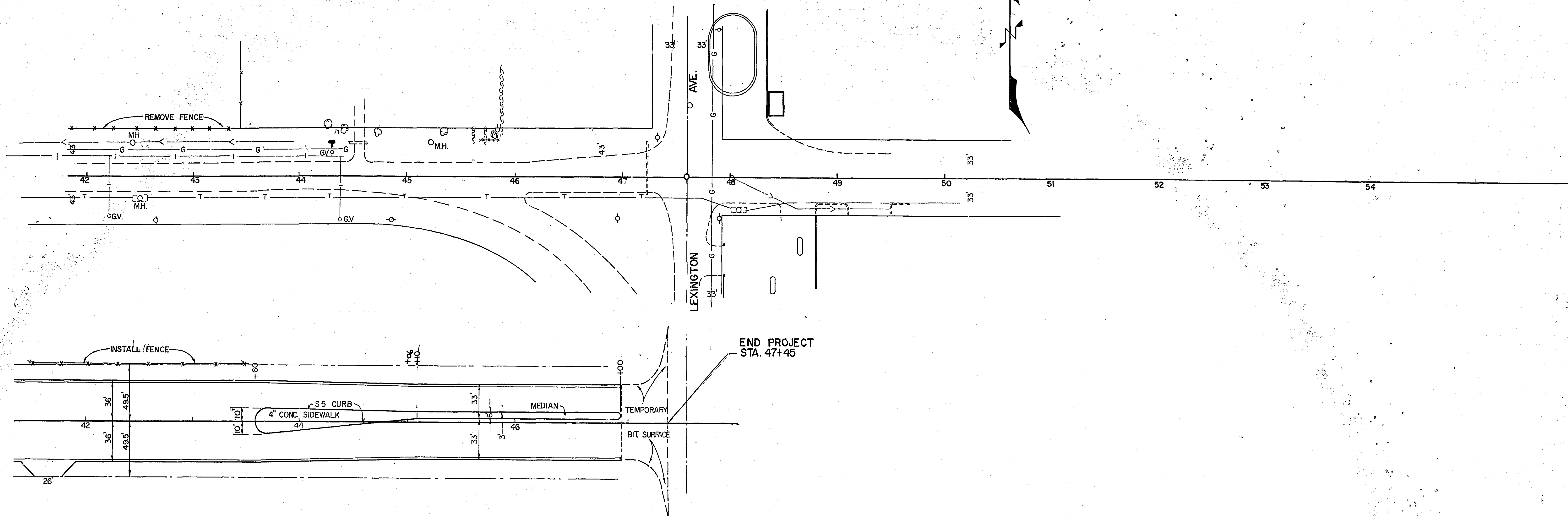


CONSTRUCTION PLAN

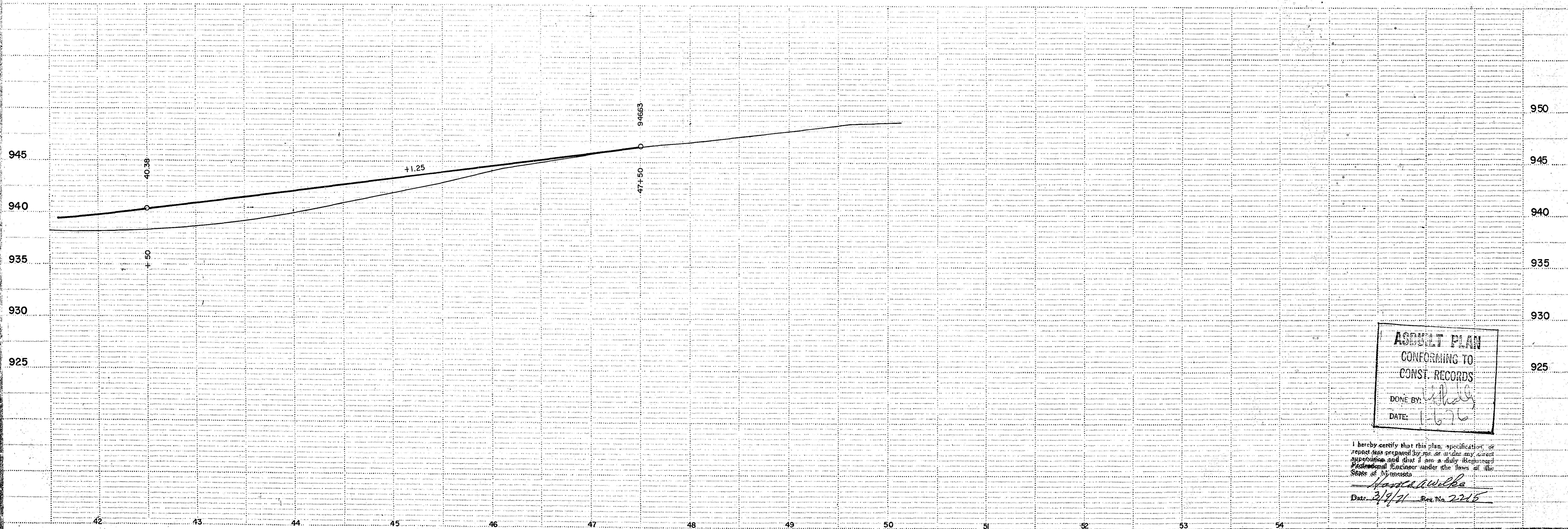


ASBUILT PLAN
CONFORMING TO
CONST. RECORDS
DONE BY: *[Signature]*
DATE: *[Date]*

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.
[Signature]
Date: *7/27/77* Reg. No. *2215*



CONSTRUCTION PLAN



ASBUILT PLAN
CONFORMING TO
CONSTR. RECORDS
DONE BY: [Signature]
DATE: 1/6/76

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.
[Signature]
Date: 3/4/71 Res. No. 2216