

STATE OF MINNESOTA DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLANS FOR GRADING, BITUMINOUS SURFACING,
DRAINAGE & SIGNALIZATION

MUNICIPAL TURNBACK PROJECT NO. S.A.P. 14-116-04MTB

**COON RAPIDS BOULEVARD BY-PASS
COON RAPIDS, ANOKA COUNTY, MINNESOTA
CITY PROJECT NO. 70-5**

SPECIFICATIONS

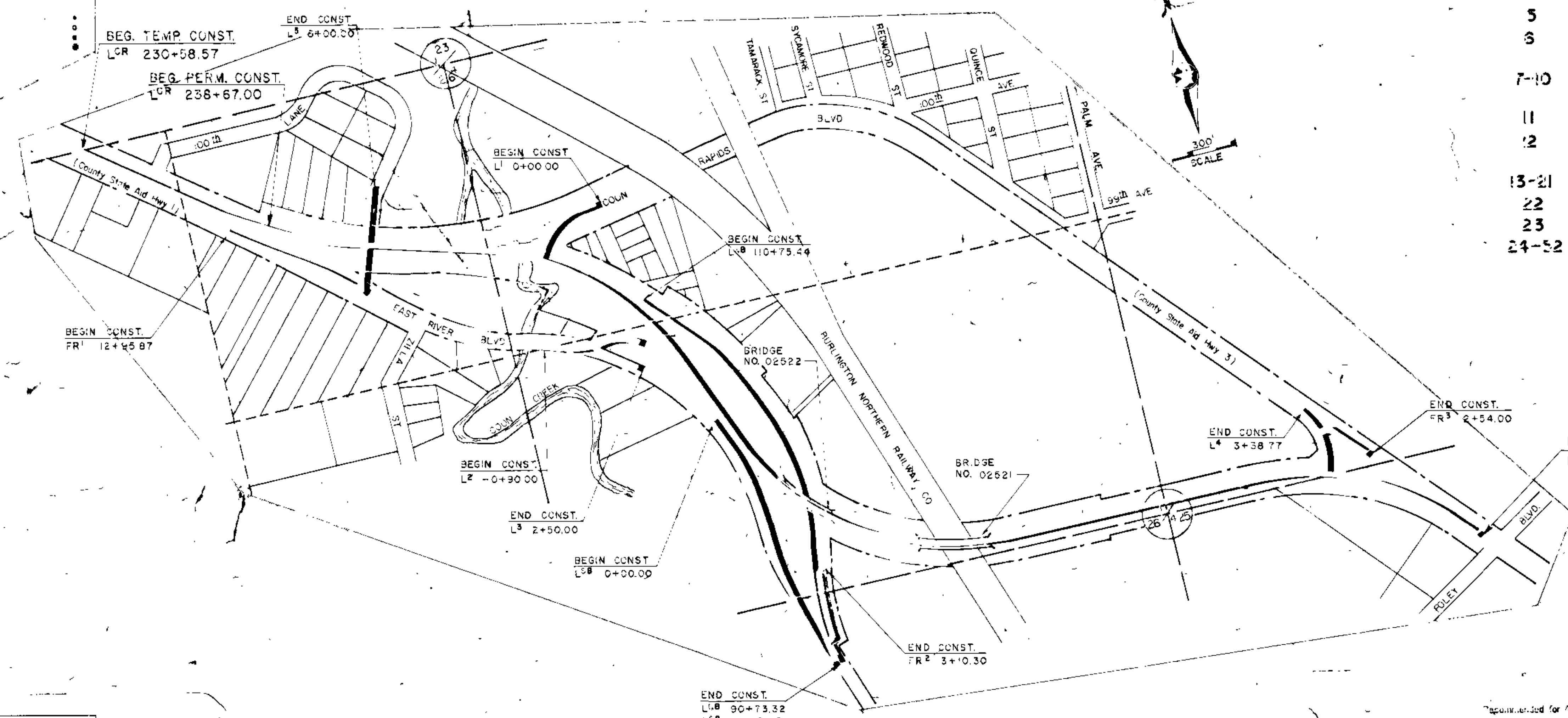
STATE OF MINNESOTA, DEPARTMENT OF HIGHWAYS "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JANUARY 1, 1972 SHALL GOVERN.

INDEX

Sheet No.	Description
1	TITLE SHEET
2	ESTIMATED QUANTITIES & TABULATIONS
3-4	TYPICAL SECTIONS
5	TABULATIONS
6	COON CREEK PIPE DETAILS
7-10	SUPERELEVATION DETAILS
11	ALIGNMENT
12	EXISTING TOPOG AND REMOVALS
13-21	PLAN & PROFILE SHEETS
22	SIGNAL SYSTEM LAYOUT
23	SIGNAL WIRING DIAGRAM
24-52	CROSS SECTIONS

CONVENTIONAL SIGNS

<p>STATE LINE COUNTY LINE TOWNSHIP OR RANGE LINE SECTION LINE QUARTER LINE SECTION CORNER RIGHT OF WAY LINE PROPERTY LINE (EASEMENT) EASEMENT PROPERTY CORPORATE OR CITY LIMITS TOWN HIGHWAY CENTER LINE RETAINING WALL STEAM RAILROAD ELECTRIC RAILROAD RAILROAD RIGHT OF WAY LINE CREEK RAPIDS OR WATERFALL DRY RUN DRAINAGE DITCH HIGH TENSION LINE POWER POLE LINE TELEPHONE OR TELEGRAPH LINE DITCH DRAIN WELLS GUARD RAIL WIRE FENCE RAILROAD OR A FENCE BOARD OR RAILROAD FENCE WIRE RAIL OR FENCE HEDGE WATER PIPE SEWER PIPE DRAIN PIPE RAIL LINE RAILROAD TIE PRESENT ROAD TIE L.W. TIE ACCESS</p>	<p>BRIDGE ARCH ORCHARD ROCK LEDGE SAND EDGE OF CUT TOE OF EMBANKMENT DITCH BASIN MANHOLE FIRE HYDRANT ARC LAMP OTHER LAMP RAILROAD CROSSING SIGN RAILROAD CROSSING BELL ELECTRIC CROSSING SIGN CROSSING GATE CATTLE GUARD OVERHEAD SIGN UNDERPASS SIGN ALIGNMENT MARK & PIER BRIDGE BUILDING LINE 1 FRAME CONCRETE 2 STONE TIE 3 BRICK STUCCO JOIN LINE STONE MONUMENT WOOD STAKE OR NAIL WEATHER CORNER</p>	
--	--	--



REVISIONS		
DATE	SHEET NO.	REVISED BY

FROM JUNCTION WEST RIVER ROAD (C.S.A.H. 11)
TO JUNCTION BOULEVARD (C.S.A.H. 11)
GROSS LENGTH 6891.43 FEET 1.30 MILES
BRIDGES LENGTH 482.13 FEET 0.99 MILES
EXCEPTIONS LENGTH FEET MILES
NET LENGTH 6369.30 FEET 1.21 MILES

DESIGN: 9 TON - A-3 SOIL
ANTICIPATED A.D.T. 12,000-14,000
H.C.A.D.T. OVER 1,100
DESIGN SPEED: 50 MPH - STOPPING SIGN DISTANCE

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Signature
DATE: 12/14/72, SHEET NO. 2075

Recommended for Approval _____ Date _____
CITY ENGINEER
Recommended for Approval _____ Date _____
DIST. STATE AID ENGINEER
Recommended for Approval _____ Date _____
Approval _____ Date _____
STATE AID ENGINEER
Approval _____ Date _____



MISCELLANEOUS REMOVAL

STATION (TO STATION)	LOC	DESCRIPTION	UNIT		ADJAC
			LN FT	CU YD	
LOR 240+20	LT	Catch Basins		2	
240+20	LT	12" Concrete Pipe	38		
240+20 - 241+20	LT	12" Concrete Pipe	130		
244+30	LT	18" C. M. P.	36		
247+10 - 248+10	RL	18" C. M. P. & Surge Basin	130		1
247+30	E	18" Concrete Pipe	44		
247+30	LT	Catch Basin		1	
PR 16+30	RL	24" C. M. P.	36		
17+5	E	30" C. M. P.	126		
3 1-53	E	30" C. M. P.	174		
L1 2+30	E	Permanent Barricades	20		
L2 1+30	E	Permanent Barricades	20		
LNB 14+30	E	Permanent Barricades	20		
LOR 257+00 - 264+00	RL	Plate-Beam Guardrail	730		
274+30	E	Permanent Barricades	50		
297+30	RL	Manhole			1
L4 2+30	E	Permanent Barricades	30		

The following Standard Plates, approved by the Bureau of Public Roads, shall apply on this project.

STANDARD PLATES

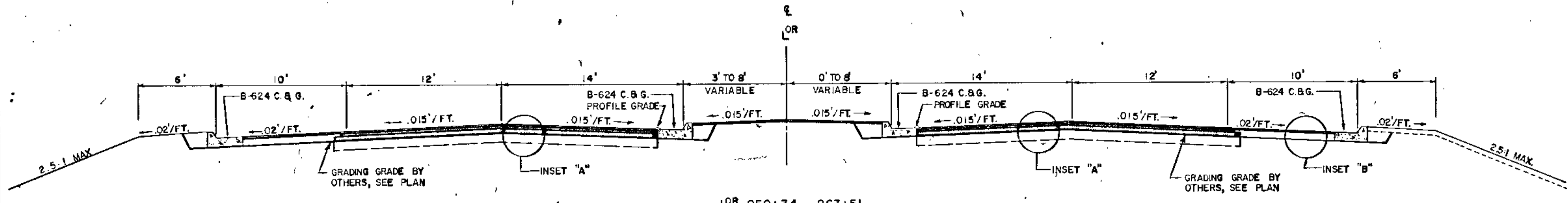
PLATE NO.	DESCRIPTION
1038 C	Bridge Approach Panel (Skew)
1130 I	Expansion Joints
1140 L	Longitudinal Joints
3030 F	Reinforced Concrete Pipe
3014 F	Reinforced Concrete Pipe Arch Detail
3130 F	Concrete Apron for Reinforced Concrete Pipe
3114 D	Sectional Concrete Apron for R. C. P. - Arch
3153 A	Riprap at R. C. P. Outlets
3145 A	Concrete Pipe Joint Ties
4030 G	Manhole or Catch Basin (Type A)
4002 D	Manhole or Catch Basin (Type C)
4025 I	Manhole or Catch Basin (Type F)
4036 H	Manhole or Catch Basin (Types C & H)
4010 D	Conc. Short Cone & Adjusting Ring
4011 C	Precast Concrete Base
4101 B	Ring Casting for Manhole or Catch Basin
4110 D	Cover Casting for Manhole
4131 B	Catch Basin Frame & Grate Casting
4142 D	Belted Grate Castings for Catch Basin
4130 F	Manhole Step Casting
7030 C	Integral Curbs
7020 F	Concrete Curbs
7065 C	Bituminous Curb
7100 D	Concrete Curb and Gutter
7102 D	Concrete Curb and Gutter
7106 D	Entrance Median
7108 B	Exit Nose
7109 A	Median Nose
7110 E	Curb & Gutter Construction at Catch Basin
7111 D	Installation of Catch Basin Castings
8000 D	Standard Barricades
8002 C	Permanent Barricade
8008 D	Contractor's sign
8110 B	Traffic Signal Bracketing
8111 A	Traffic Signal Bracketing
8112 B	Pedestal Foundation
8116 C	Steel Guard Post
8117 D	Precast Concrete Manhole
8118 B	Service Equipment & Pole
8119 B	Ground Mounted Cabinet Foundation
8120 D	Mast Arm Pole Foundation
8122 B	Pedestal & Pedestal Base
8123 A	Pole and Mast Mounts
8124 B	Signal Head Mounts
8130 B	Saw Cut Loop Detectors
8307 J	Structural Plate Beam Guardrail
8317 C	Guardrail Anchorage Assembly for Bridges
8319 C	Twisted End Treatment
9102 C	Seeding at Pipe Culvert Ends

AS BUILT
10-20-73
H H

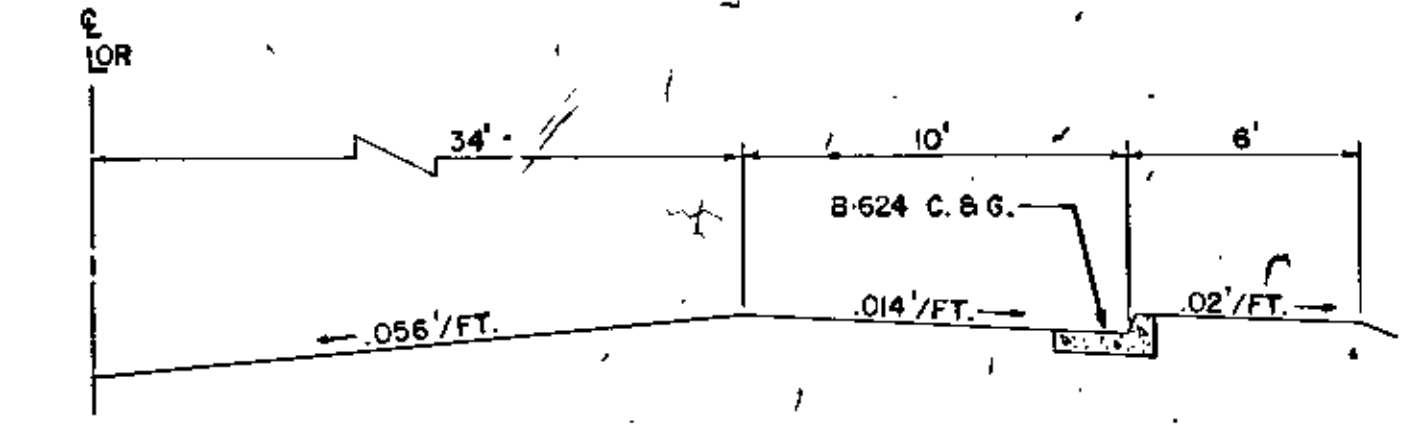
STATEMENT OF ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL ESTIMATED QUANTITIES	TOTAL FINAL QUANTITIES
2021.501	Mobilization	Lump Sum	1	
2031.501	Field Office Type D	Each	1	
2101.501	Clearing	Tree	3	
2101.507	Grubbing	Tree	3	
2104.501	Remove Curb	Lin. Ft.	2210	
2104.505	Remove Pavement	Sq. Yd.	24922	
2104.509	Remove Signal System	Each	1	
2104.523	Salvage Signal System	Each	1	
2104.500	Miscellaneous Removals (See Tabulation, This Sheet)	Lump Sum	1	
2105.501	Common Excavation	Cu. Yd.	1735	
2105.505	Muck Excavation	Cu. Yd.	1830	
2105.507	Subgrade Excavation	Cu. Yd.	13245	
2105.521	Granular Borrow (LV)	Cu. Yd.	27330	
2105.525	Topsoil Borrow (LV)	Cu. Yd.	5020	
2112.501	Subgrade Preparation	Road Station	74	
2207.503	Bituminous Material for Mixture	Cal.	135297	
2207.512	Bituminous Stabilized Subgrade, 5" Thick	Sq. Yd.	24191	
2211.502	Aggregate Base Class 5	Cu. Yd.	829	
2301.551	Bridge Approach Panels, Design A	Each	1	
2301.551	Bridge Approach Panels, Design B	Each	1	
2301.551	Bridge Approach Panels, Design C	Each	6	
2331.504	Bituminous Material for Mixture	Ton	497	
2331.514	Base Course Mixture	Ton	12417	
2341.504	Bituminous Material for Mixture	Ton	426	
2341.508	Wearing Course Mixture	Ton	6591	
2341.508	Wearing Course Mixture (for Medians)	Ton	435	
2341.510	Binder Course Mixture	Ton	5540	
2358.501	Bituminous Material for Prime Coat	Cal	3223	
2357.502	Bituminous Material for Tack Coat	Cal	5042	
2501.515	24" Reinforced Concrete Pipe Apron	Apron	1	
2501.515	30" Reinforced Concrete Pipe Apron	Apron	1	
2501.521	169" Span Concrete Pipe Arch Culvert Class III A	Lin. Ft.	230	
2501.525	169" Span Concrete Pipe Arch Aprons	Apron	4	
2503.511	12" Reinforced Concrete Sewer Class II	Lin. Ft.	457	
2503.511	15" Reinforced Concrete Sewer Class II	Lin. Ft.	215	
2503.511	18" Reinforced Concrete Sewer Class II	Lin. Ft.	38	
2503.511	24" Reinforced Concrete Sewer Class II	Lin. Ft.	418	
2503.511	27" Reinforced Concrete Sewer Class II	Lin. Ft.	24	
2503.511	30" Reinforced Concrete Sewer Class II	Lin. Ft.	824	
2506.506	Construct Catch Basins, Design A or F	Lin. Ft.	50.0	
2506.506	Construct Catch Basins, Design C or G	Lin. Ft.	4.0	
2506.506	Construct Catch Basins, Design H	Lin. Ft.	3.2	
2506.511	Reconstruct Manhole (Sanitary)	Lin. Ft.	5.0	
2506.516	Casting Assemblies	Each	19	
2511.501	Random Riprap Class A	Cu. Yd.	6.6	
2511.504	Filter Blanket Type 1	Cu. Yd.	3.3	
2511.503	Grouted Riprap	Cu. Yd.	130	
2511.504	Filter Blanket, Type 2	Cu. Yd.	50	
2521.501	6" Concrete Walk	Sq. Ft.	530	
2531.501	Concrete Curb and Gutter Design B 624	Lin. Ft.	20549	
2531.501	Concrete Curb and Gutter Design B 618	Lin. Ft.	8247	
2531.501	Concrete Curb and Gutter Design D	Lin. Ft.	2308	
2531.502	Concrete Curb, Design B 6	Lin. Ft.	35	
2531.503	Concrete Median	Sq. Yd.	130	
2531.507	7" Concrete Driveway Pavement	Sq. Yd.	244	
2535.501	Bituminous Curb	Lin. Ft.	2426	
2534.501	Traffic Barrier Design B 8307	Lin. Ft.	3150	
2534.521	Anchorage Assemblies	Assembly	20	
2534.505	Permanent Barricades	Lin. Ft.	20	
2575.501	Roadside Seeding	Acre	8	
2575.502	Seed Mixture 5	Pound	130	
2575.505	Seeding	Sq. Yd.	2653	
2575.511	Mulch Material Type 1 3)	Ton	17	
2575.512	Mulch Material Type 2 3)	Cal	7405	
2575.531	Commercial Fertilizer, Analysis 12-18-18	Ton	3.4	
W-1	Relocate Watermain	Lin. Ft.	600	
2565.501	Furnish and Install Signal System	System	1	
2565.510	Revise Signal System	System	1	
S-1	F & I Signs	Lump Sum	1	
2569.621	Delineation Treatment	Sq. Yd.	1300	

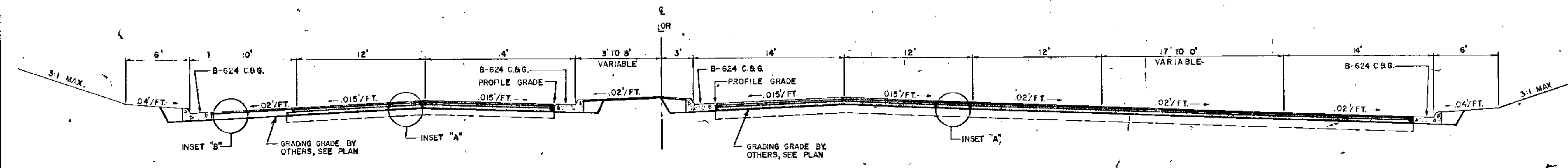
LOR 263+51 - 299+15
COON RAPIDS BLVD. BY-PASS



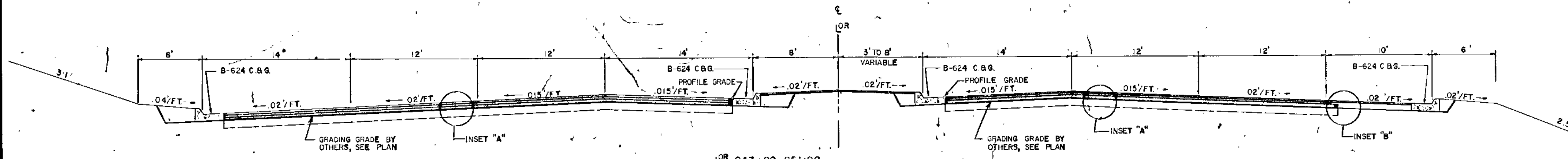
SHOULDER SECTION FOR FULL SUPER



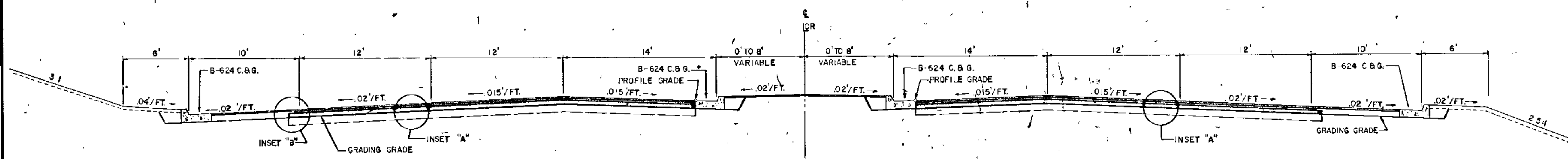
LOR 258+34 - 263+51
COON RAPIDS BLVD. BY-PASS



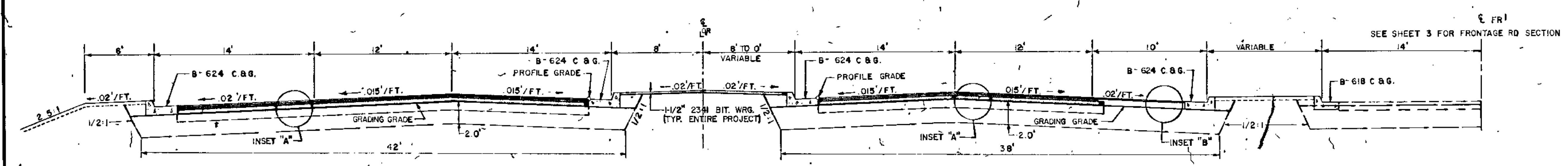
LOR 251+98 - 258+34
COON RAPIDS BLVD. BY-PASS



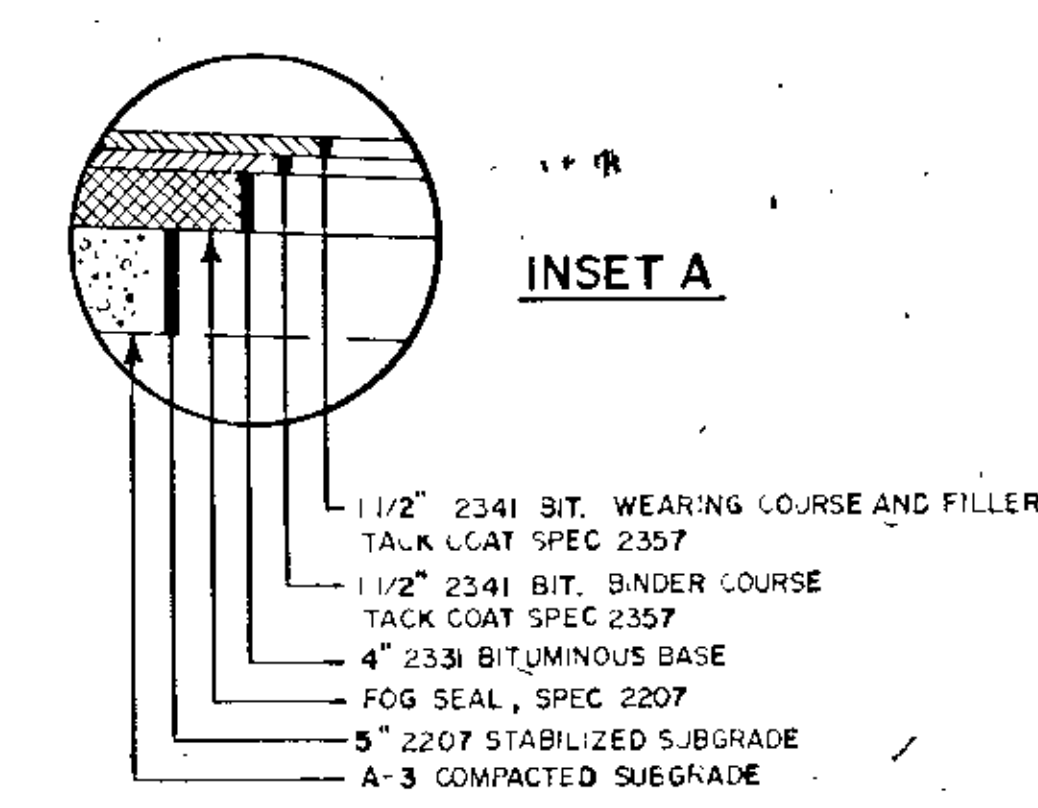
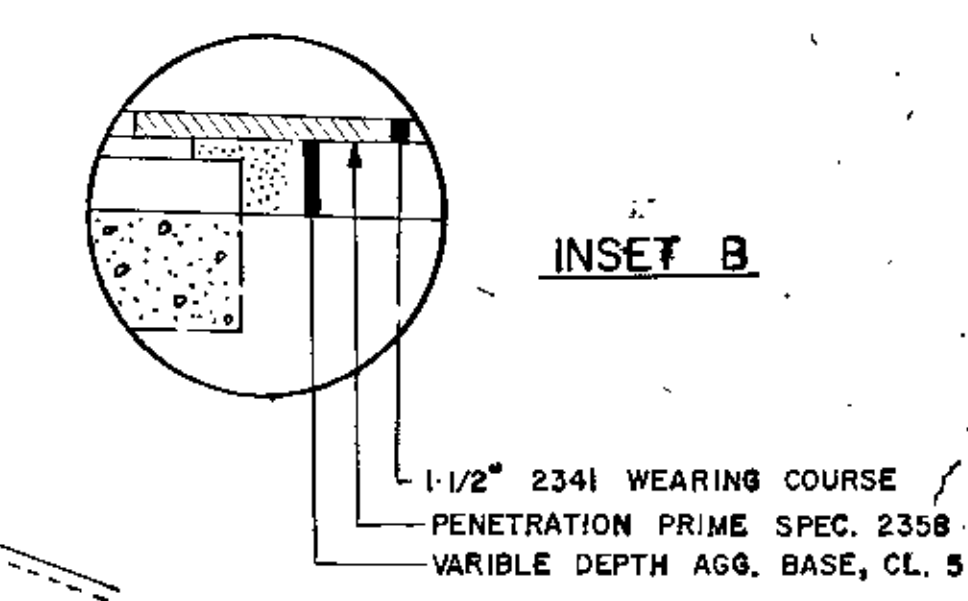
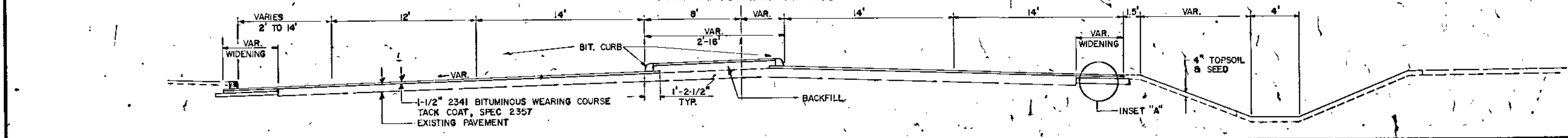
LOR 243+82 - 251+98
COON RAPIDS BLVD. BY-PASS



LOR 238+67 - 243+82
COON RAPIDS BLVD. BY-PASS

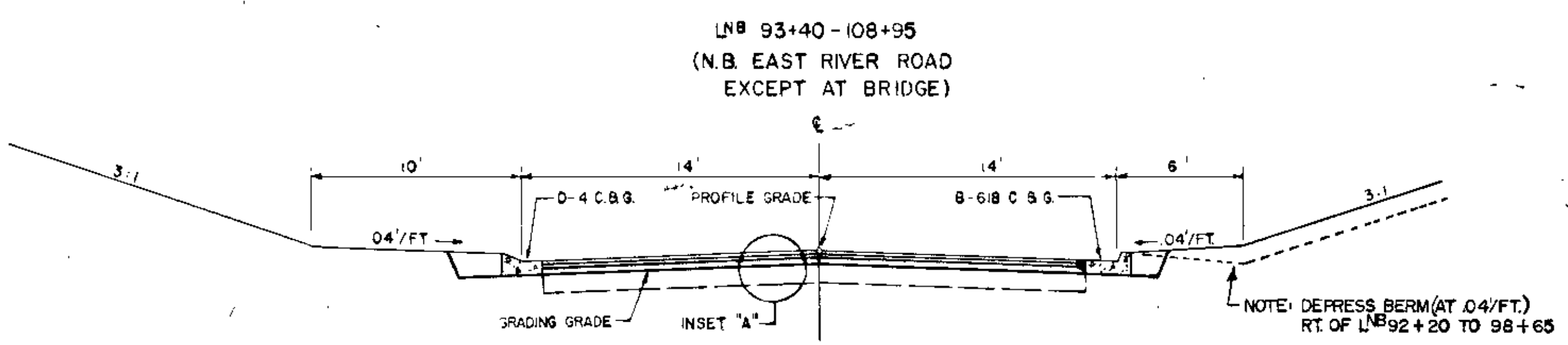
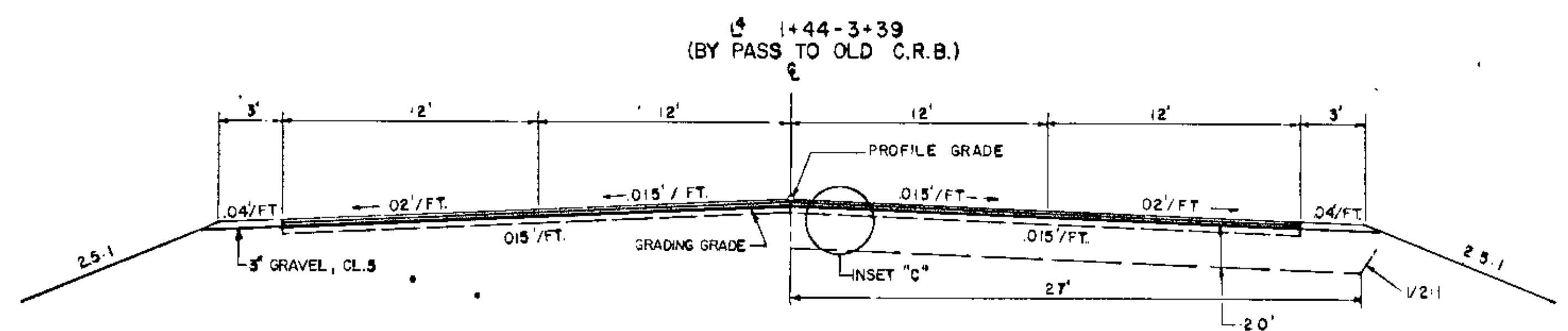
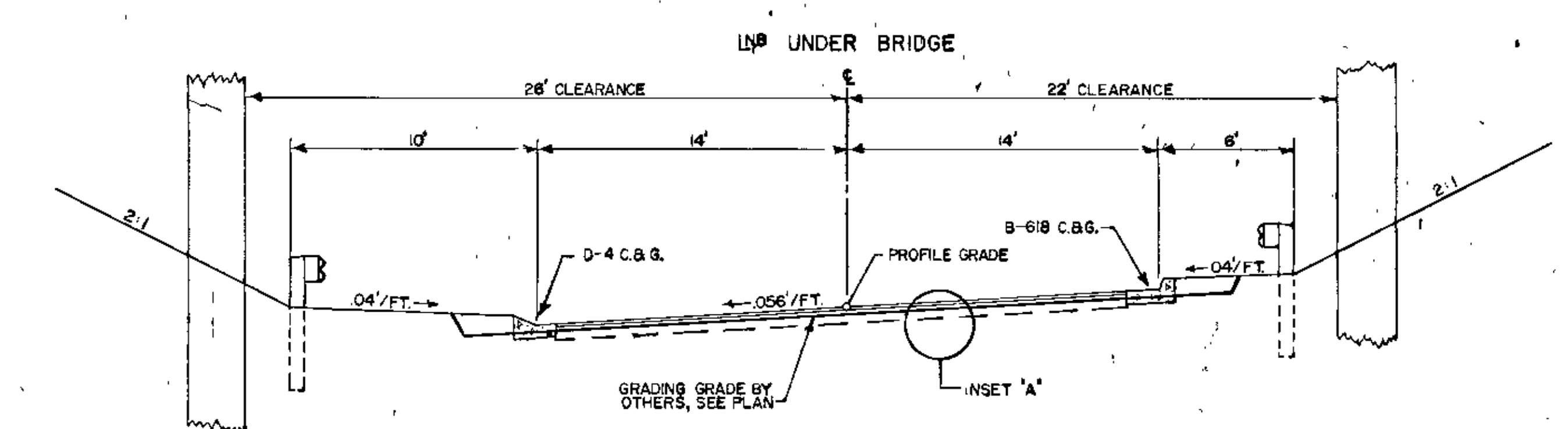
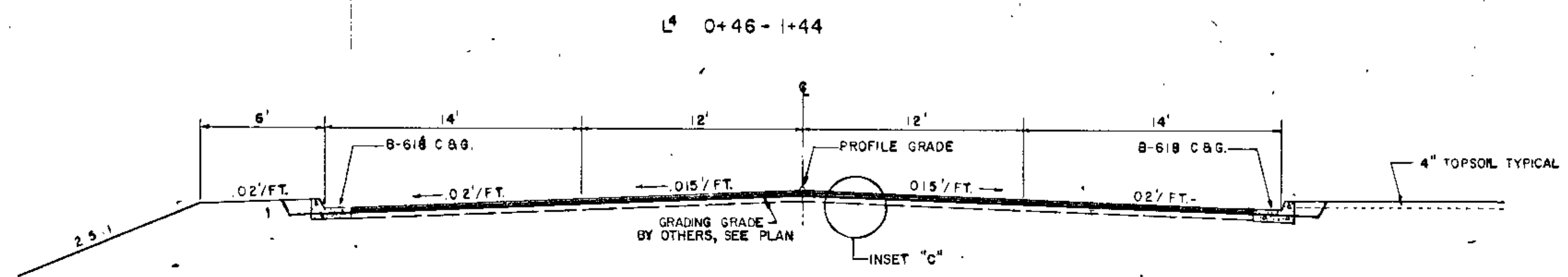


TEMPORARY PAVEMENT TO LOR 238+67
COON RAPIDS BLVD. BY-PASS

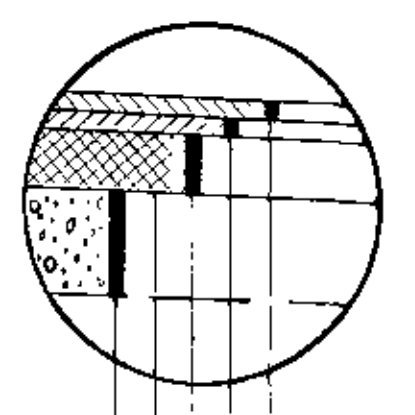
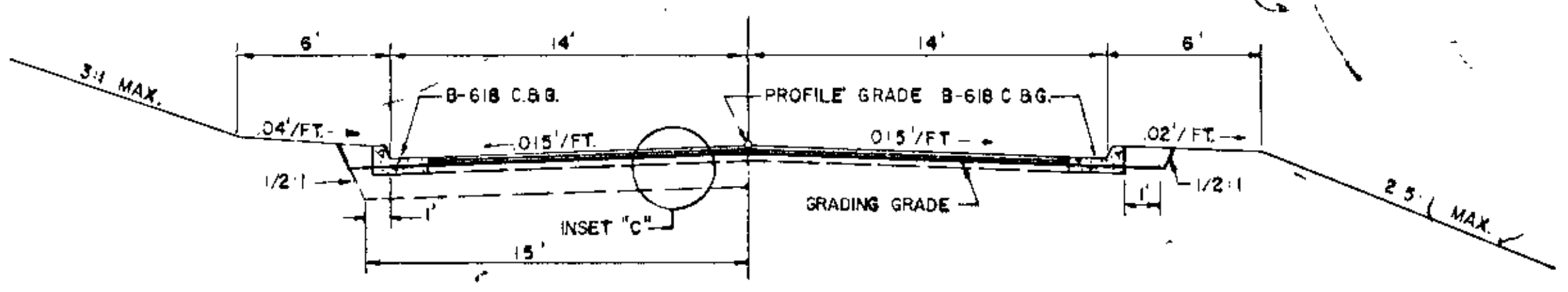


MAINLINE
TYPICAL SECTIONS

AS BUILT
10-20-73
H.H.

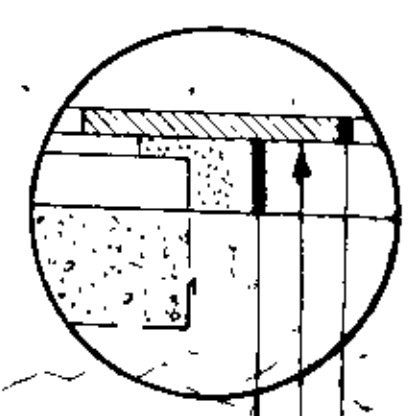
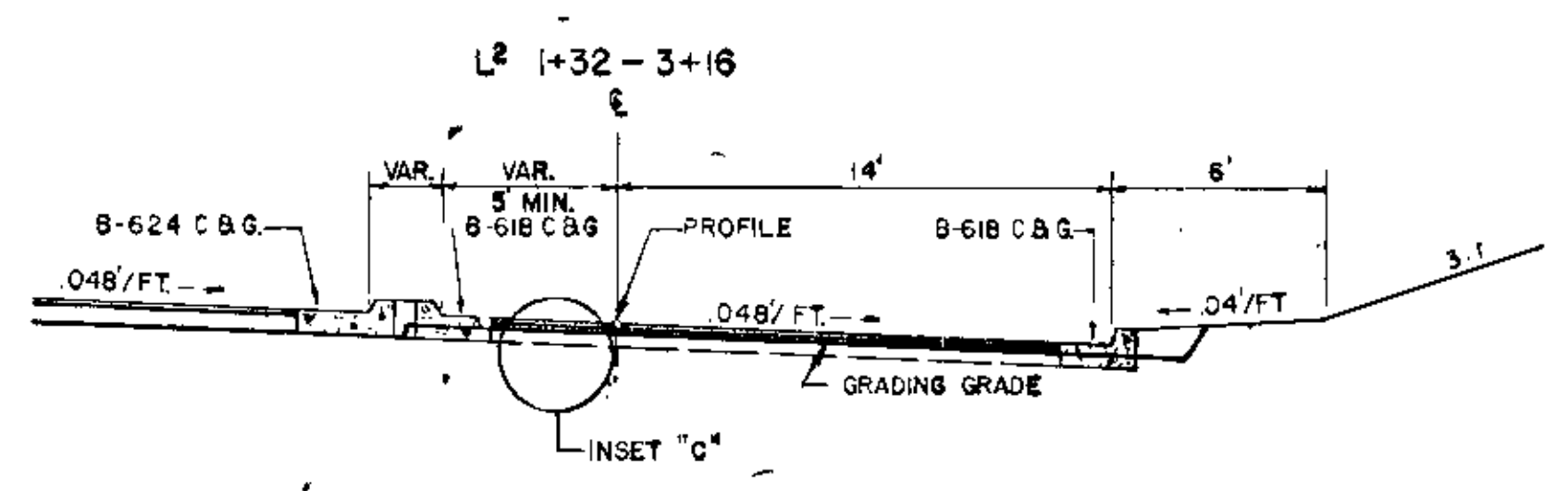
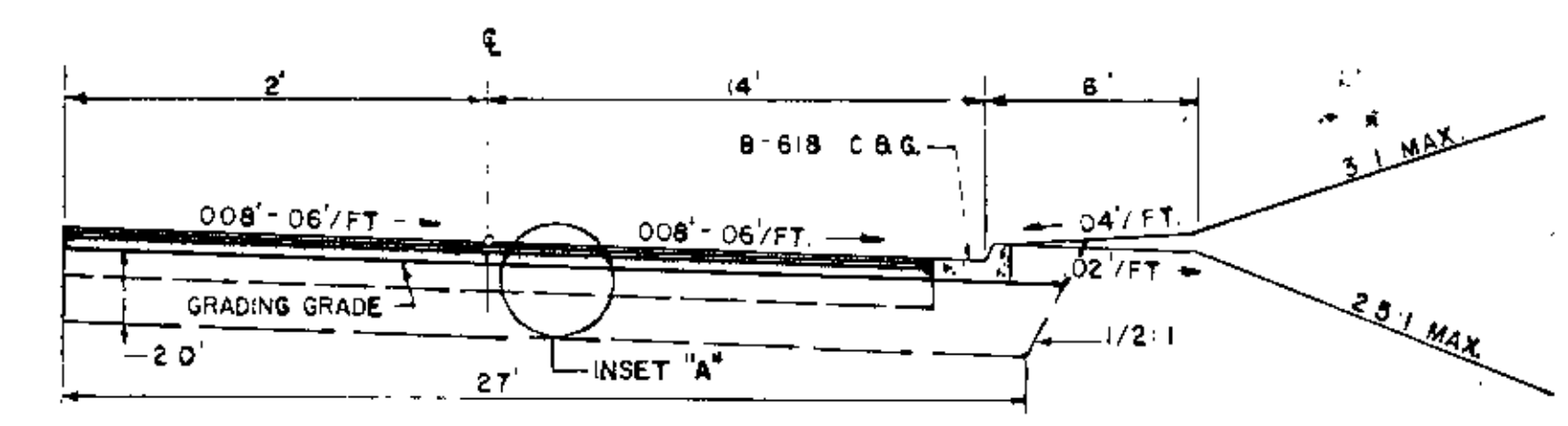


- L1 0+00-2+60 (C.R.B. TO BY PASS)
- L2 0+00-1+32 (E.R.R. TO BY PASS)
- L3 0+12-2+49 (APARTMENT ENT)
- L5 2+58-5+00 (BY PASS TO VILLAGE HALL)
- FR2 0+24-1+84 (C.R.B. TO L4)
- FR1 12+96-20+01 (SHOPPING CENTER)



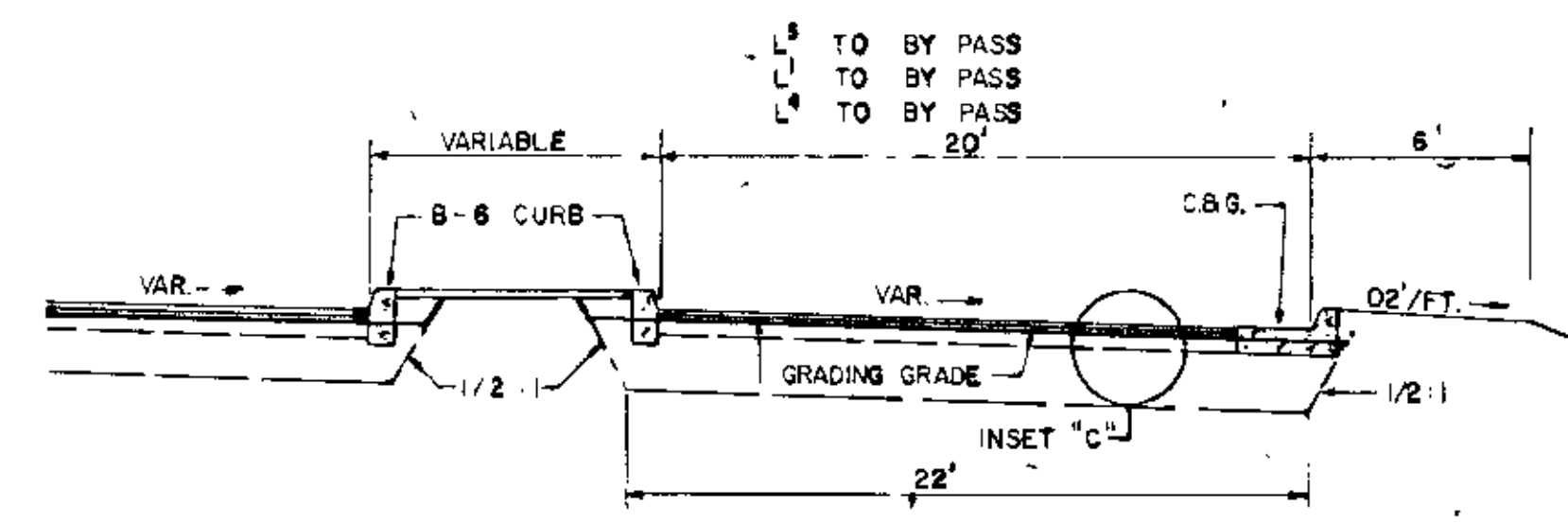
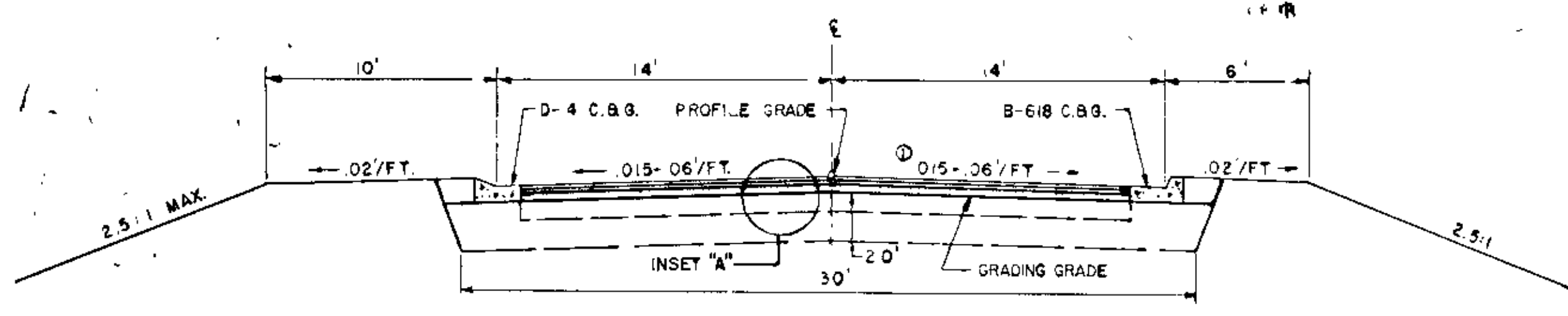
- 1 1/2" 2341 BIT. WEARING COURSE AND FILLER
- TACK COAT, SPEC. 2357
- 1 1/2" 2341 BIT. BINDER COURSE
- TACK COAT, SPEC. 2357
- 4" 2331 BITUMINOUS BASE
- FOG SEAL, SPEC. 2207
- 5" 2207 STABILIZED SUBGRADE, UNLESS NOTED

- LN8 90+73 - 93+40
- LSB 0+00 - 1+50
- LSB 3+80 - 12+50



- 1/2" 2341 WEARING COURSE
- PENETRATION PRIME SPEC 2358
- VARIABLE DEPTH AGG. BASE, CL. 5

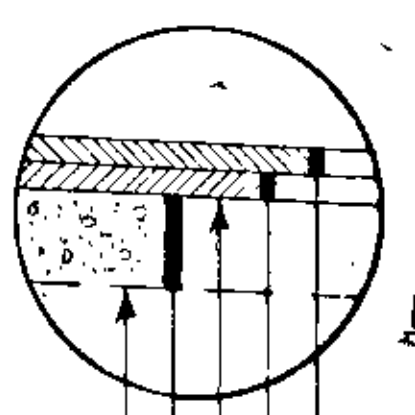
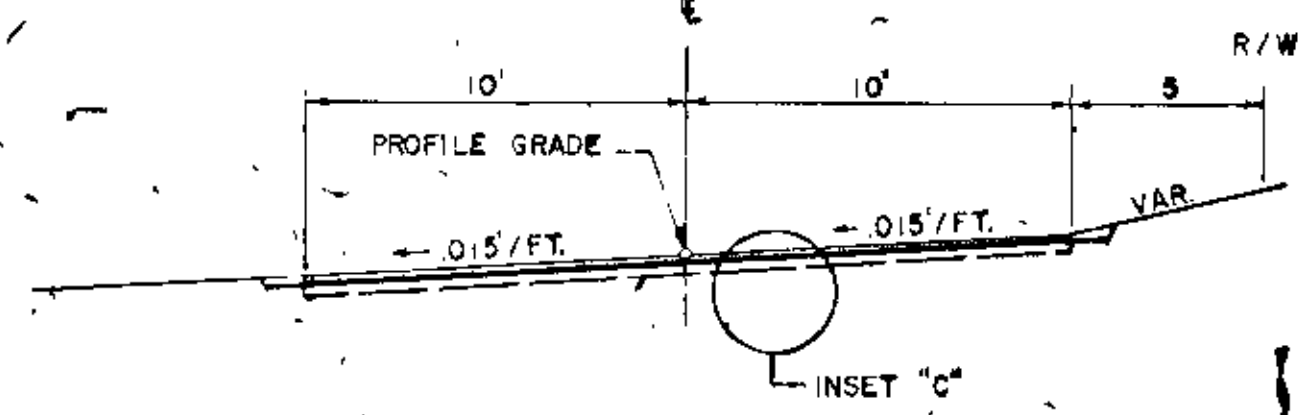
- LSB 1+50-9+80
- (SB EAST RIVER ROAD)



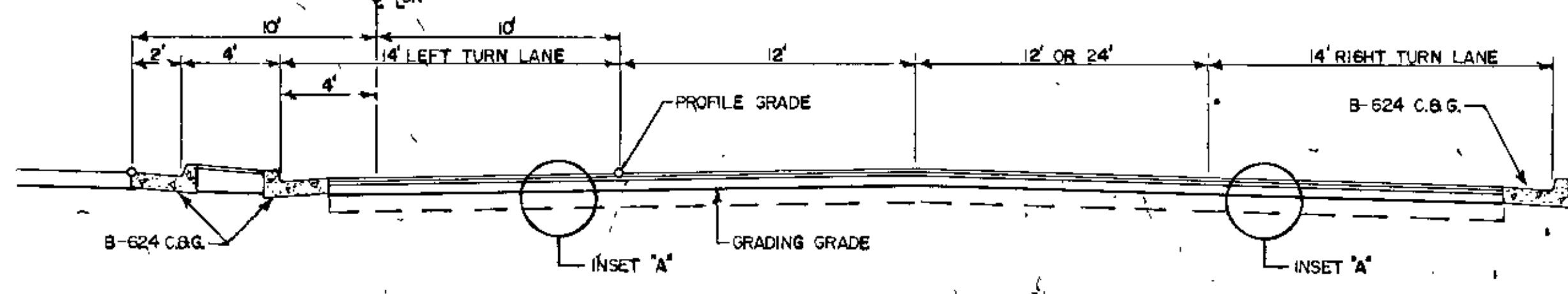
- LEFT TURN LANE
- E.B.L. 240+47 - 243+37 + TAPER
 - W.B.L. 244+27 - 247+77 + TAPER
 - E.B.L. 247+77 - 251+63 + TAPER
 - E.B.L. 288+43 - 291+43 + TAPER
 - E.B.L. 296+63 - 299+00 + TAPER

- RIGHT TURN LANE
- E.B.L. 240+47 - 243+10 + TAPER
 - W.B.L. 240+76 - 242+56 (TAPER ONLY)
 - W.B.L. 244+47 - 247+17 + TAPER
 - W.B.L. 252+40 - 256+77 (FROM LN8)
 - W.B.L. 292+25 - 295+08 + TAPER
 - E.B.L. 296+63 - 299+00 + TAPER

- FR2 0+14-3+10
- FRONTAGE ROAD 45' RT. LN8 92+00-95+00



- 1 1/2" 2341 BIT. WEARING COURSE + FILLER
- TACK COAT, SPEC. 2357
- 1 1/2" 2341 BIT. BINDER COURSE
- FOG SEAL, SPEC. 2207
- 5" 2207 STABILIZED SUBGRADE
- A-3 COMPACTED SUBGRADE



AS BUILT
10-20-73
H.H.

TYPICAL SECTIONS

PUBLIC UTILITIES						
LINE	SHEET NO.	LOCATION (Approximate)	ITEM IN PLACE	REMARKS	OWNERSHIP	
1		Lo ^r 230+60 - 243+90	LT. Tel. Cable - Buried	Leave as is	N.W. Bell	
2		230+60 - 251+00	LT. Gasmain	"	No. Cent. Gas Co.	
3		230+60 - 241+25	LT. Watermain	"	City of Coon Rapids	
4		230+60 - 238+60	RT. Watermain	"	"	
5		230+60 - 235+25	RT. Gasmain	"	No. Cent. Gas Co.	
6		233+65	E. Tel. Cables (2 Bur., 1 O.H.)	"	N.W. Bell	
7		234+25	LT. Hydrant	"	City of Coon Rapids	
8		236+40	RT. Hydrant	"	"	
9		238+30	LT. Hydrant	"	"	
10		243+90 - 251+00	LT. Tel. Cables (3 Buried)	"	N.W. Bell	
11		240+80 - 247+90	LT. 42" San. Sewer	"	City of Coon Rapids	
12		243+65	E. Gasmain	"	No. Cent. Gas Co.	
13		243+80	E. Tel. Cable (Buried)	"	N.W. Bell	
14		241+00	LT. Powerline (O.H.)	"	N.S.P.	
15		247+70	E. 42" San. Sewer	"	City of Coon Rapids	
16		FR ¹ 14+20 - 20+50	RT. Watermain	"	"	
17		13+65 - 20+50	RT. Light STDS. (5) & Bur. Conduit	"	Coon Rapids Shopping Cen.	
18		19+60	E. Tel. Cable (Buried)	"	N.W. Bell	
19		19+70	E. Gasmain	"	No. Cent. Gas Co.	
20		L ⁵ 0+00 - 1+40	RT. Powerline (O.H.)	Leave as is	N.S.P.	
21		2+85	E. 42" San. Sewer	"	City of Coon Rapids	
22		3+93	E. Powerline (O.H.)	"	N.S.P.	
23		L ⁴ 0+00 - 3+00	RT. Tel Cables (3 Bur.)	Leave As is	N.W. Bell	
24		0+00 - 3+00	RT. Gasmain	"	No. Cent. Gas Co.	
25		0+00 - 3+00	RT. San. Sewer	"	City of Coon Rapids	

PUBLIC UTILITIES						
LINE	SHEET NO.	LOCATION	ITEM IN PLACE	REMARKS	OWNERSHIP	
1		Lo ^r 255+00 - 265+00	RT. Watermain (24" Conc.)	Relocate 600' * (see plan)	City of Coon Rapids	
2		255+00 - 265+00	RT. Tel. Cable (Buried)	Lower 600' * (see plan)	N.W. Bell	
3		255+00 - 265+00	RT. Gasmain	"	No. Cent. Gas Co.	
4		255+00 - 265+00	RT. Power Line (O.H.)	Leave as is	N.S.P.	
5		L ² 0+70	E. 6" Watermain	Leave as is	City of Coon Rapids	
6		1+06	LT. Hydrant	Relocate	"	
7		L ^{5b} 0+32	RT. Hydrant	Relocate	City of Coon Rapids	
8		1+00 - 12+50	RT. Tel. Cable (Buried)	Leave as is	N.W. Bell	
9		1+00 - 12+50	RT. Gasmain	"	No. Cent. Gas Co.	
10		1+00 - 12+50	RT. Powerline (O.H.)	"	N.S.P.	
11		1+75 - 12+50	LT. Watermain (24" Conc.)	"	City of Coon Rapids	
12		9+70	LT. 6" Watermain, G.V. & Hyd.	"	"	
13		Lo ^r 273+40	E. 345 KV Transmission Lines	Leave as is	N.S.P.	
14		"	E. Transmission Tower	"	"	
15		275+70	E. Gasmain	"	Minnesacoo	
16		275+95	E. 69 KV. Transmission Lines	"	Rural CO-OP Power Ass.	
17		276+70	RT. San. Manhole	Reconstruct (+5.0')	Metro Sewer Board	
18		273+40 - 292+25	RT. Powerline (O.H.)	Leave as is	Anoka Elec. CO-OP	
19		295+00 - 300+25	RT. Tel. Cable (Buried)	"	N.W. Bell	
20		290+00 - 295+00	LT. " "	"	"	
21		FR ³ 0+00 - 3+00	LT. Gasmain	"	Northern Natural Gas	

CASTING SCHEDULE			
TYPE	NEENAH R-3250-1	MHD 804-813	MHD 700-7, 730-6
NO.	A	B	C
QUANT.	17	1	1

STORM SEWER																					
STRUCT. NO.	STATION	LOCATION	CONSTRUCTION			TOP OF CASTING OR INLET ELEV.	OUTLET ELEV.	F.B.I. CASTING ASSY. TYPE	FURNISH AND INSTALL PIPE SEWER.....						APRONS		DRAINS TO		SODDING SQ. YD.	CLASS A RANDOM RIFRAP CU. YD.	TYPE I FILTER BLANKET CU. YD.
			DESIGN	PAY HEIGHT	LIN. FT.				12"	15"	18"	24"	27"	30"	R.C.P.	C.M.	STR. NO.	GRADE %			
1	Lo ^r 13+06	43' RT.	C-G	4.0	851.75	49.94	A	59							1	2	5.1	46.65			
2	Lo ^r 237+50	43' RT.	A-F	7.4	850.60	846.45	C									2	5.0	47.74			
3	FR ¹ 16+05	40' RT.	C-G	4.0	851.75	47.58	A			30						5	0.8	43.91			
4	16+32	29' RT.	C-G	4.3	851.08	46.91	A				51					4	0.7	47.37			
5	16+32	12.87' LT.	A-F	7.7	851.43	843.66	A									5	4.4	44.80			
6	Lo ^r 243+07	44' LT.	C-G	3.7	847.07	43.37	A			76				256		8	1.2	40.61			
7	243+07	2.87' LT.	A-F	8.0	848.58	42.53	A				49					7	0.65	42.78			
8	243+07	46.87' RT.	A-F	8.9	849.36	40.36	A							369		8	0.7	42.18			
9	246+75	58.87' LT.	C-G	4.1	844.60	40.43	A	61								12	1.2	35.94			
10	246+75	2.87' RT.	A-F	5.1	844.84	39.75	A			6						10	0.7	40.00			
11	246+75	9.13' RT.	A-F	5.6	845.08	39.51	A			45						11	0.7	39.71			
12	246+75	54.87' RT.	A-F	8.9	844.68	35.74	A							413		12	1.0	39.05			
13	250+09	54.87' LT.	C-G	4.1	838.45	34.28	A	62								16	2.2	26.50			
14	250+51	9.13' LT.	C-G	4.1	837.34	33.17	A			11						14	1.4	33.42			
15	250+42	2.87' LT.	C-G	4.2	837.11	32.86	A			78						15	1.0	33.06			
16	250+95	54.87' RT.	A-F	7.2	835.22	28.00	A							30		16	2.0	31.30			
17	263+51	4.13' RT.	C-G	3.8	873.57	69.70	A	41							1	Channel	5.0	26.50			
18	L ^{5b} 0+00	12.87' RT.	H	3.1	873.49	70.15	A	49								E 39	3.7	68.15			
19	8+15	14' LT.	C-G	4.5	877.87	73.70	B	83								E 17	0.5	69.90			
																E 47	3.3	67.24			

SIGN TABULATION	
DESCRIPTION	AMOUNT
TYPE II REFLECTORIZED OBJECT MARKER	2
CROSSING TO COON RAPIDS BOULEVARD PROHIBITED EAST RIVER ROAD ONLY	1
INTERCHANGE GUIDE SIGN	2
INTERCHANGE GUIDE SIGN	2
W 9-1 200 FT.	2
W 9-1 500 FT.	2
RIGHT TURN LANE	4
LEFT TURN LANE	5
R 1-1	7
R 1-2	3
R 3-5	10
R 4-7	8
W 9-2	3
W 12-1	1

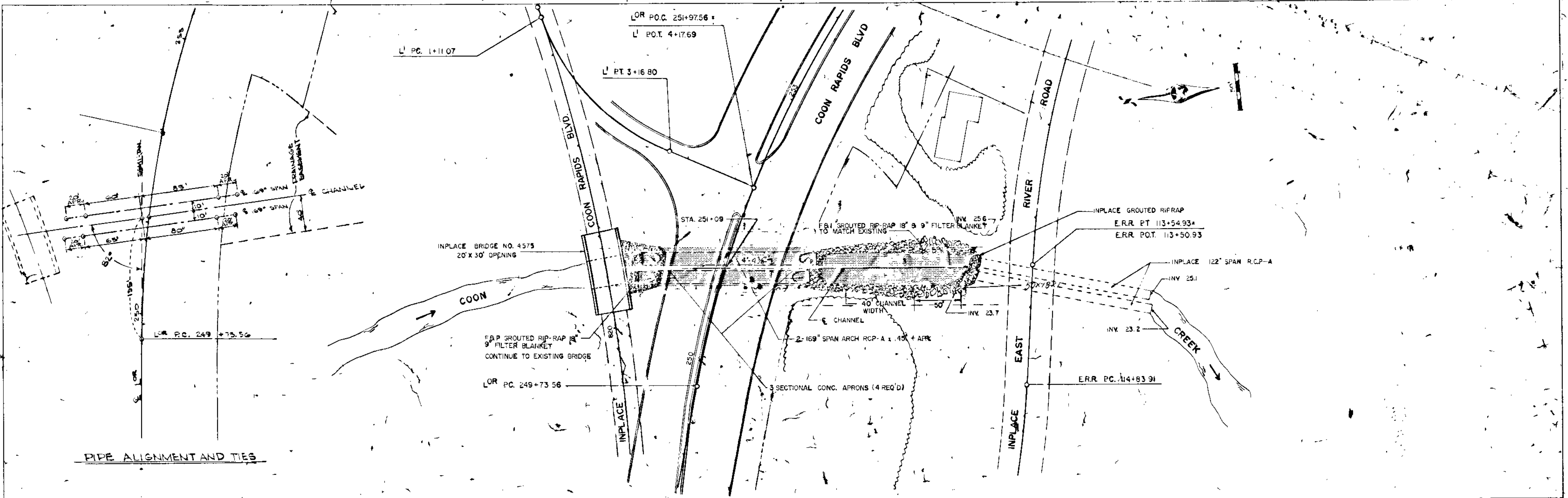
NOTE: FOR SIGNING, STRIPING, & BARRICADES REFER TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION.

AS BUILT 10-20-73 H.H.

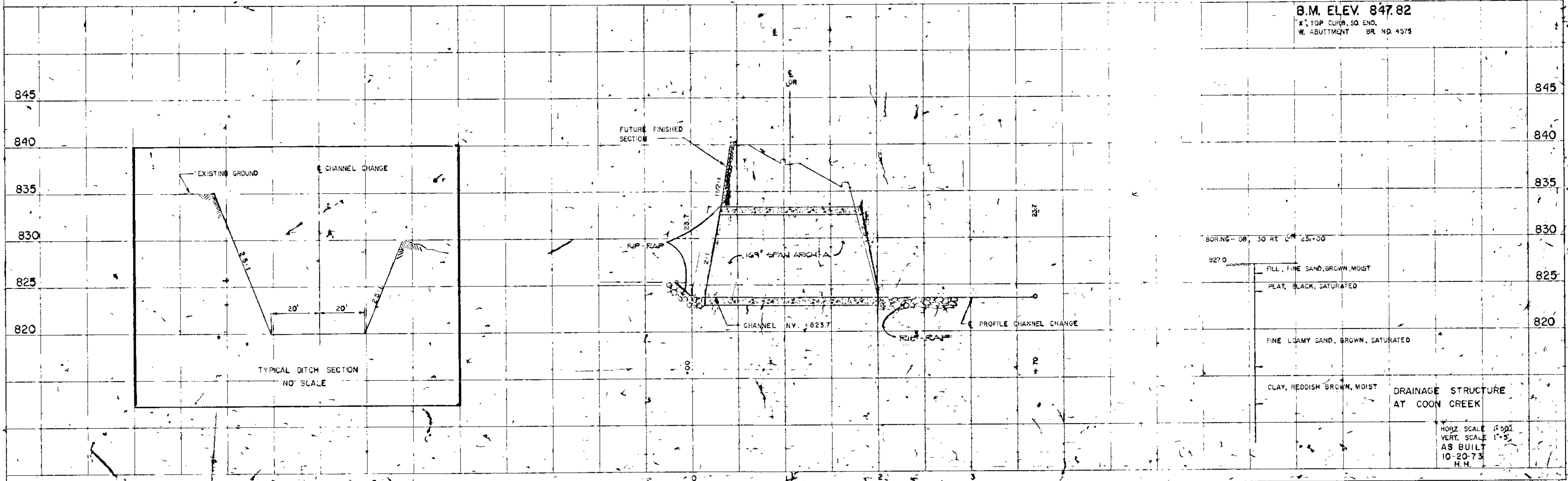
TABULATIONS

DATE:
 BY:
 PLAN:
 APPROVED:
 DATE:
 CHECKED:
 DATE:
 IN CHARGE:
 DATE:
 TITLE:
 SHEET NO.:

DATE:
 BY:
 PROFILE:
 APPROVED:
 DATE:
 CHECKED:
 DATE:
 IN CHARGE:
 DATE:
 TITLE:
 SHEET NO.:



PIPE ALIGNMENT AND TIES



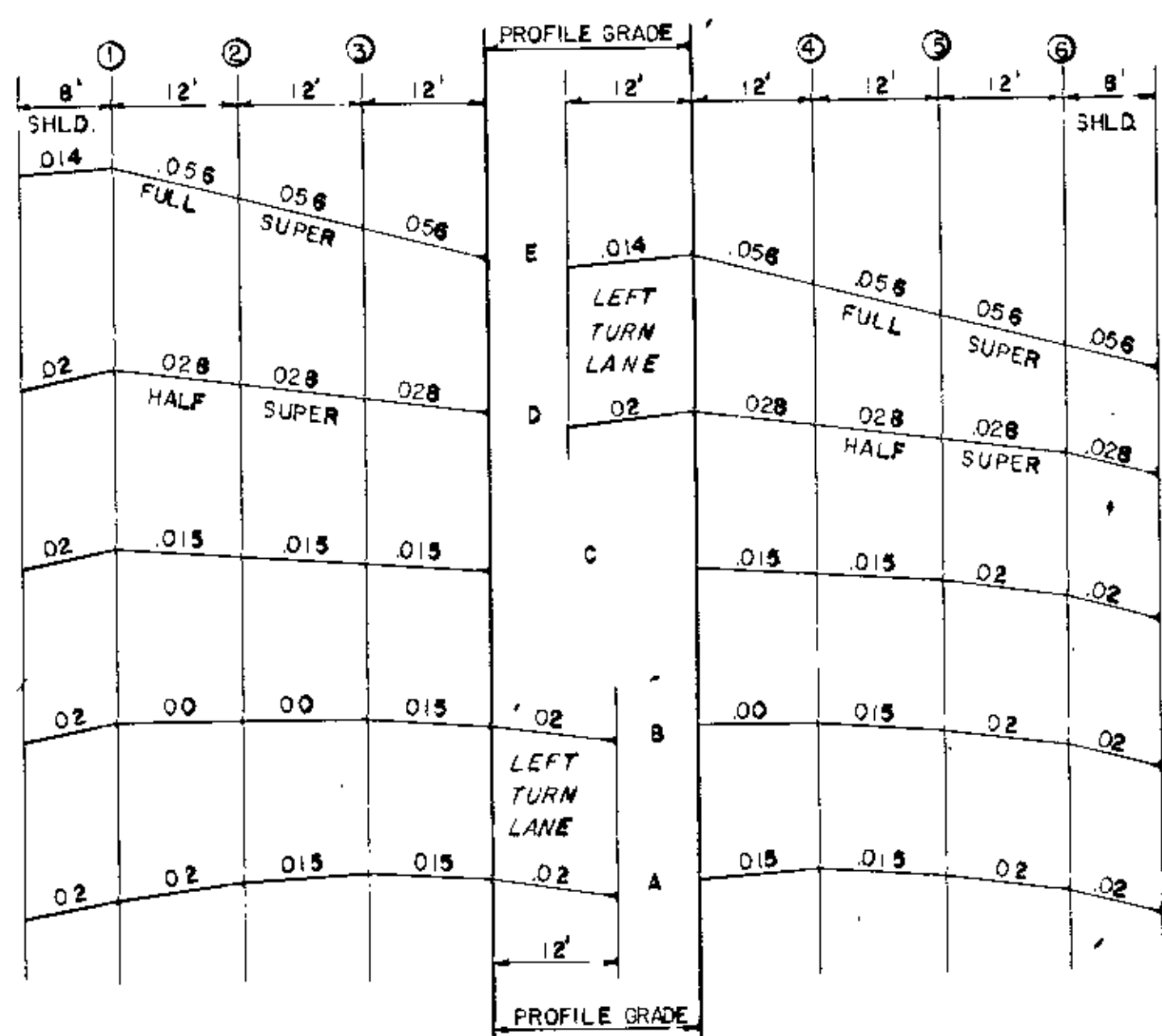
B.M. ELEV. 847.82
 X, TOP CURB, SQ. END,
 W. ABUTMENT BR. NO. 4575

BORING - 08, 30 FT L₂₅+00

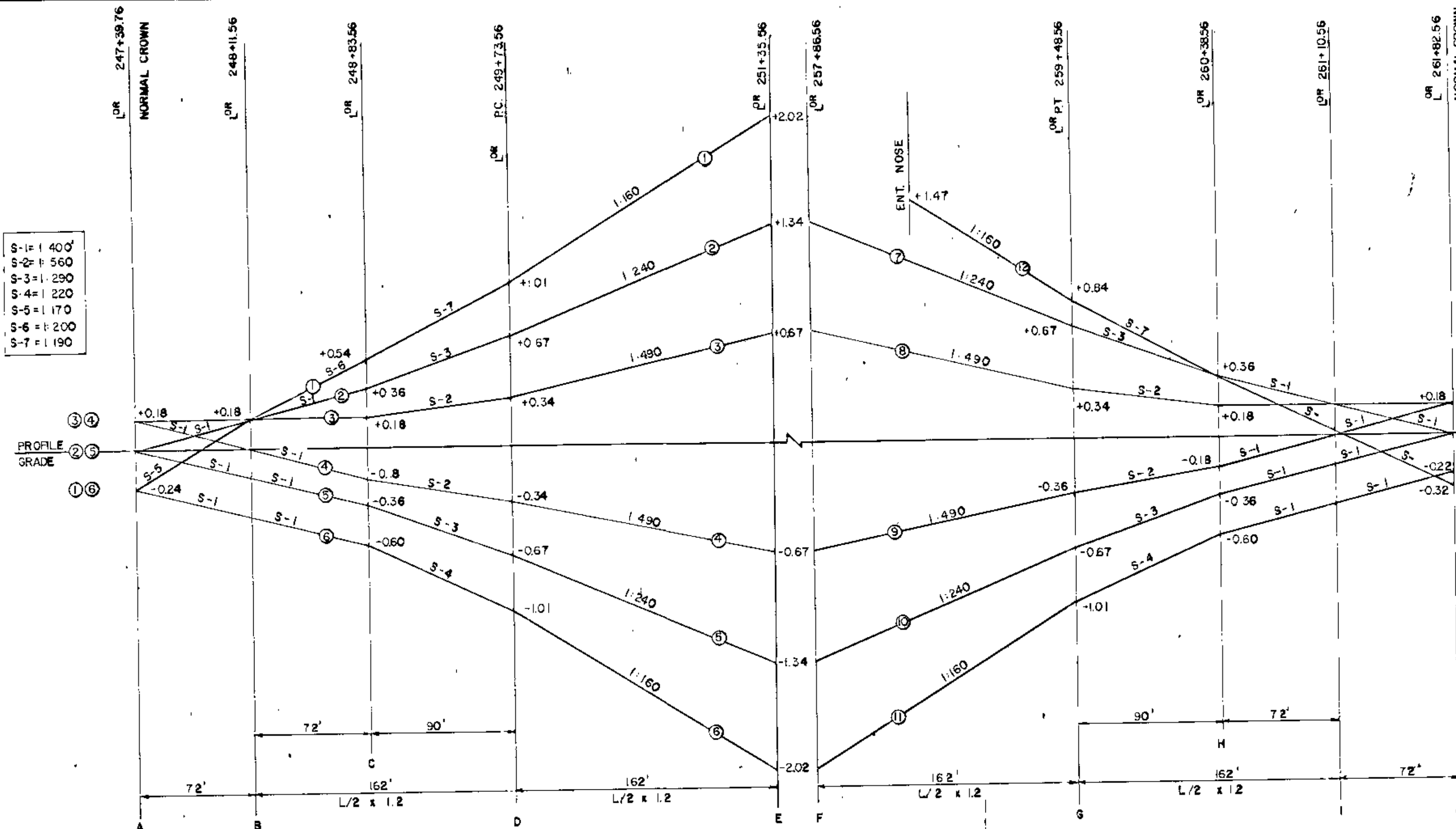
827.0	FILL, FINE SAND, BROWN, MOIST	825
	PEAT, BLACK, SATURATED	
	FINE LOAMY SAND, BROWN, SATURATED	820
	CLAY, REDDISH BROWN, MOIST	

DRAINAGE STRUCTURE AT COON CREEK

HORIZ. SCALE 1"=50'
 VERT. SCALE 1"=5'
 AS BUILT
 10-20-73
 H.H.

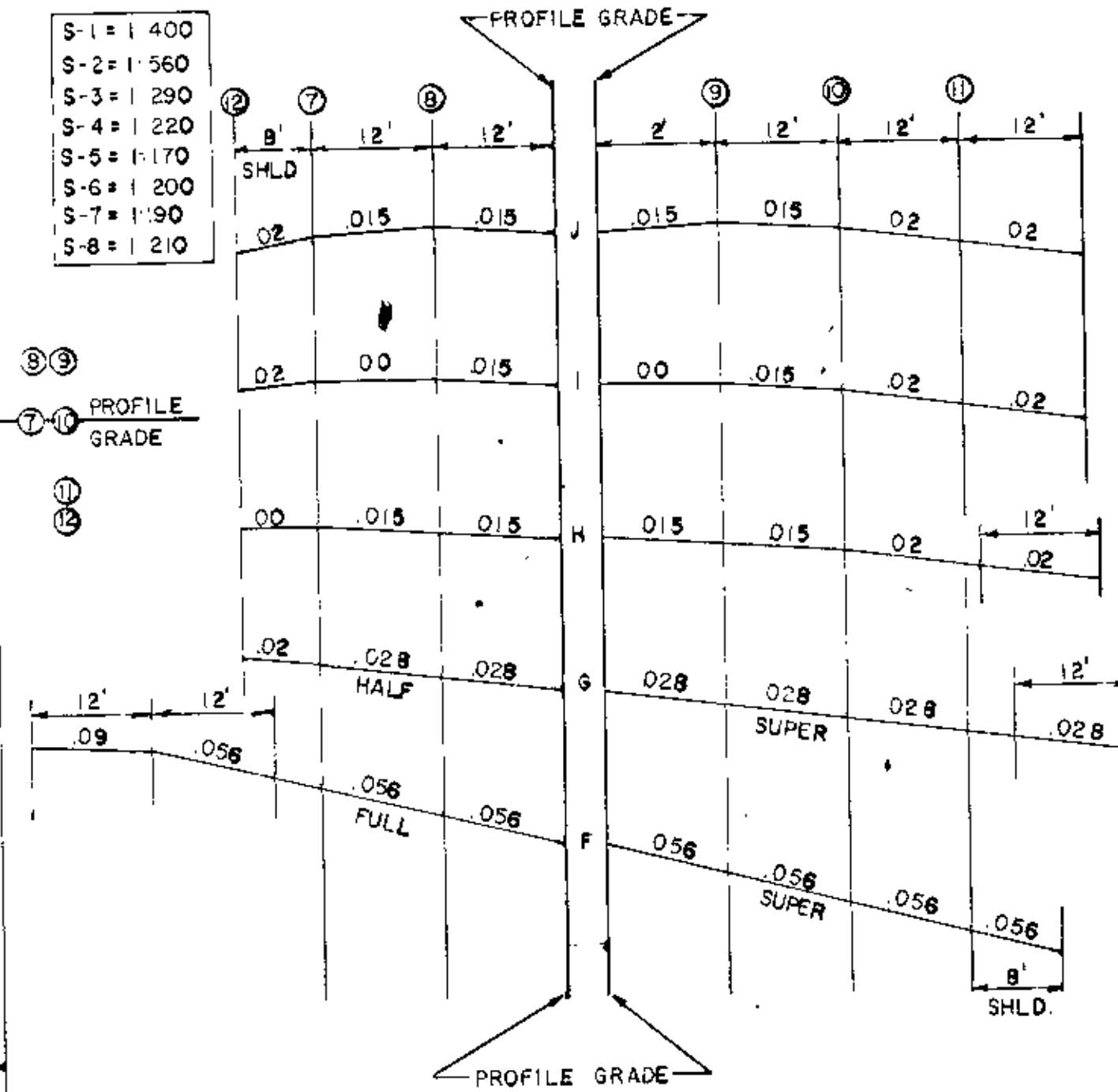


S-1 = 1.400
S-2 = 1.560
S-3 = 1.290
S-4 = 1.220
S-5 = 1.170
S-6 = 1.200
S-7 = 1.190

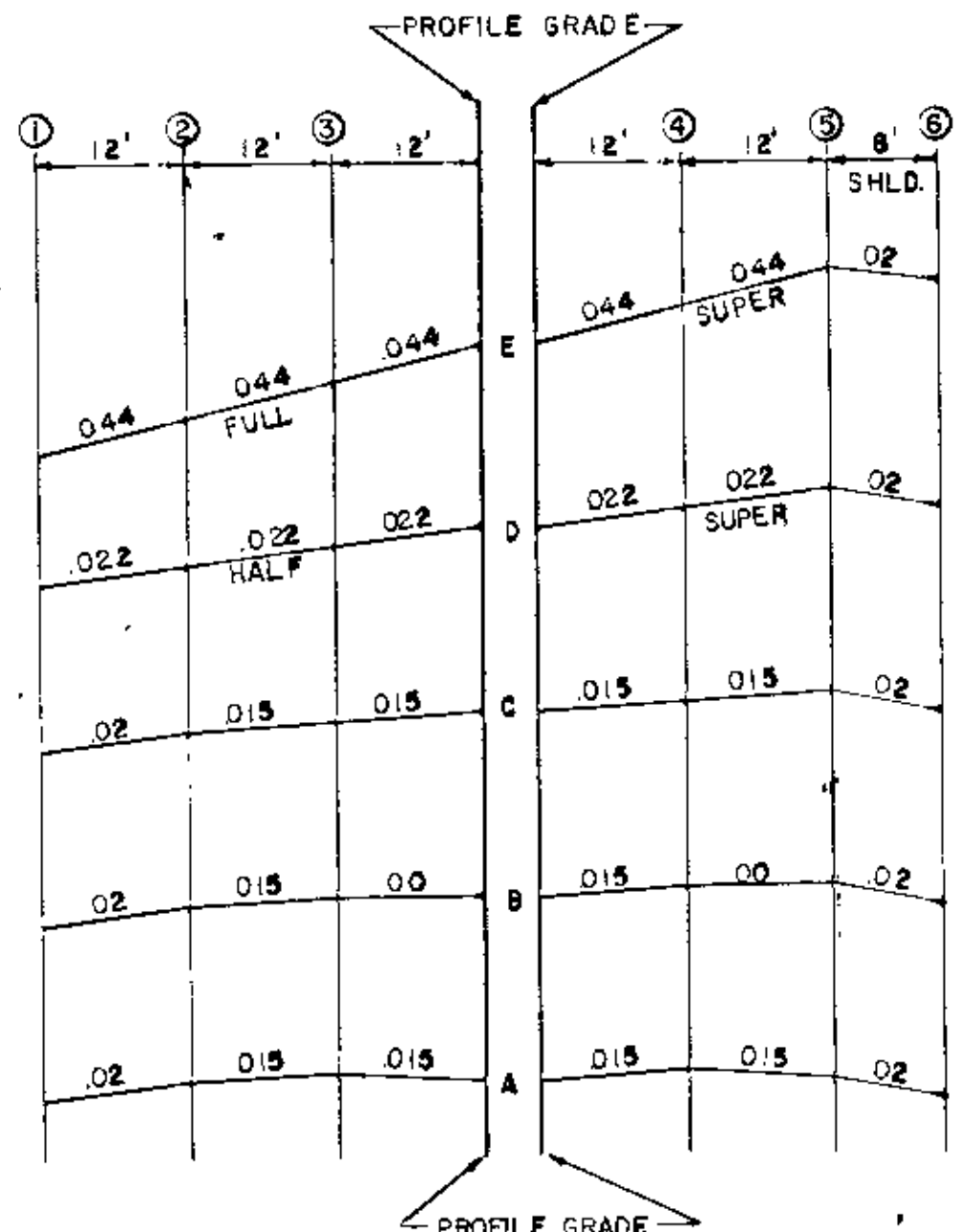


P.C. 249+73.56 5° CURVE E=0.056 L=270' P.T. 259+48.56

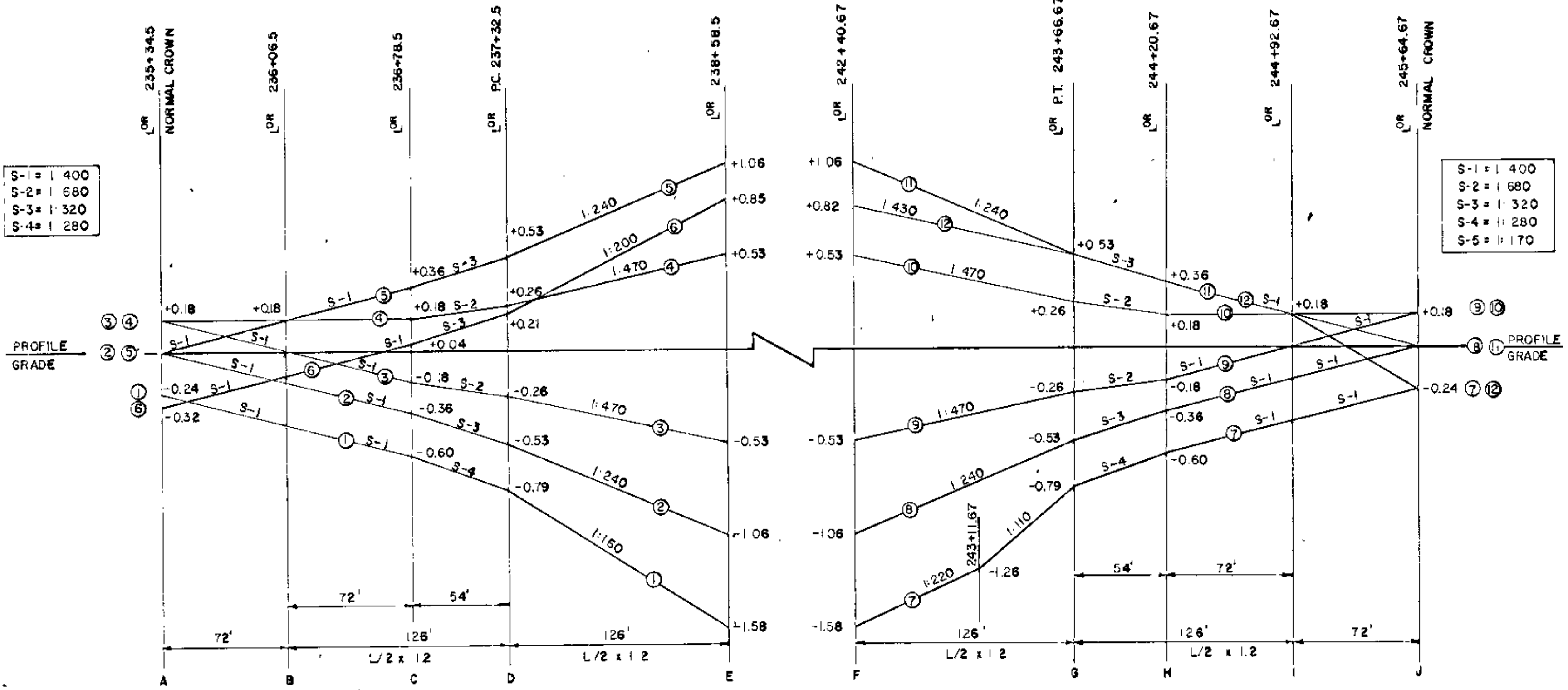
S-1 = 1.400
S-2 = 1.560
S-3 = 1.290
S-4 = 1.220
S-5 = 1.170
S-6 = 1.200
S-7 = 1.190
S-8 = 1.210



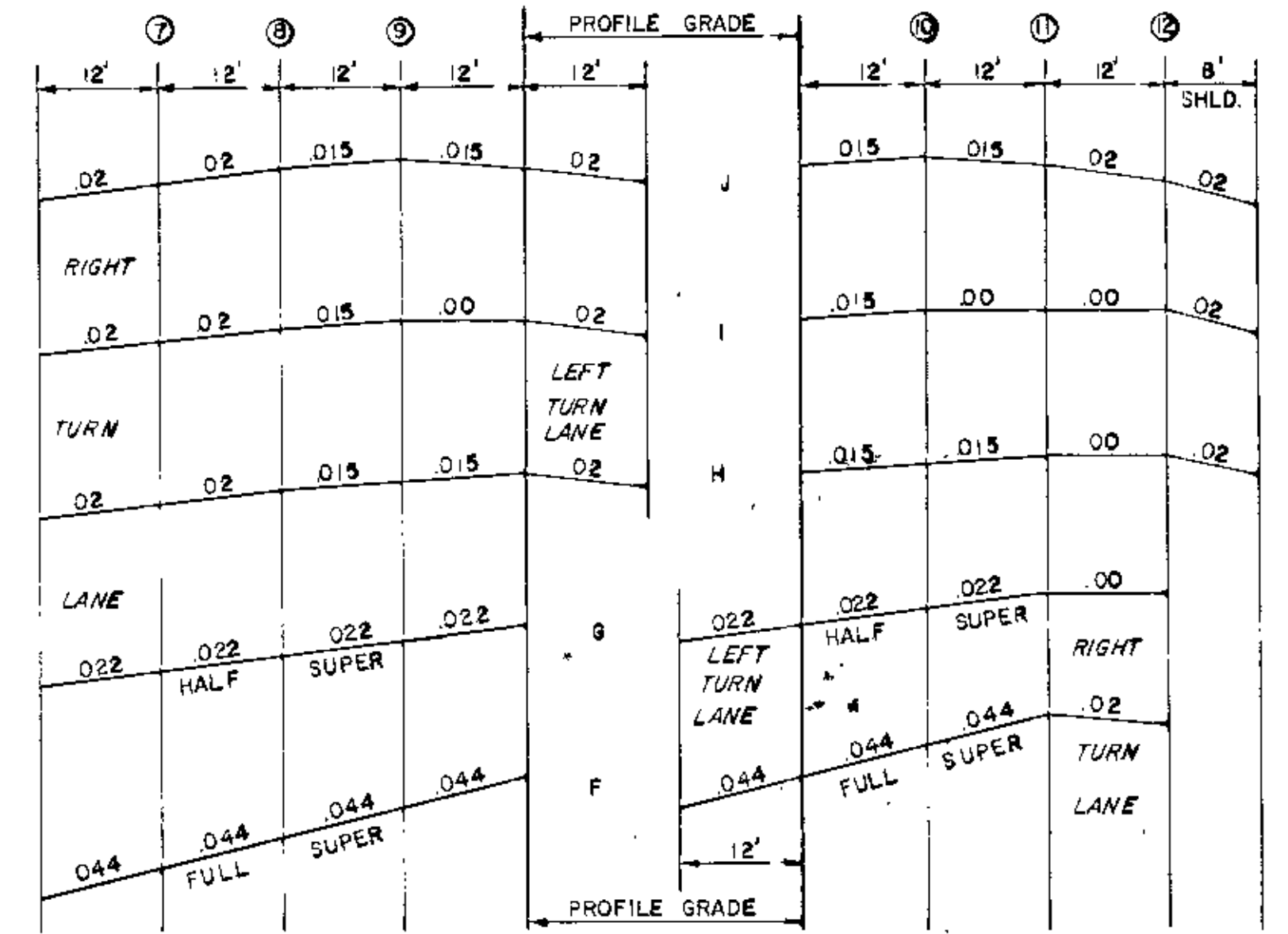
P.C. 237+32.50 3° CURVE E=0.044 L=210' P.T. 243+66.67



S-1 = 1.400
S-2 = 1.680
S-3 = 1.320
S-4 = 1.280

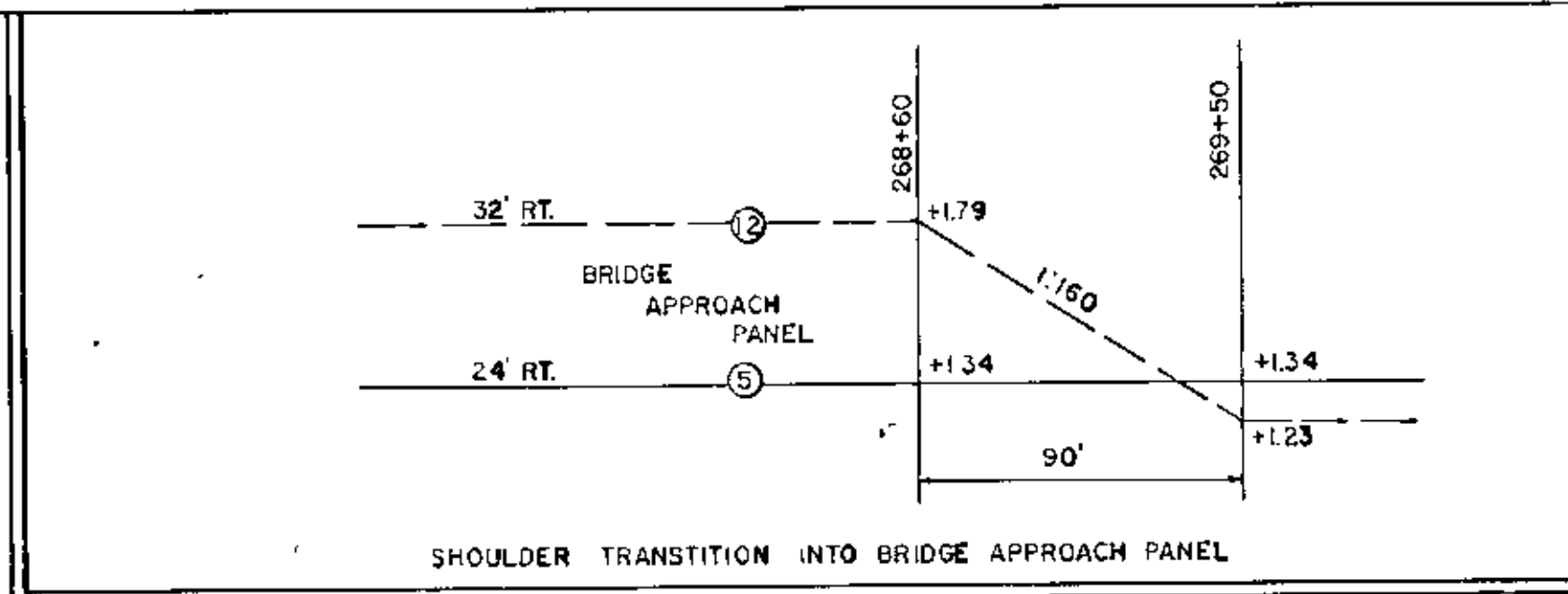
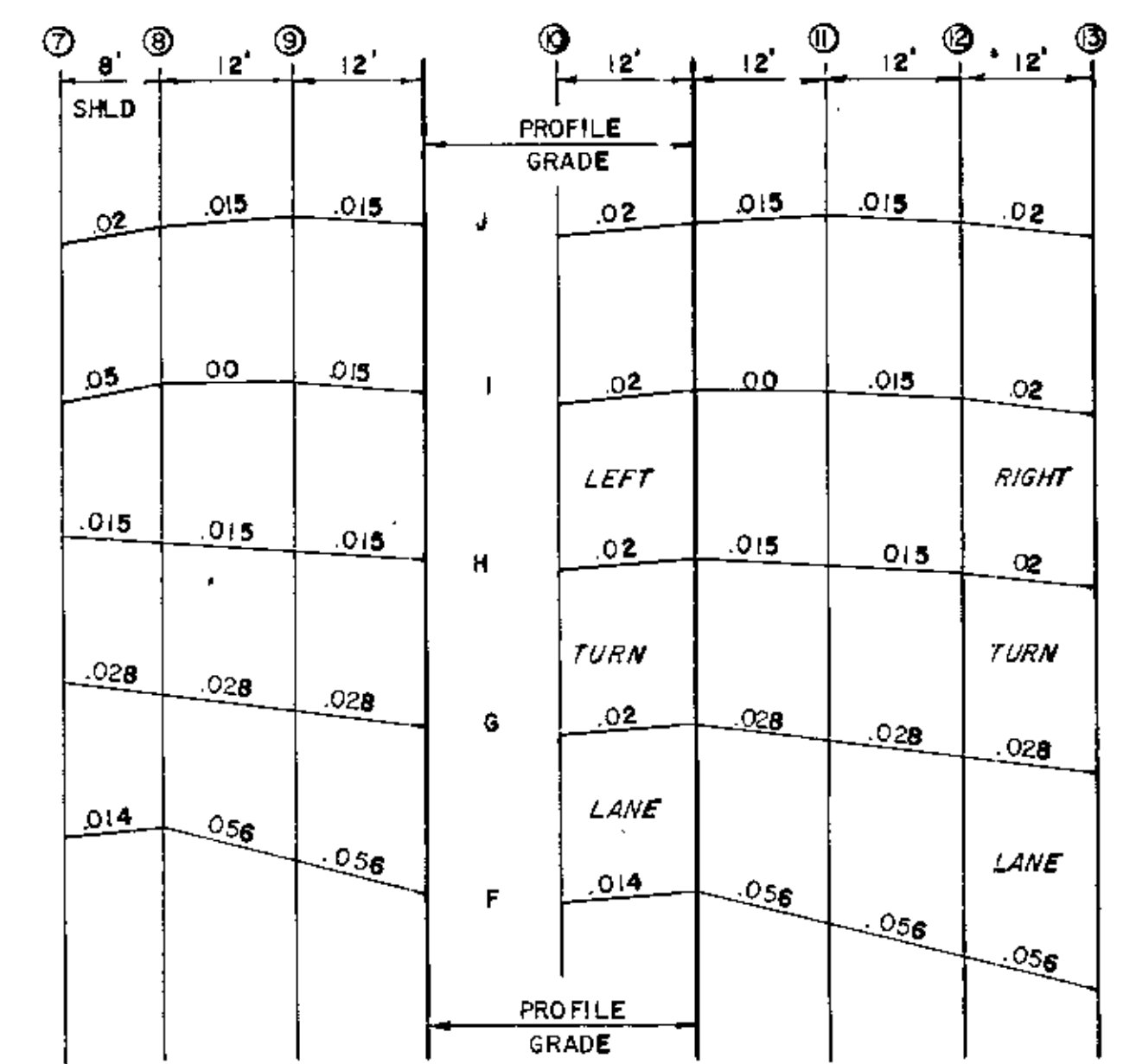
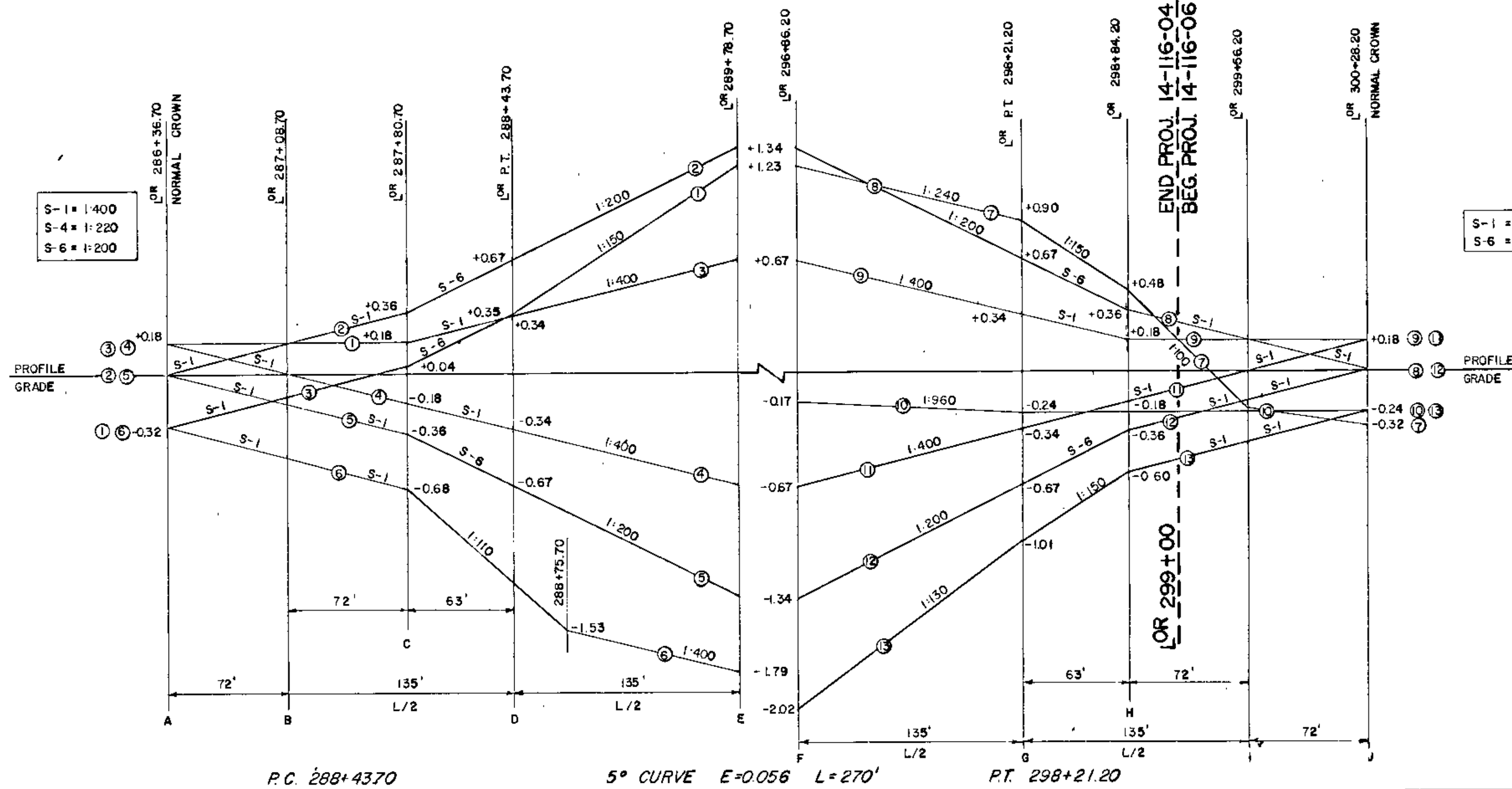
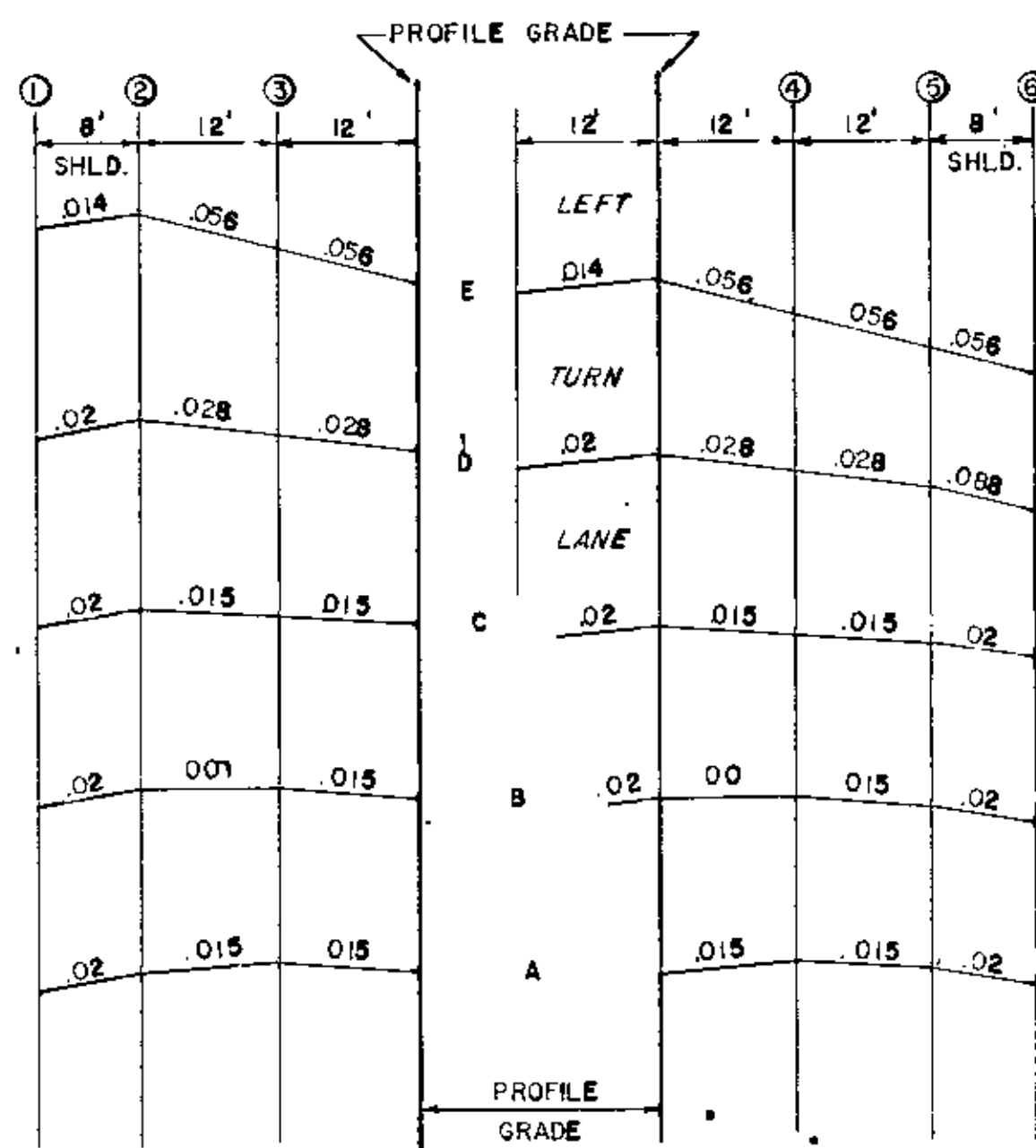


S-1 = 1.400
S-2 = 1.680
S-3 = 1.320
S-4 = 1.280
S-5 = 1.170

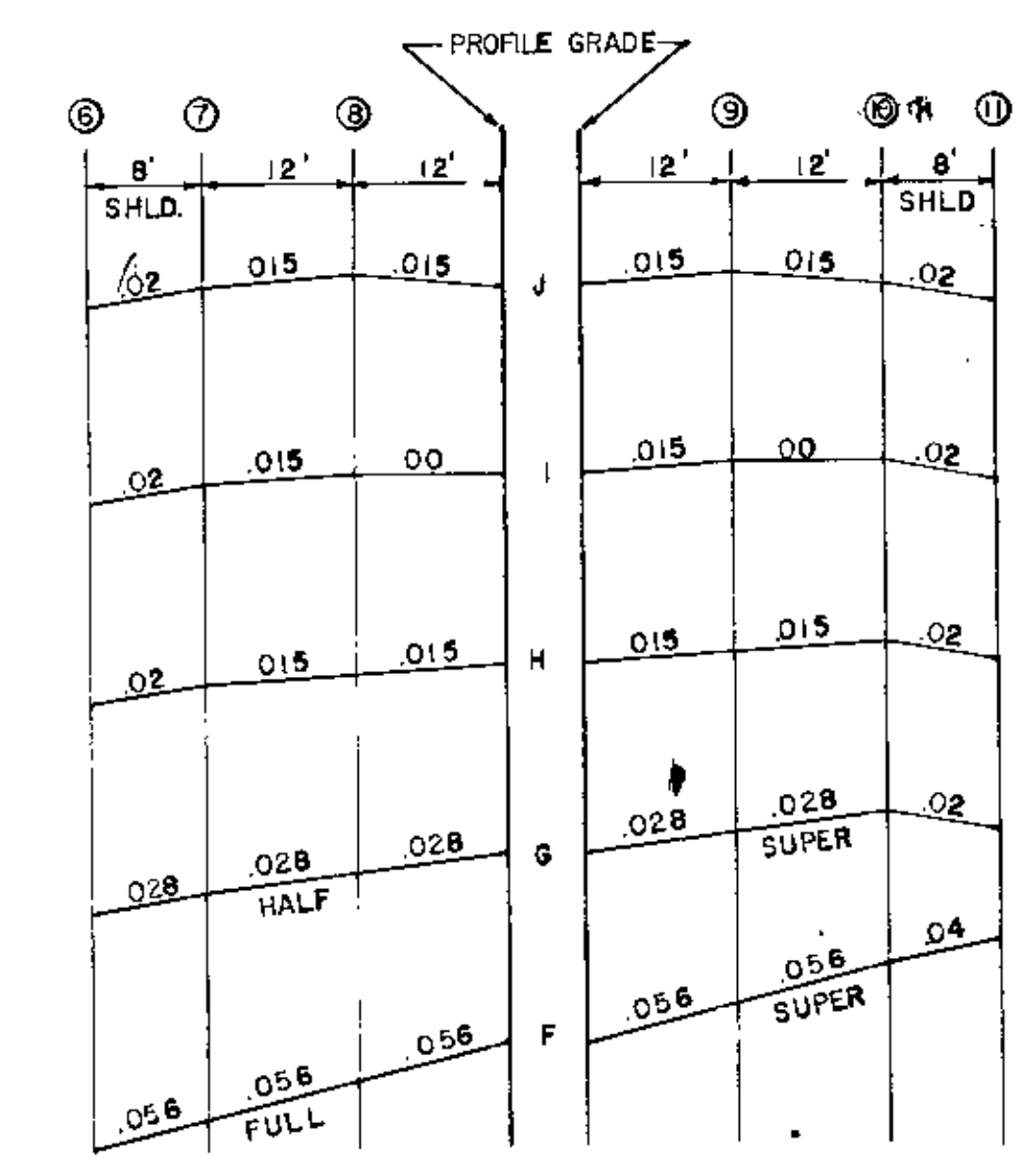
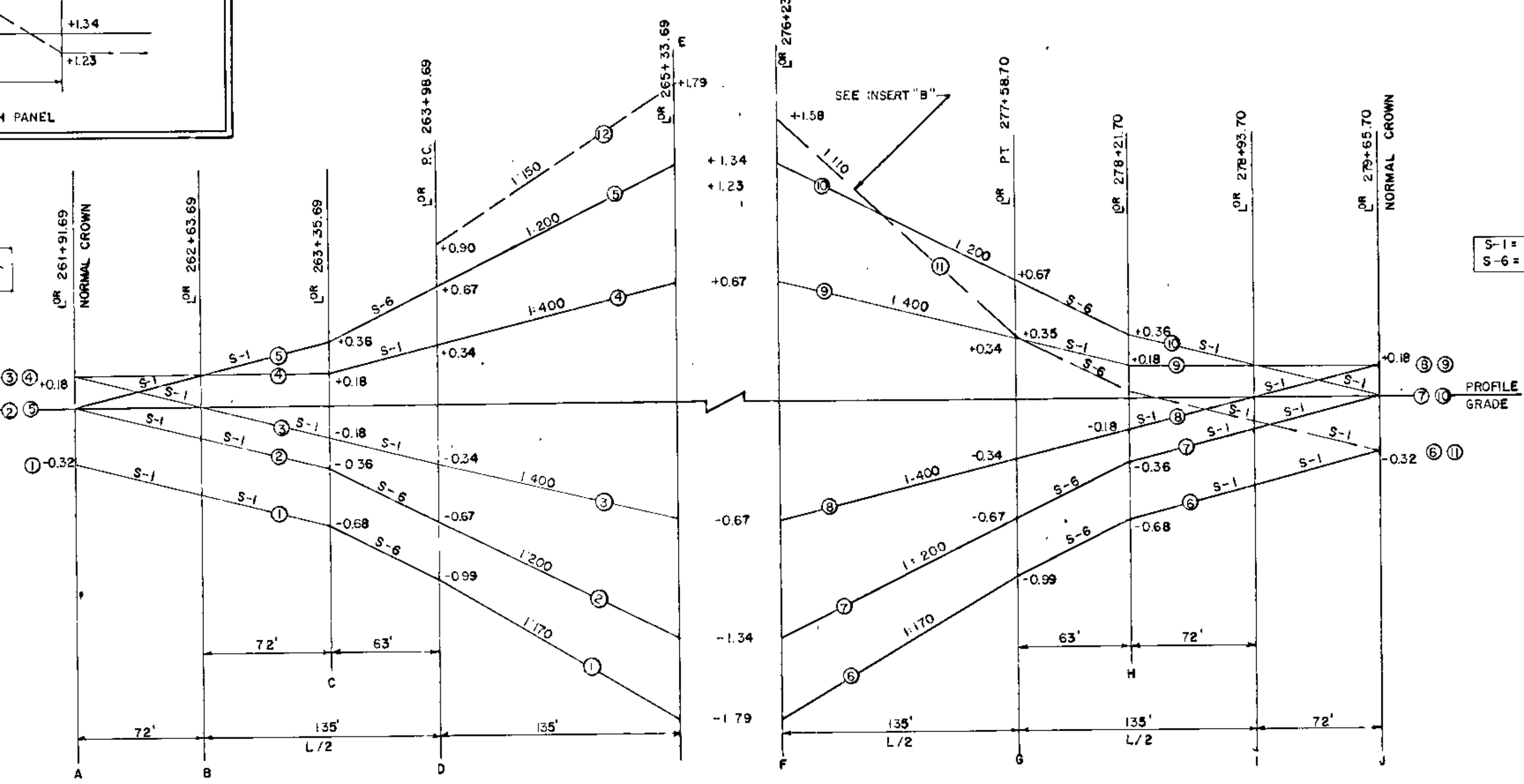
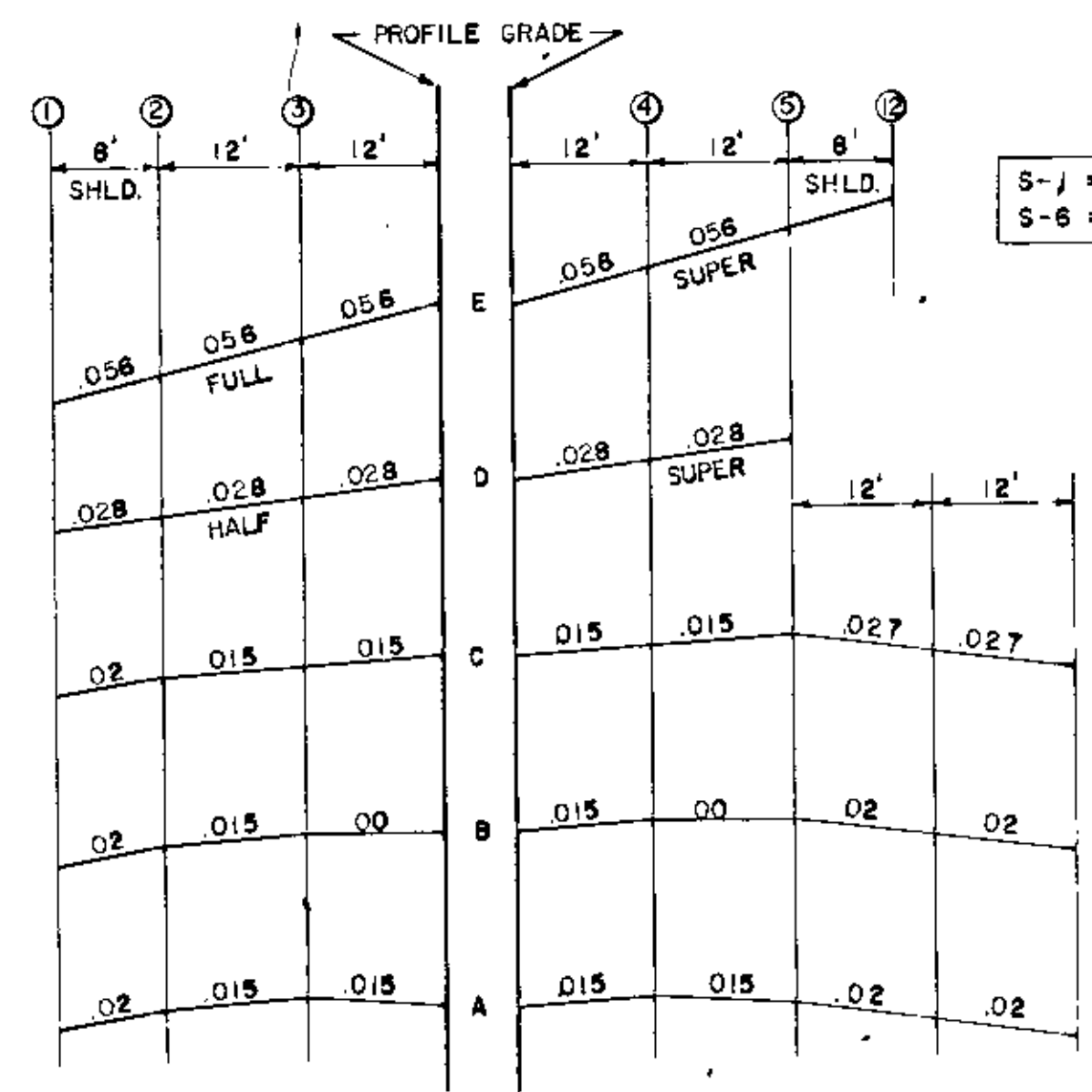
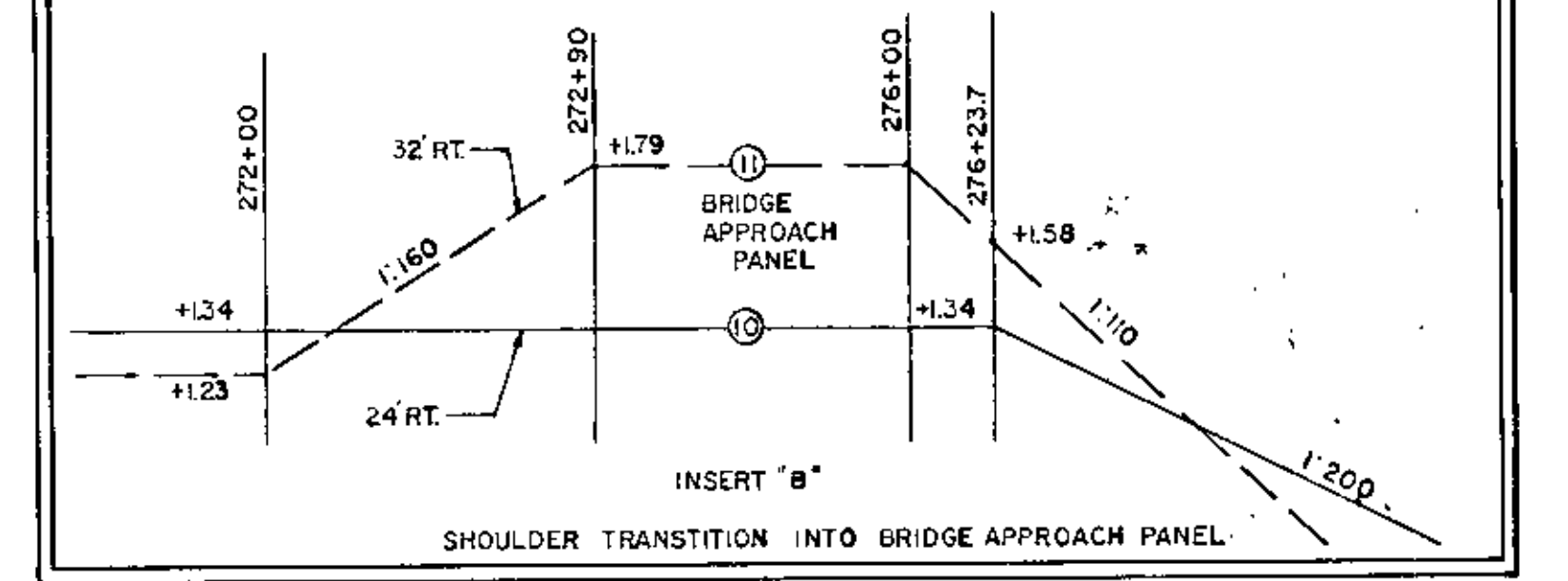


AS BUILT
10-20-73
H. H.

SUPERELEVATION CHART
AXIS ROTATION AT TOP EDGE OF GUTTER, RAISED MEDIAN.

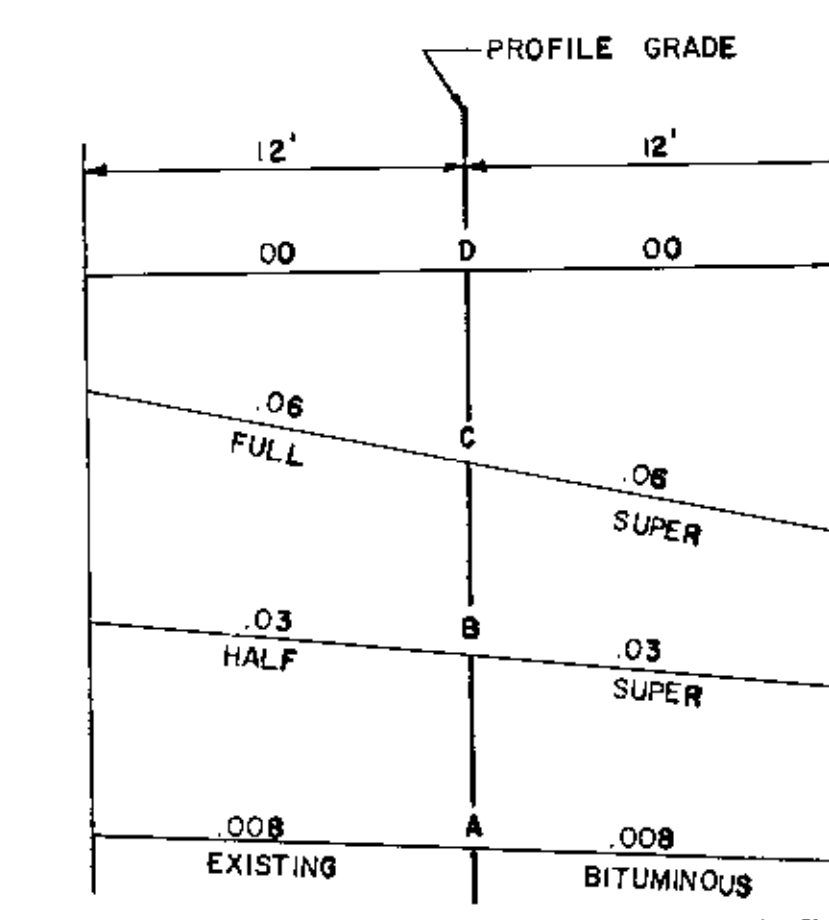
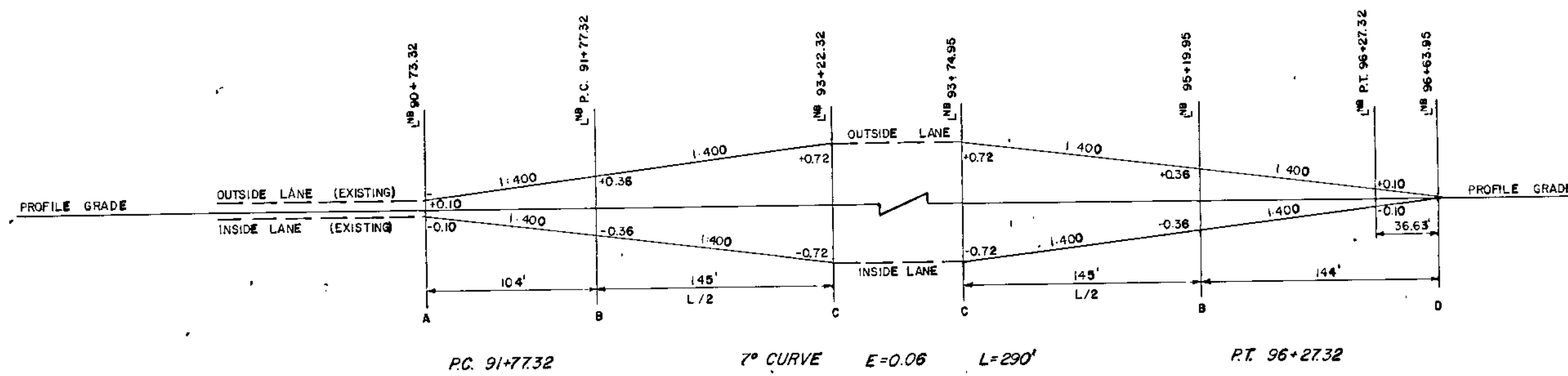
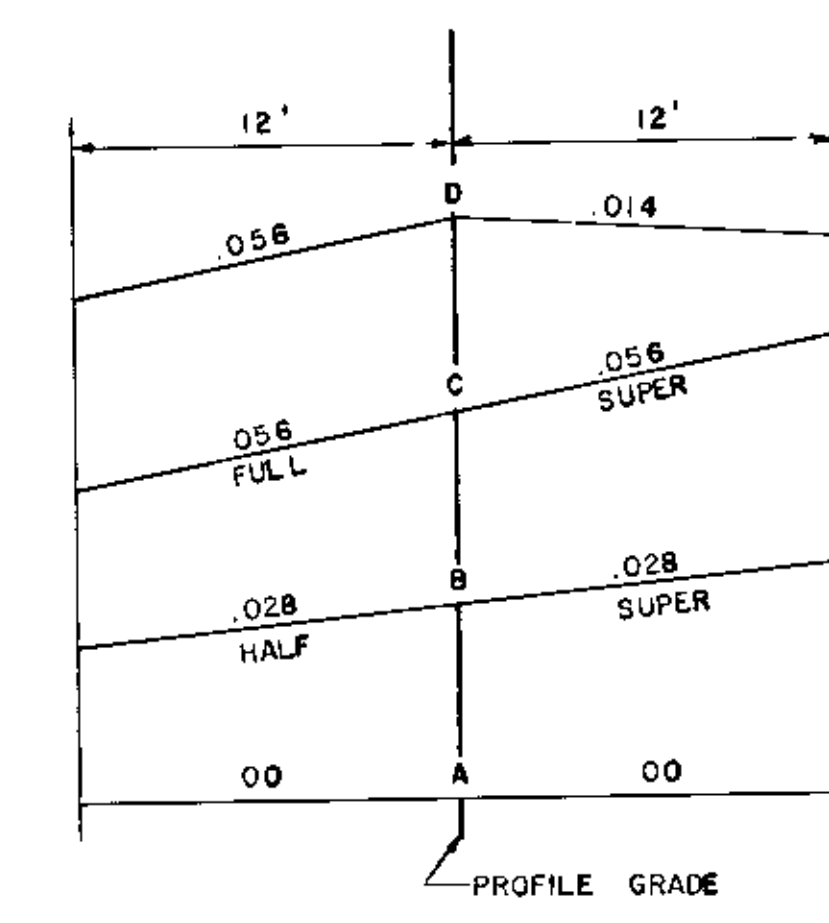
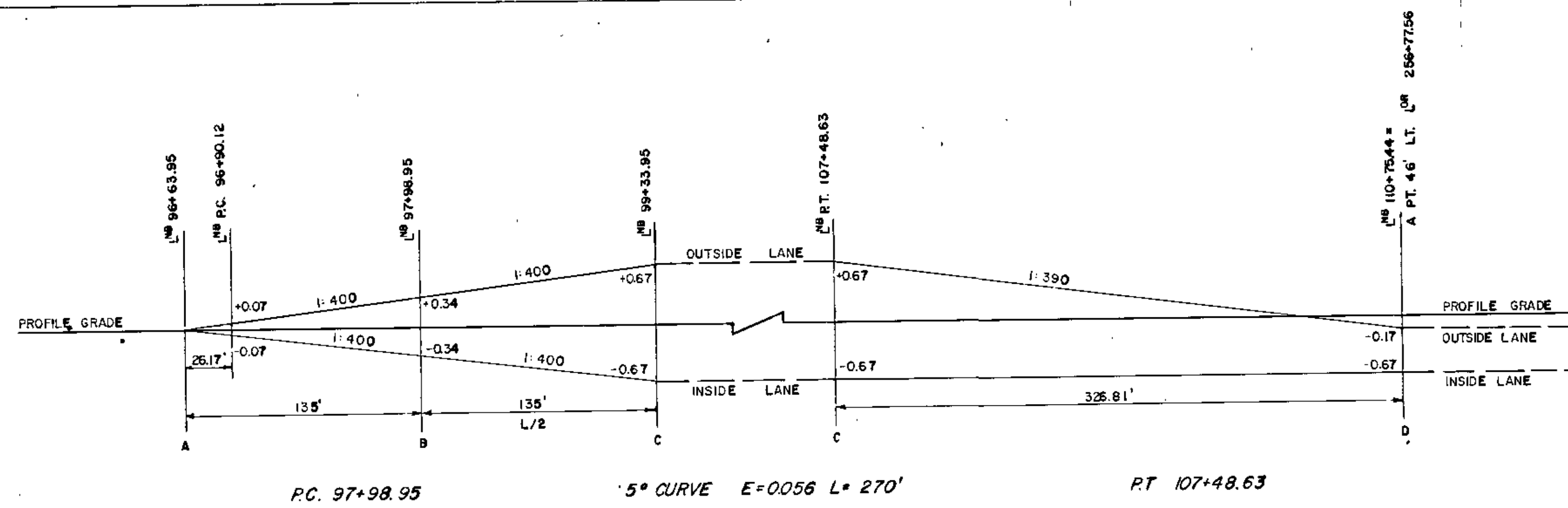
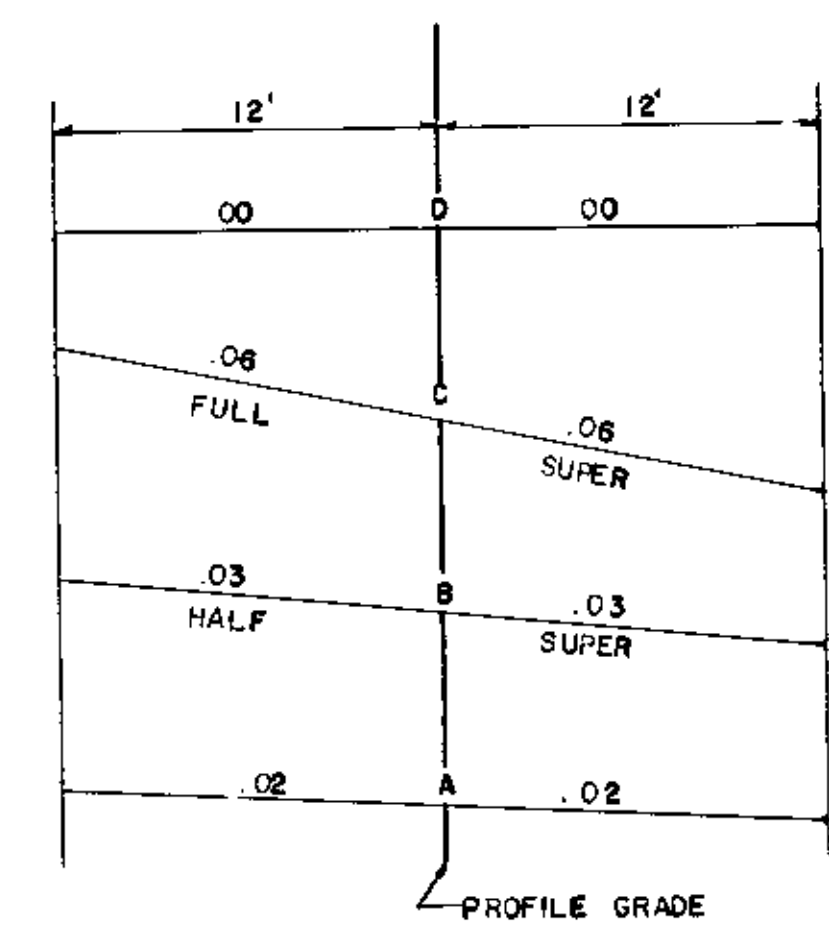
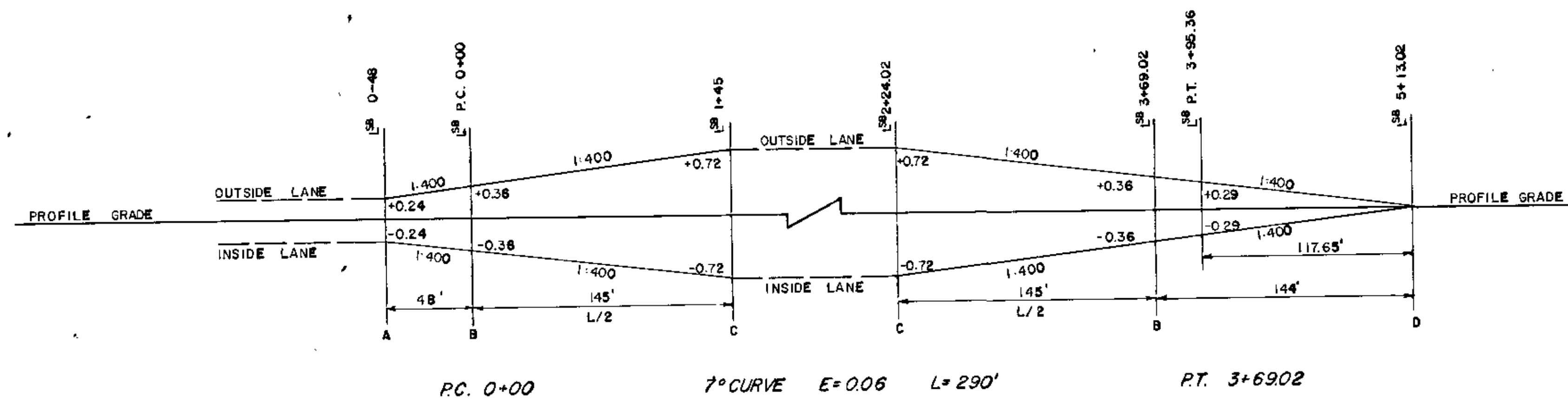


P.C. 263+98.69 5° CURVE E=0.056 L=270' P.T. 277+58.70



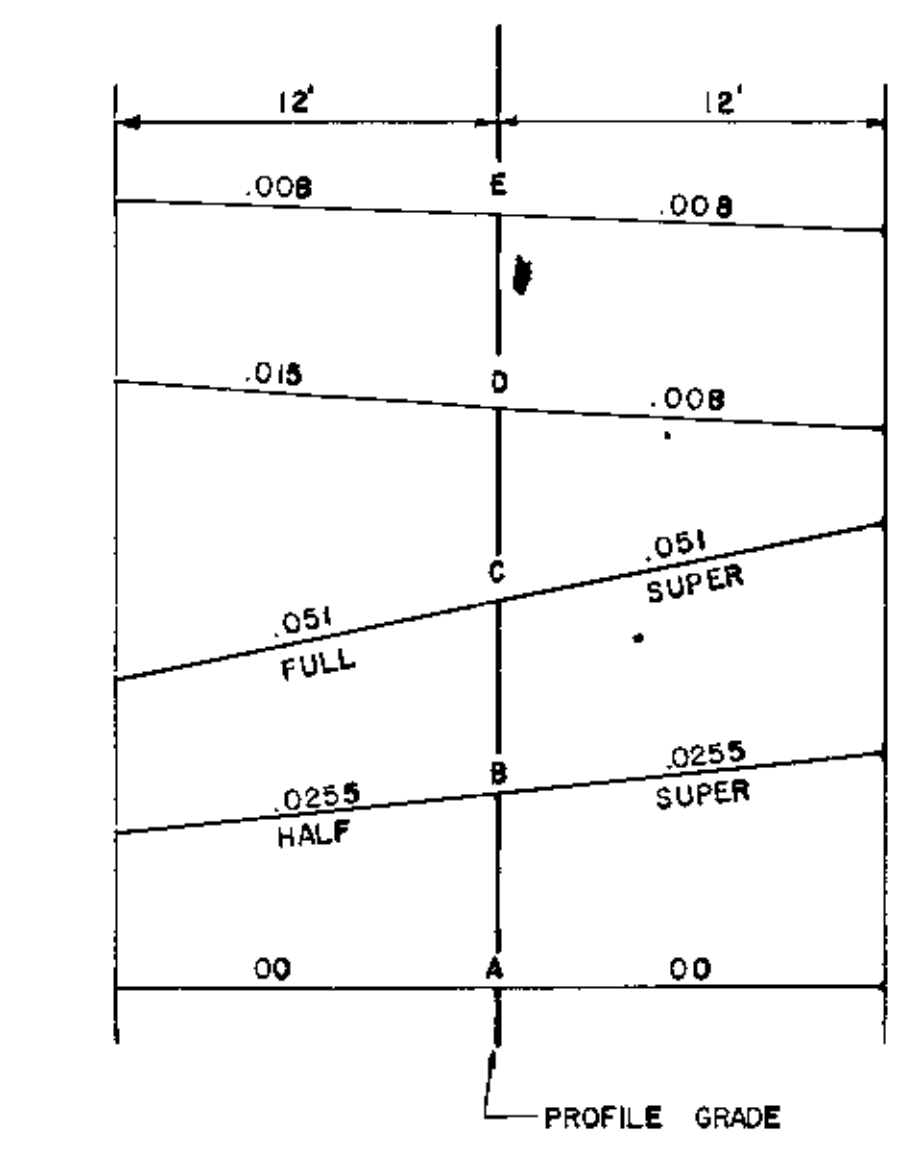
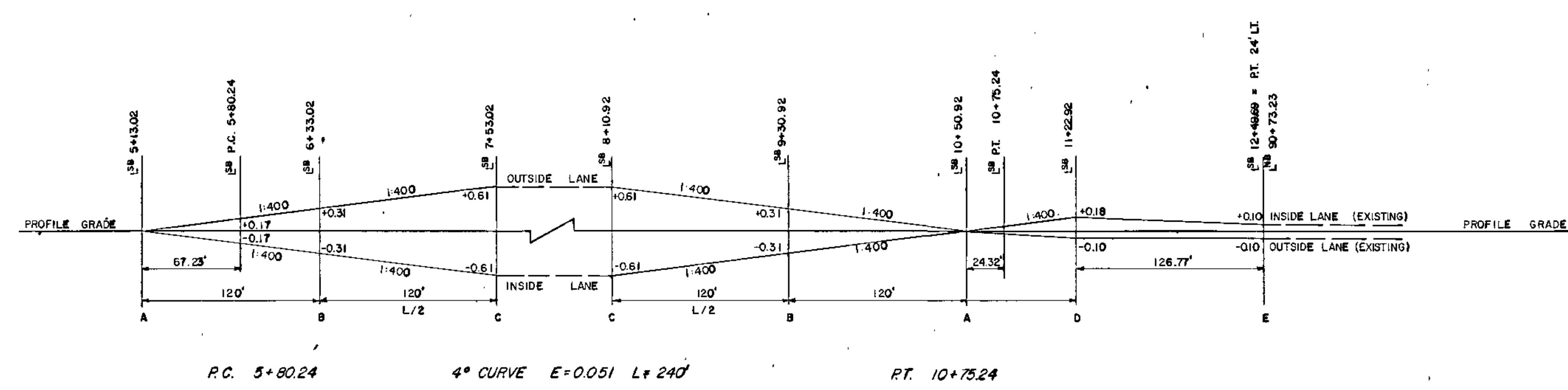
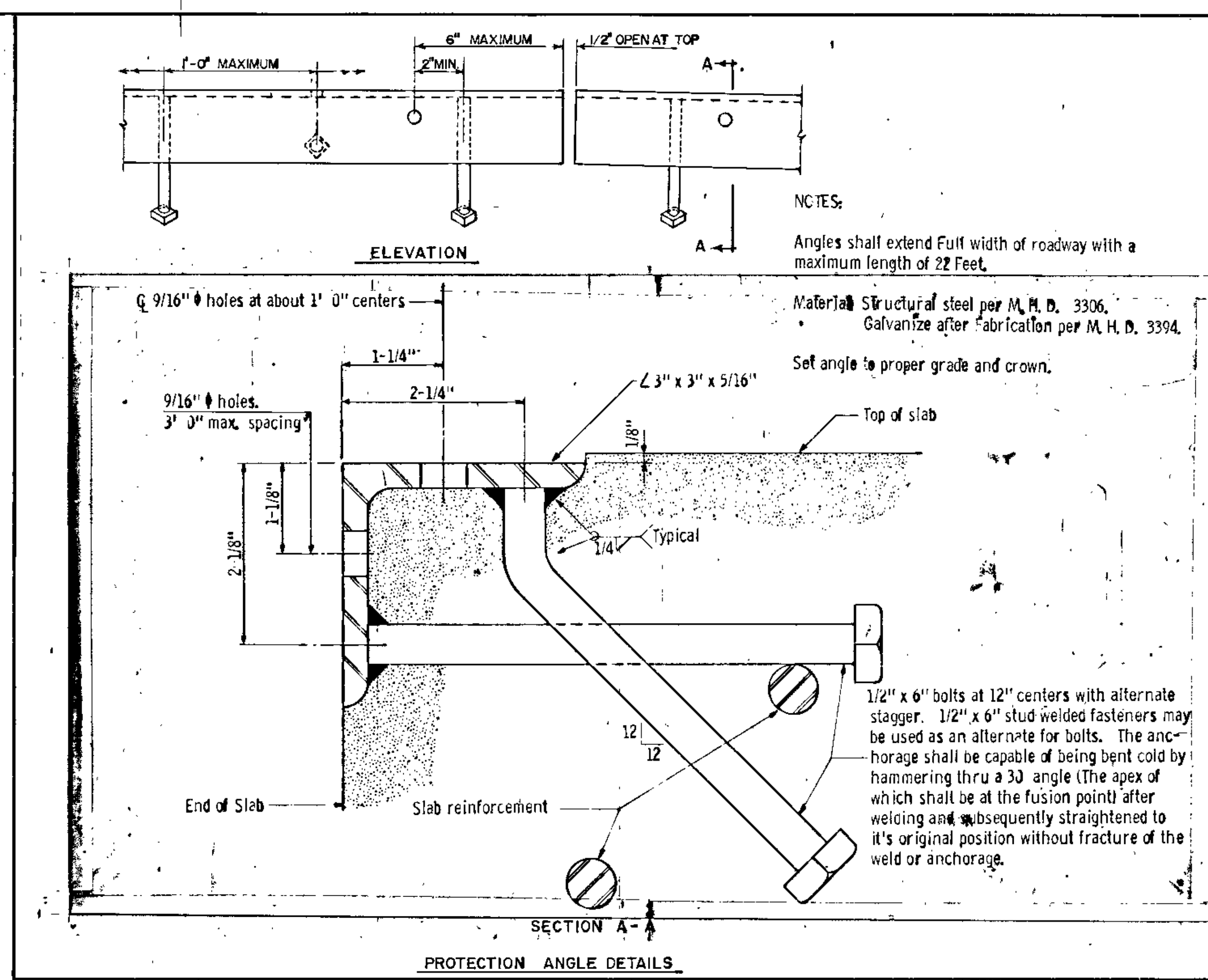
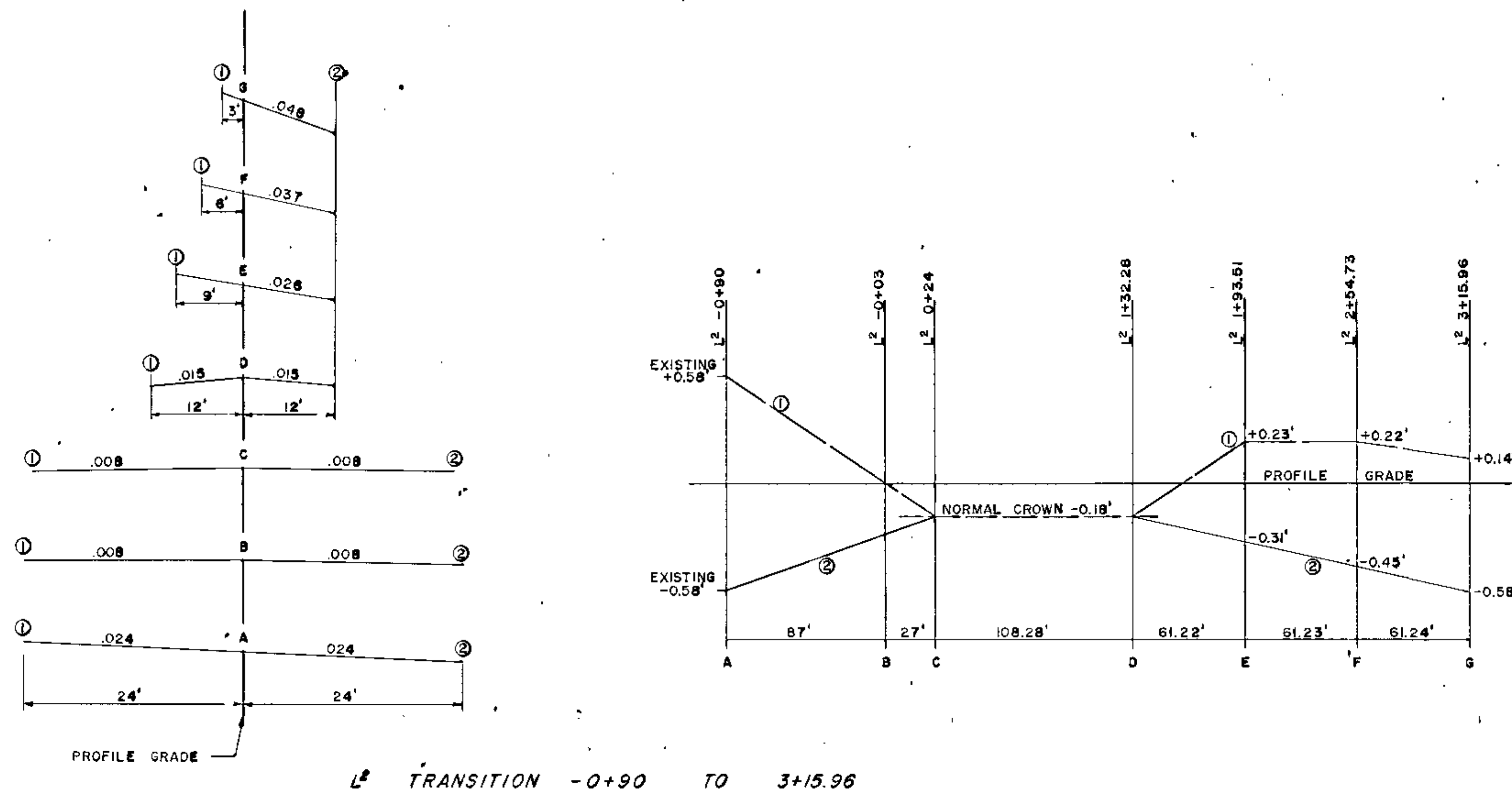
SUPERELEVATION CHART
 AXIS ROTATION AT TOP EDGE OF GUTTER, RAISED MEDIAN.

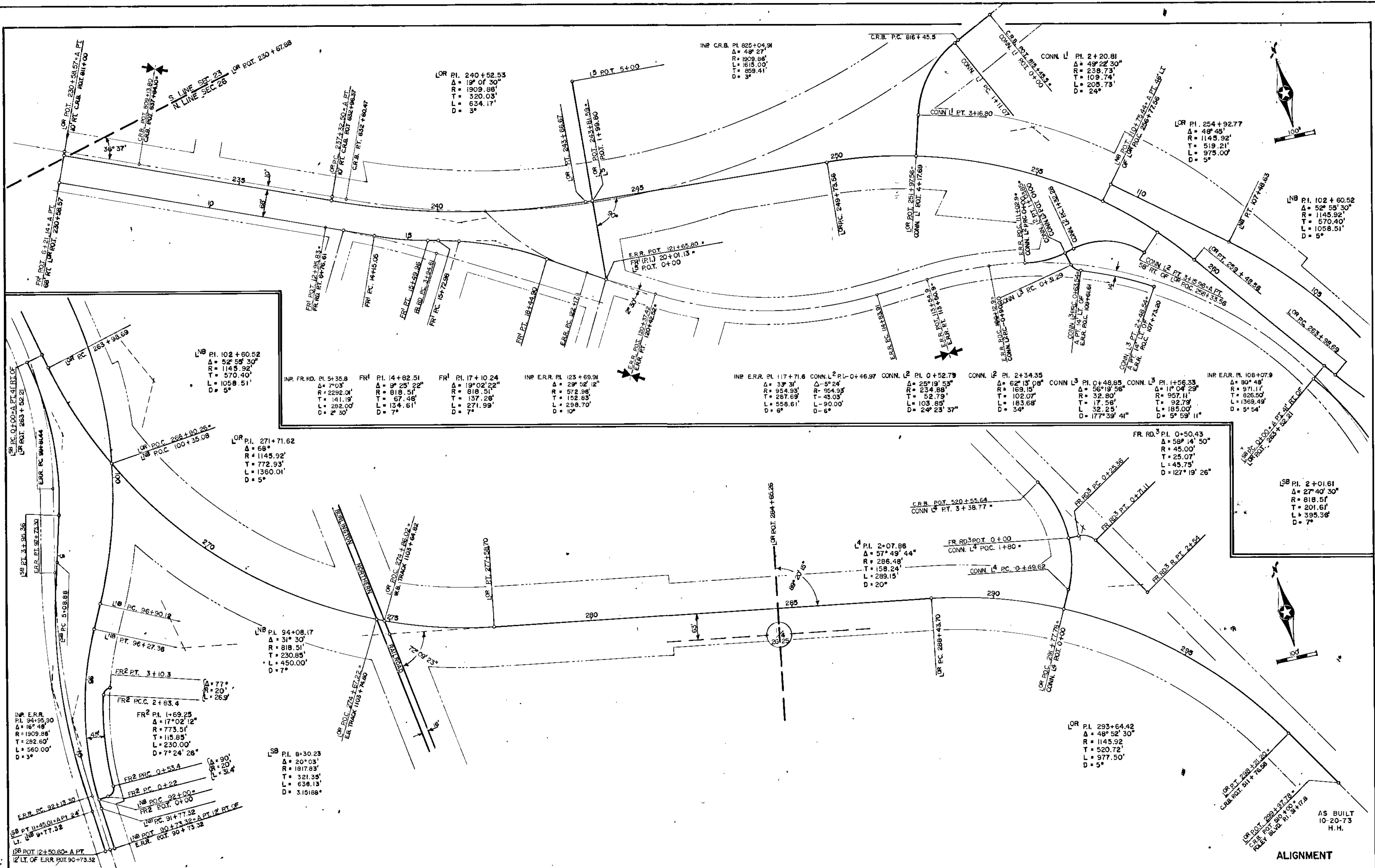
AS BUILT
 10-20-73
 H.M.



SUPERELEVATION CHART
 AXIS ROTATION AT CENTER LINE

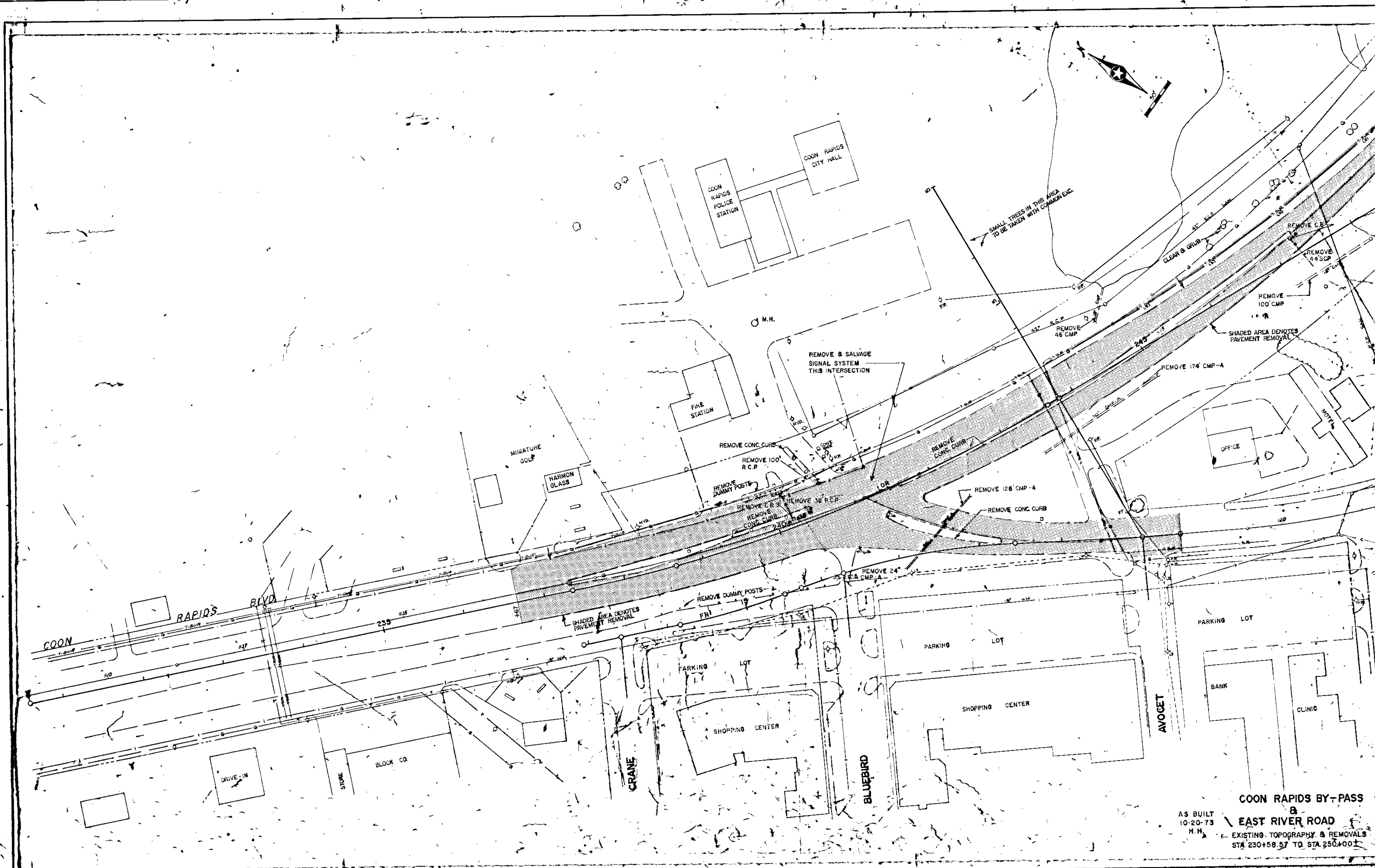
AS BUILT
 10-20-73
 H.H.





ALIGNMENT

AS BUILT
10-20-73
H.H.

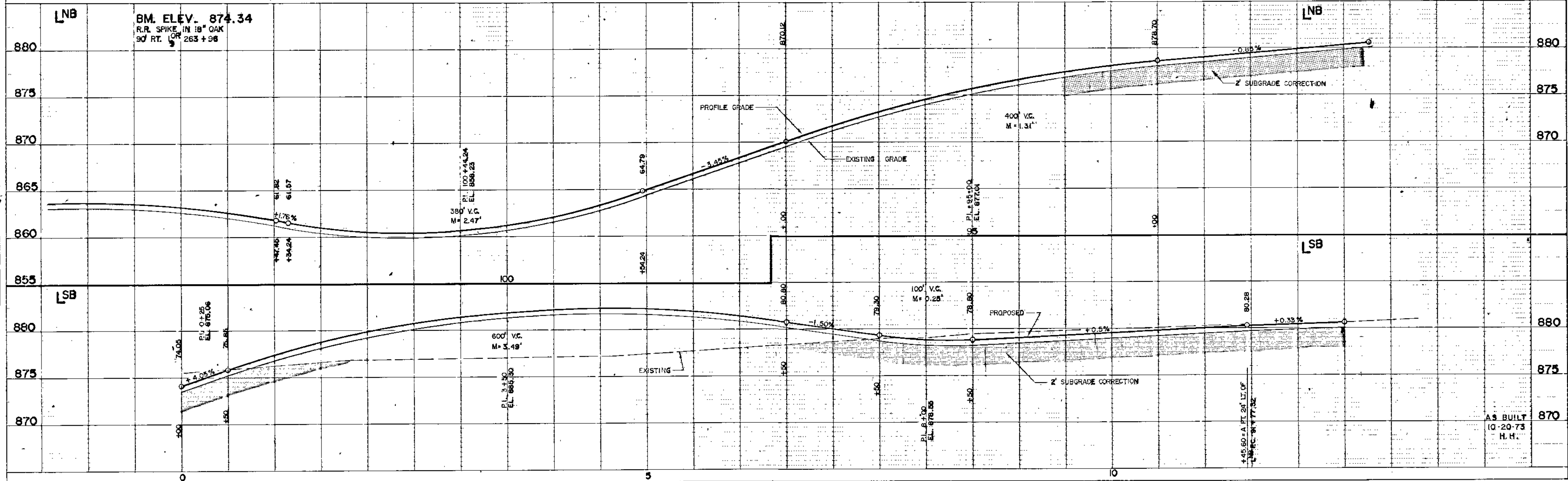
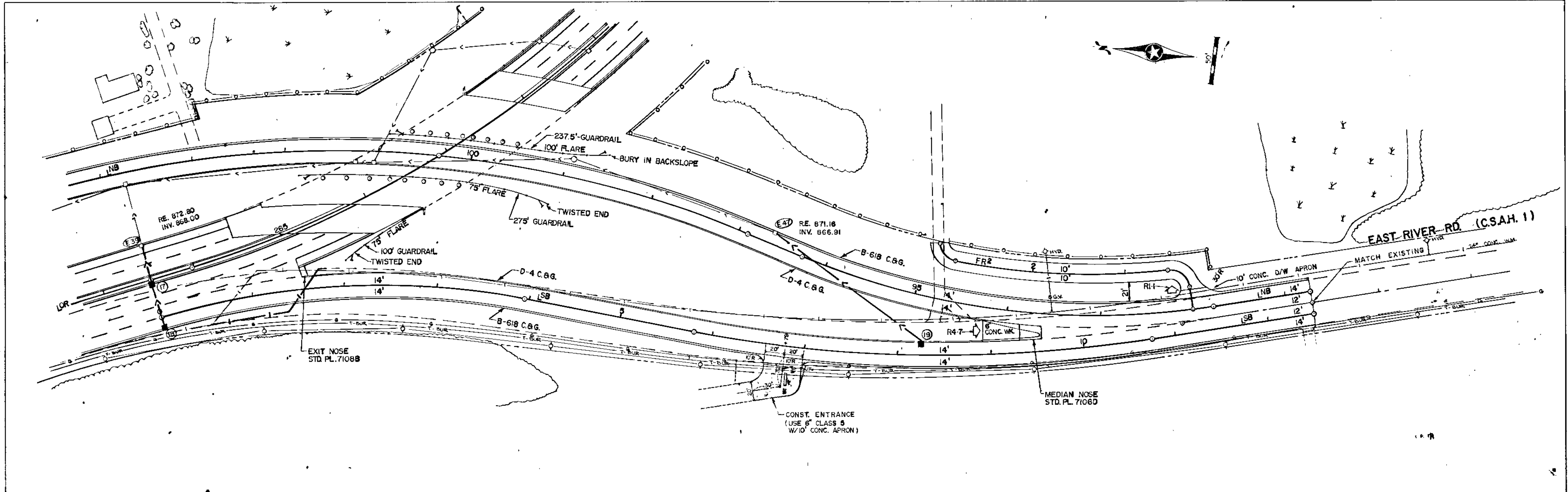


COON RAPIDS BY-PASS

AS BUILT
10-20-73
H.M.
EAST RIVER ROAD
EXISTING TOPOGRAPHY & REMOVALS
STA 230+58.57 TO STA 250+00

PLAN
 DRAWN BY: []
 CHECKED BY: []
 DATE: []

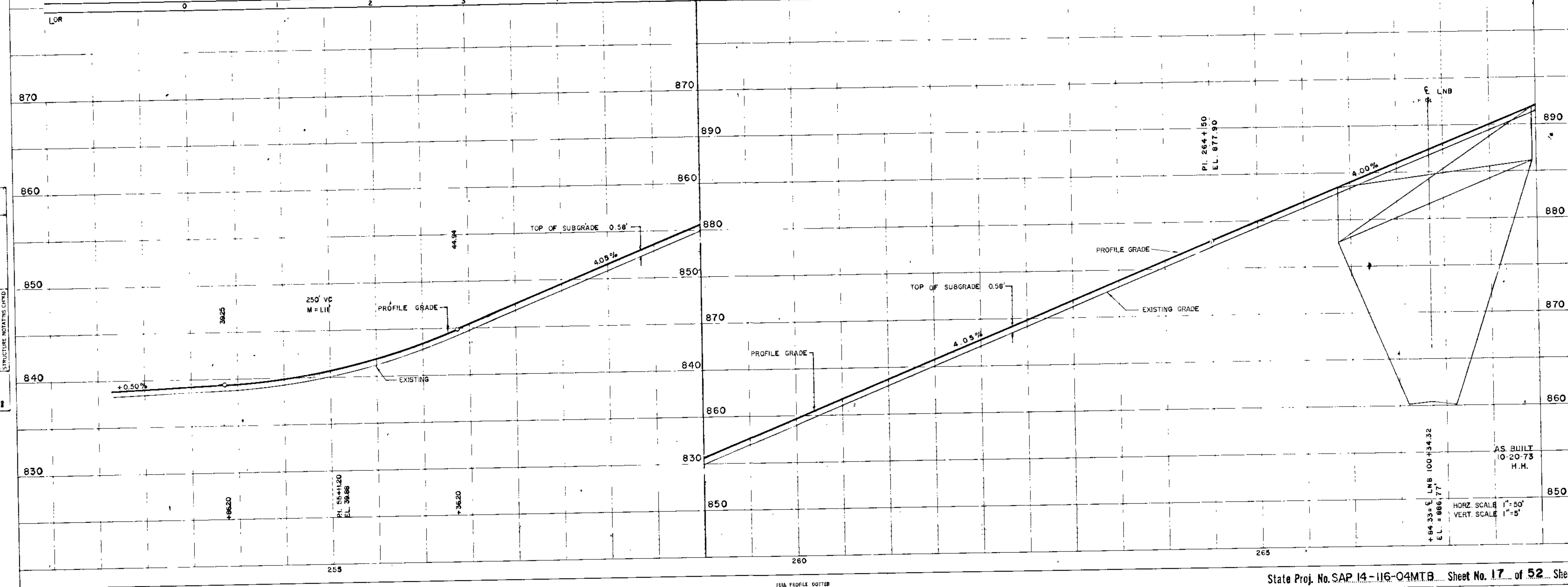
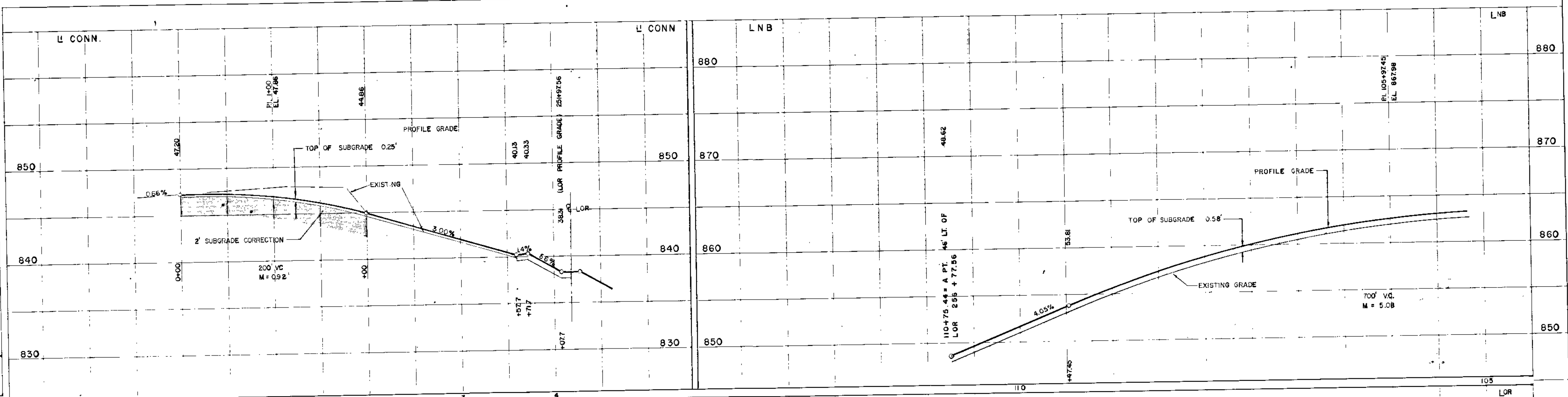
PROFILE
 DRAWN BY: []
 CHECKED BY: []
 DATE: []



SINGLE PLAN AND PROFILE - DOTTED
 H. A. ROGERS CO. MINNEAPOLIS - ST. PAUL

PLAN
 SURVEYED BY: []
 CHECKED BY: []
 DATE: []

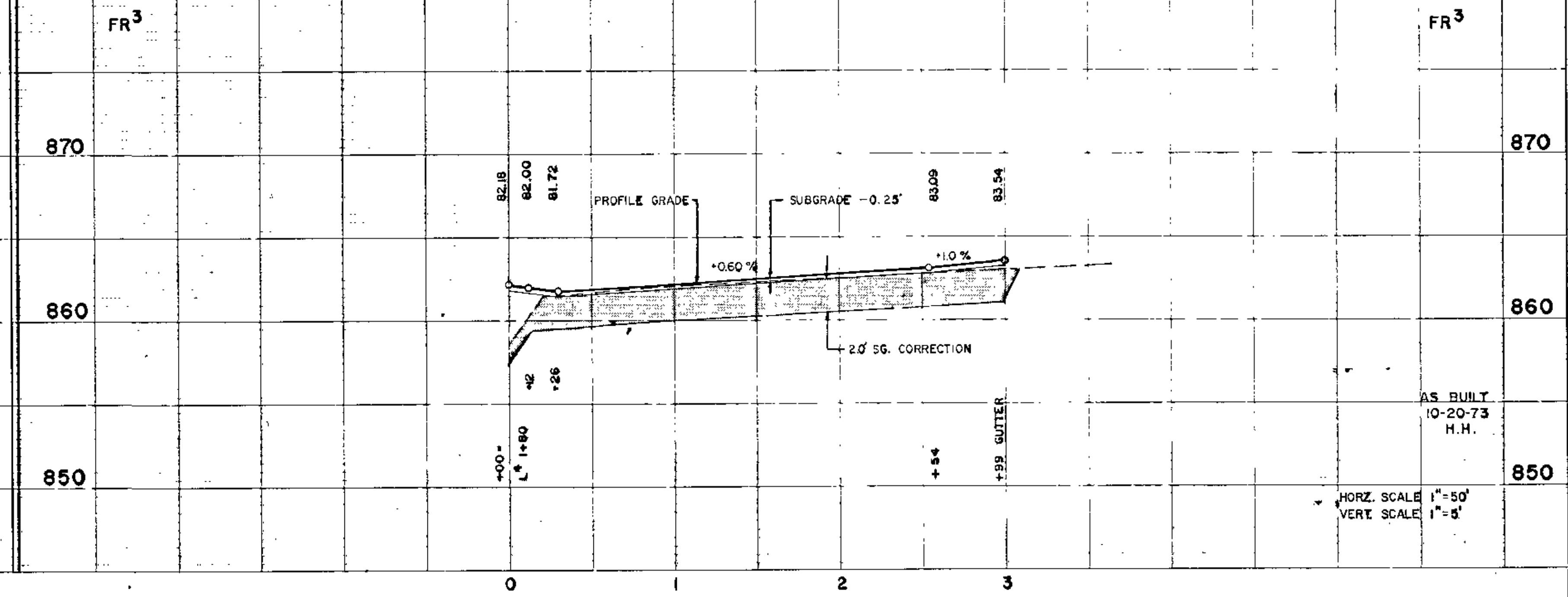
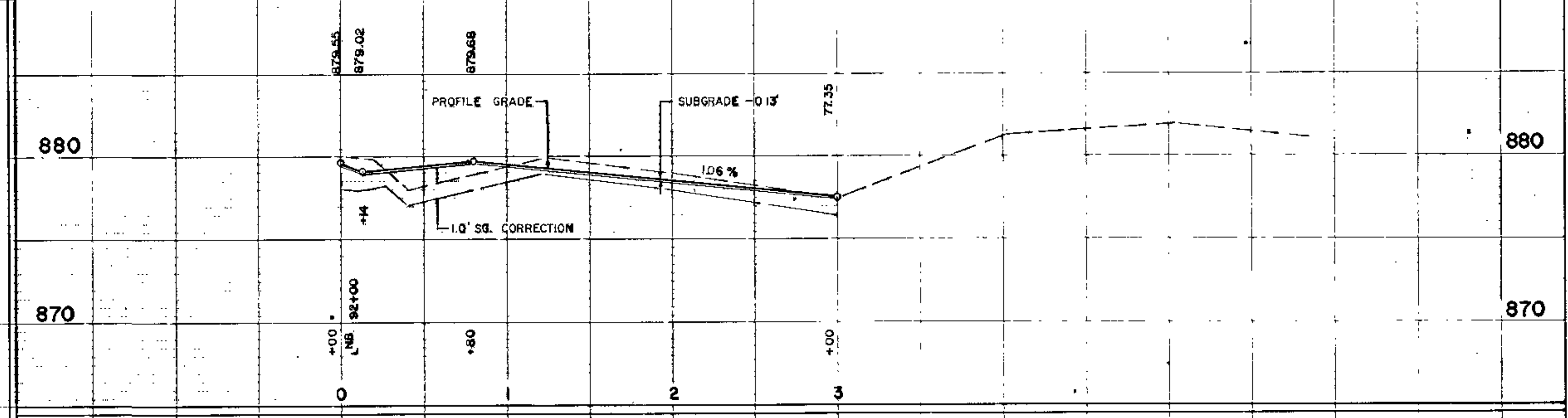
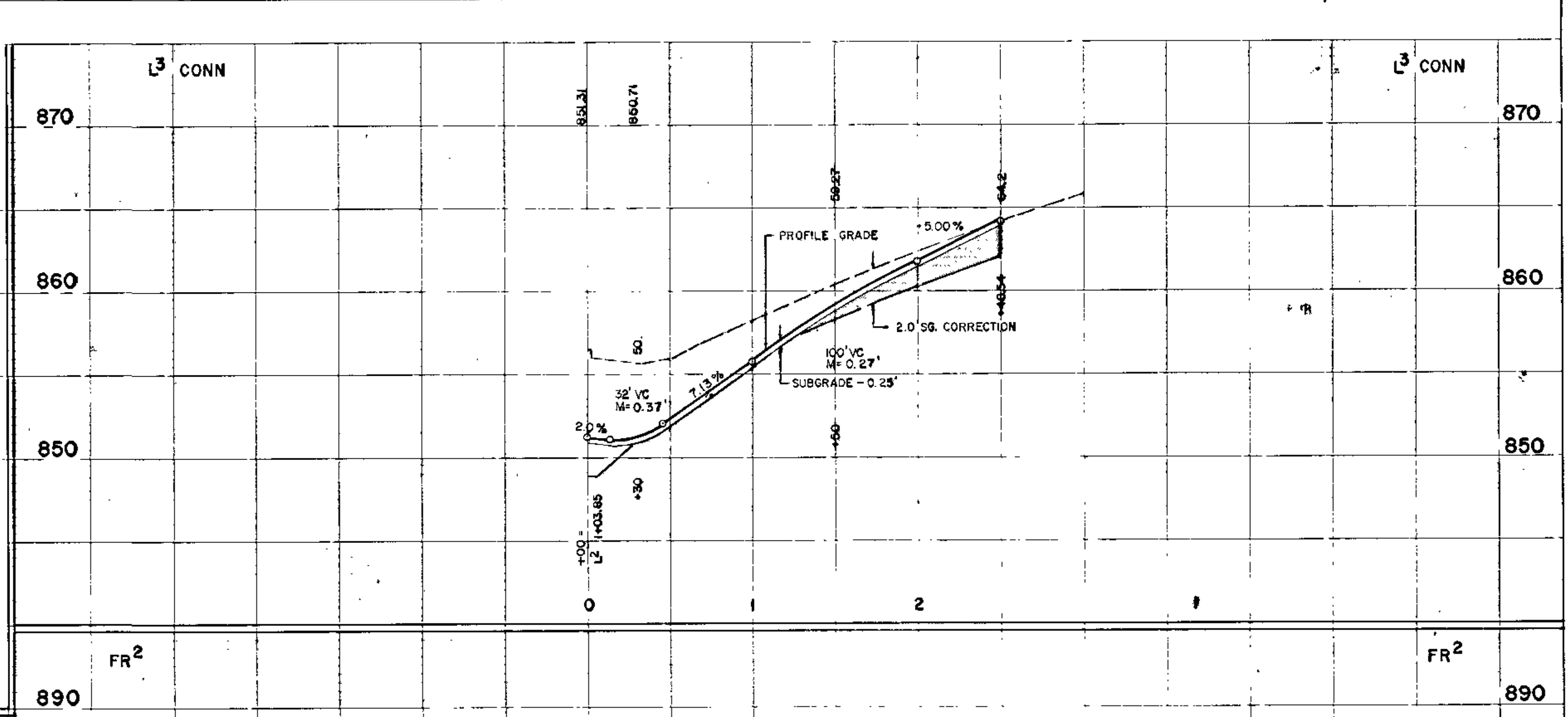
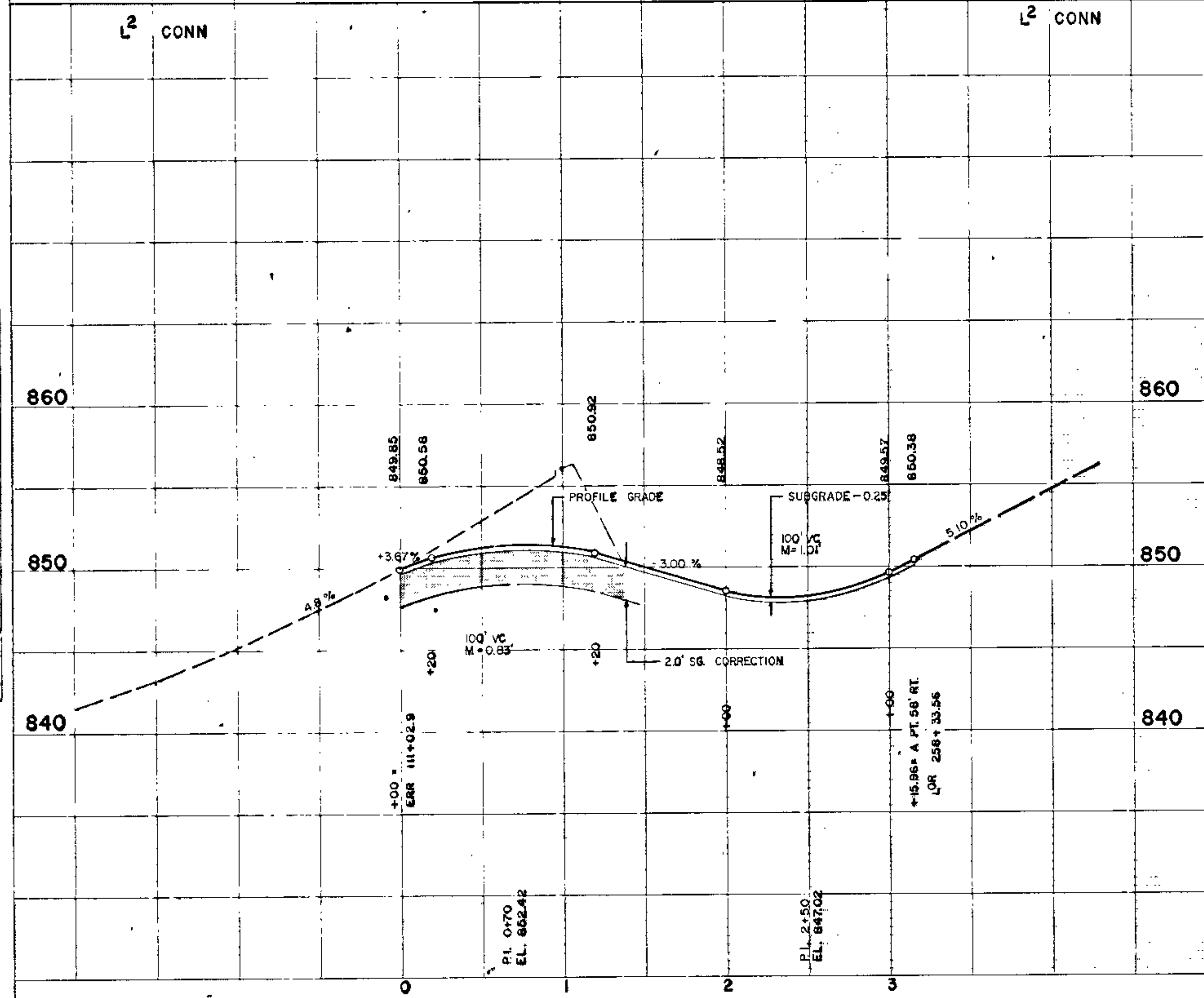
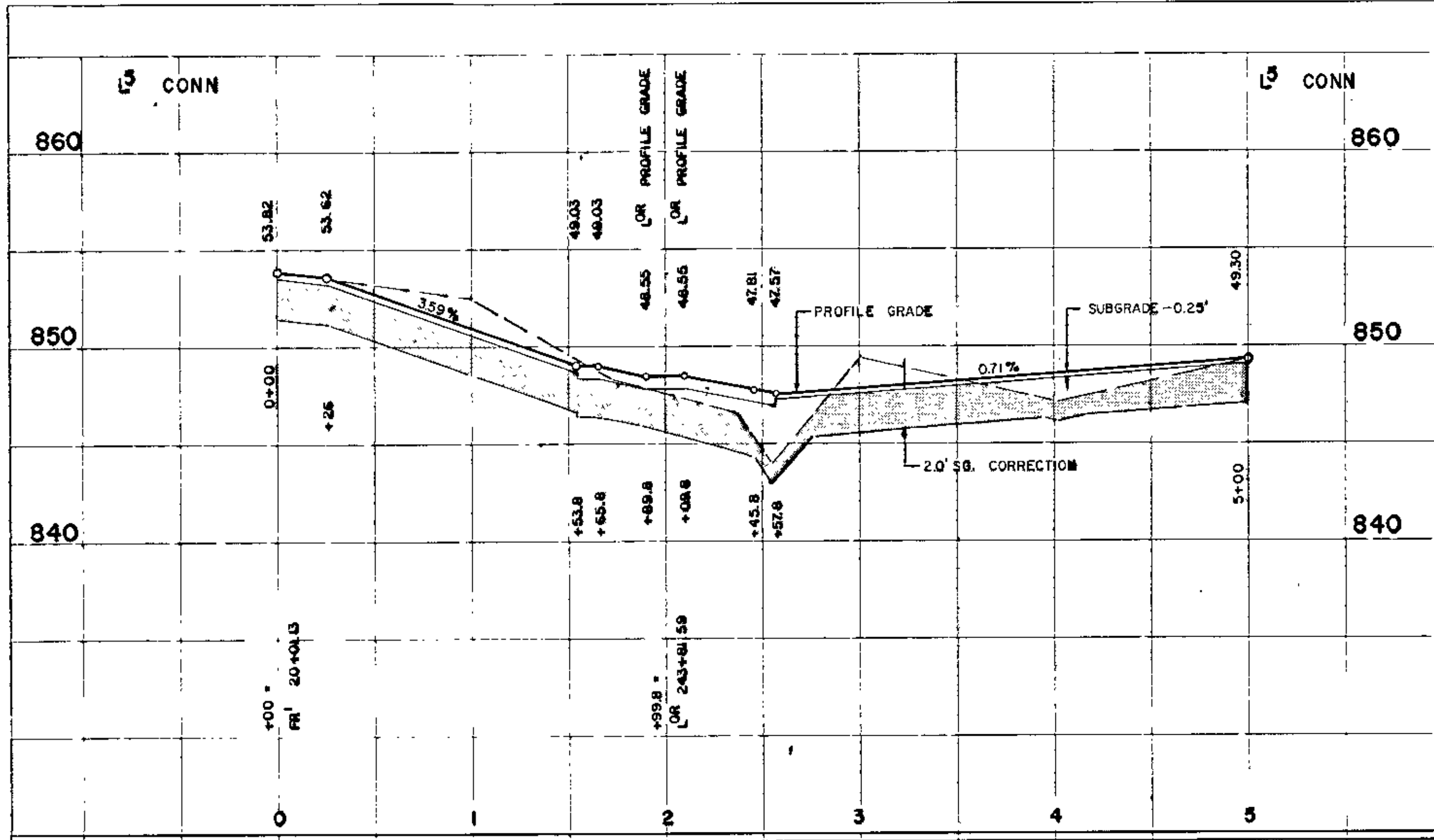
PROFILE
 SURVEYED BY: []
 CHECKED BY: []
 DATE: []



AS BUILT
 10-20-73
 H.H.
 HORZ. SCALE 1"=50'
 VERT. SCALE 1"=5'

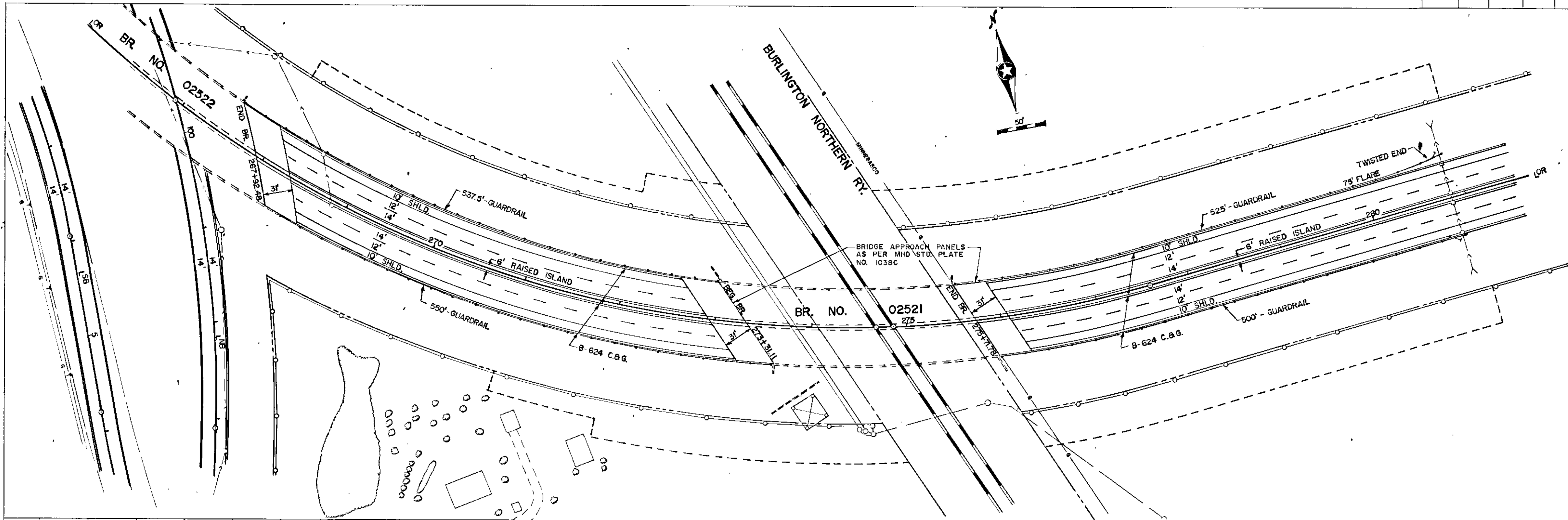
PLAN
 DATE: _____
 BY: _____
 CHECKED: _____
 APPROVED: _____
 NOTE BOOK NO. _____

PROFILE
 DATE: _____
 BY: _____
 CHECKED: _____
 APPROVED: _____
 NOTE BOOK NO. _____

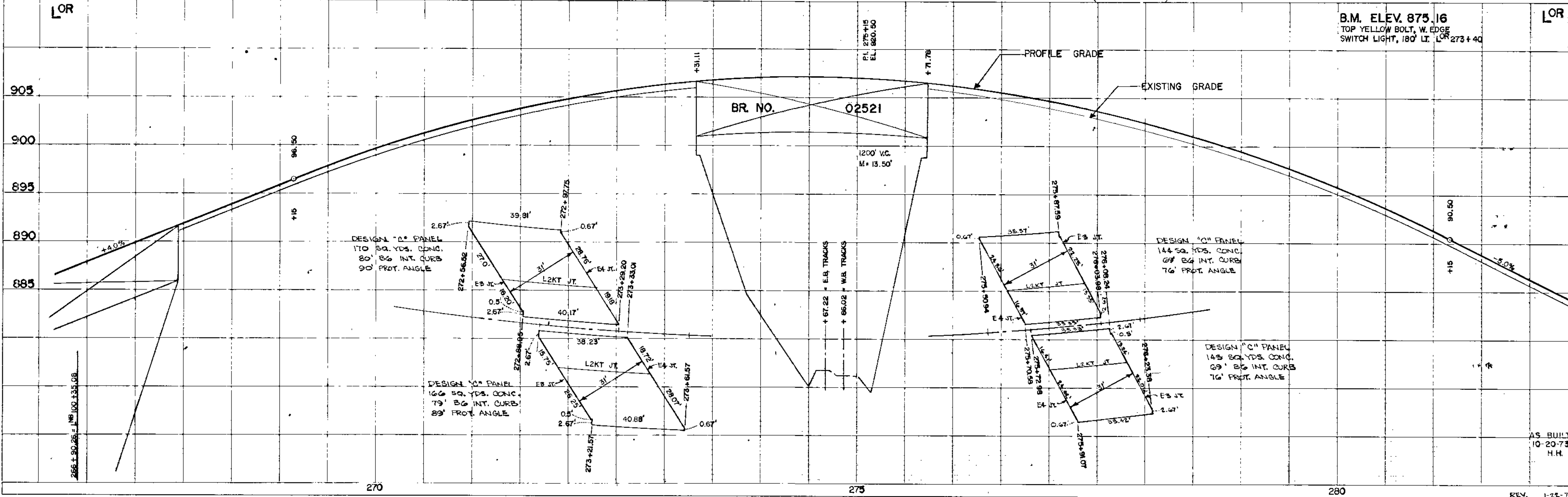


FULL PROFILE DOTTED
 H. A. ROGERS CO., MINNEAPOLIS, ST. PAUL, DULUTH

PLAN
 CHECKED BY: _____
 PLOTTED BY: _____
 DATE: _____
 ALTERNATE CHECKED AT UP: _____
 DATE: _____



PROFILE
 CHECKED BY: _____
 PLOTTED BY: _____
 DATE: _____
 ALTERNATE CHECKED AT UP: _____
 DATE: _____

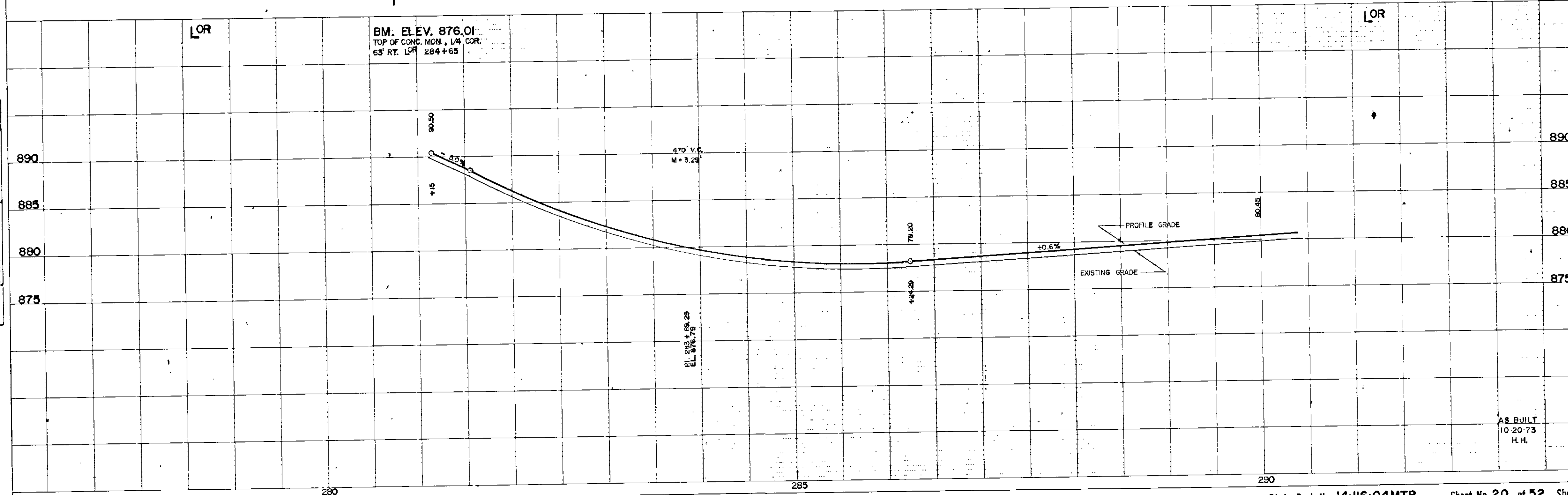
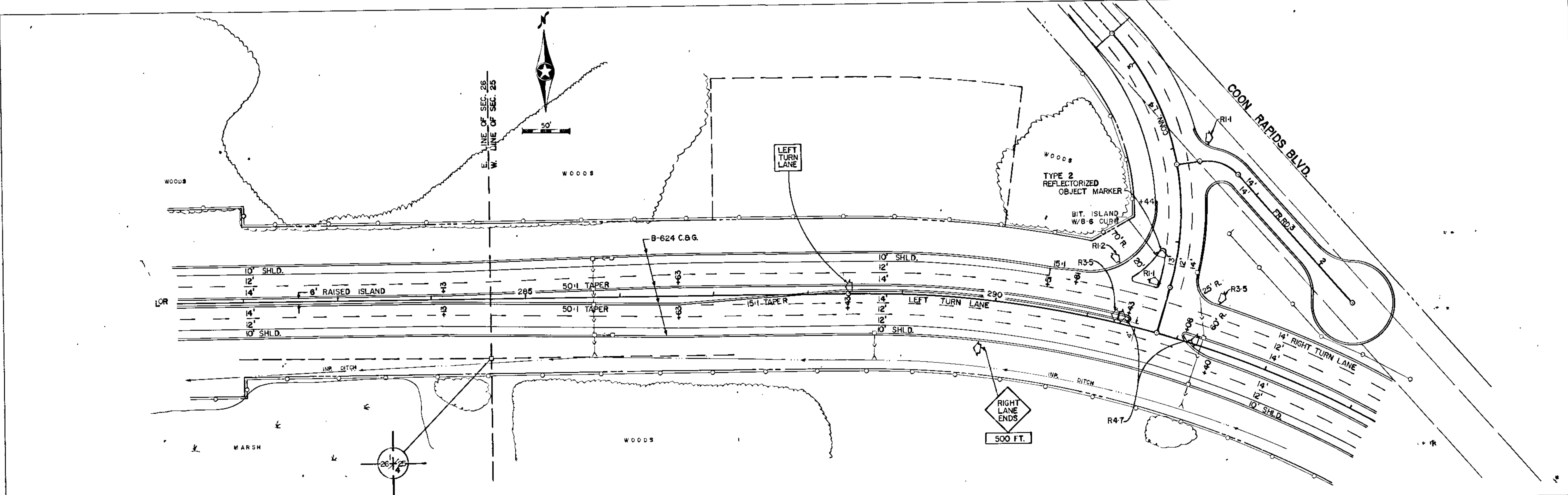


B.M. ELEV. 875.16
 TOP YELLOW BOLT, W. EDGE
 SWITCH LIGHT, 180' LT. LOR 273+40

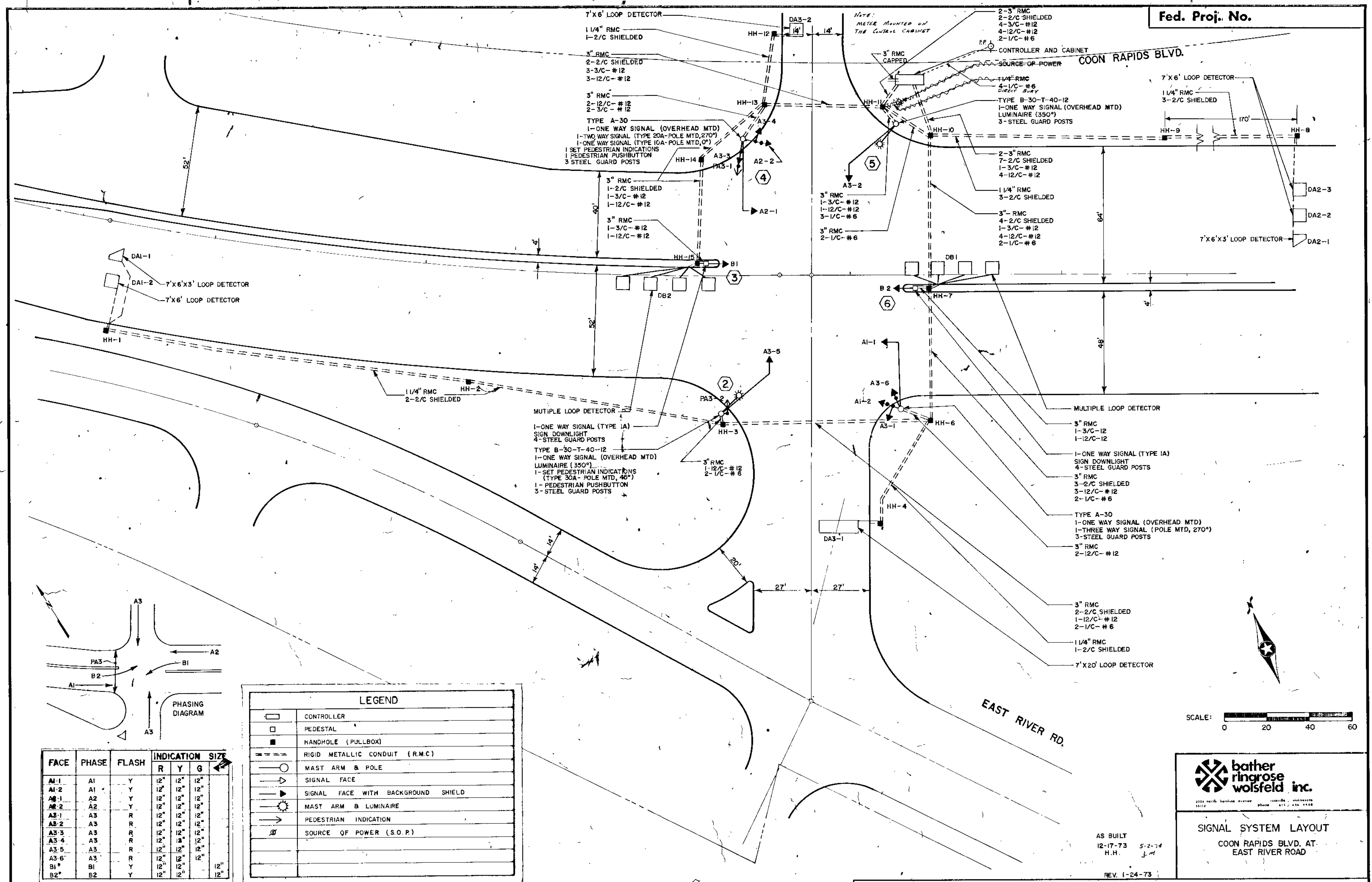
AS BUILT
 10-20-73
 H.H.

DATE: _____
 BY: _____
 CHECKED: _____
 DATE: _____
 PLAN

DATE: _____
 BY: _____
 CHECKED: _____
 DATE: _____
 PROFILE



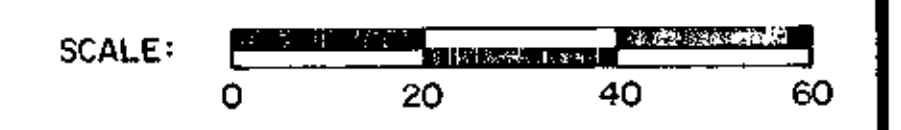
AS BUILT
 10-20-73
 H.H.



FACE	PHASE	FLASH	INDICATION SIZE		
			R	Y	G
A1-1	A1	Y	12"	12"	12"
A1-2	A1	Y	12"	12"	12"
A2-1	A2	Y	12"	12"	12"
A2-2	A2	Y	12"	12"	12"
A3-1	A3	R	12"	12"	12"
A3-2	A3	R	12"	12"	12"
A3-3	A3	R	12"	12"	12"
A3-4	A3	R	12"	12"	12"
A3-5	A3	R	12"	12"	12"
A3-6	A3	R	12"	12"	12"
B1*	B1	Y	12"	12"	12"
B2*	B2	Y	12"	12"	12"

* OPTICALLY PROGRAMMED SIGNAL FACE

LEGEND	
	CONTROLLER
	PEDESTAL
	HANDHOLE (PULLBOX)
	RIGID METALLIC CONDUIT (R.M.C.)
	MAST ARM & POLE
	SIGNAL FACE
	SIGNAL FACE WITH BACKGROUND SHIELD
	MAST ARM & LUMINAIRE
	PEDESTRIAN INDICATION
	SOURCE OF POWER (S.O.P.)

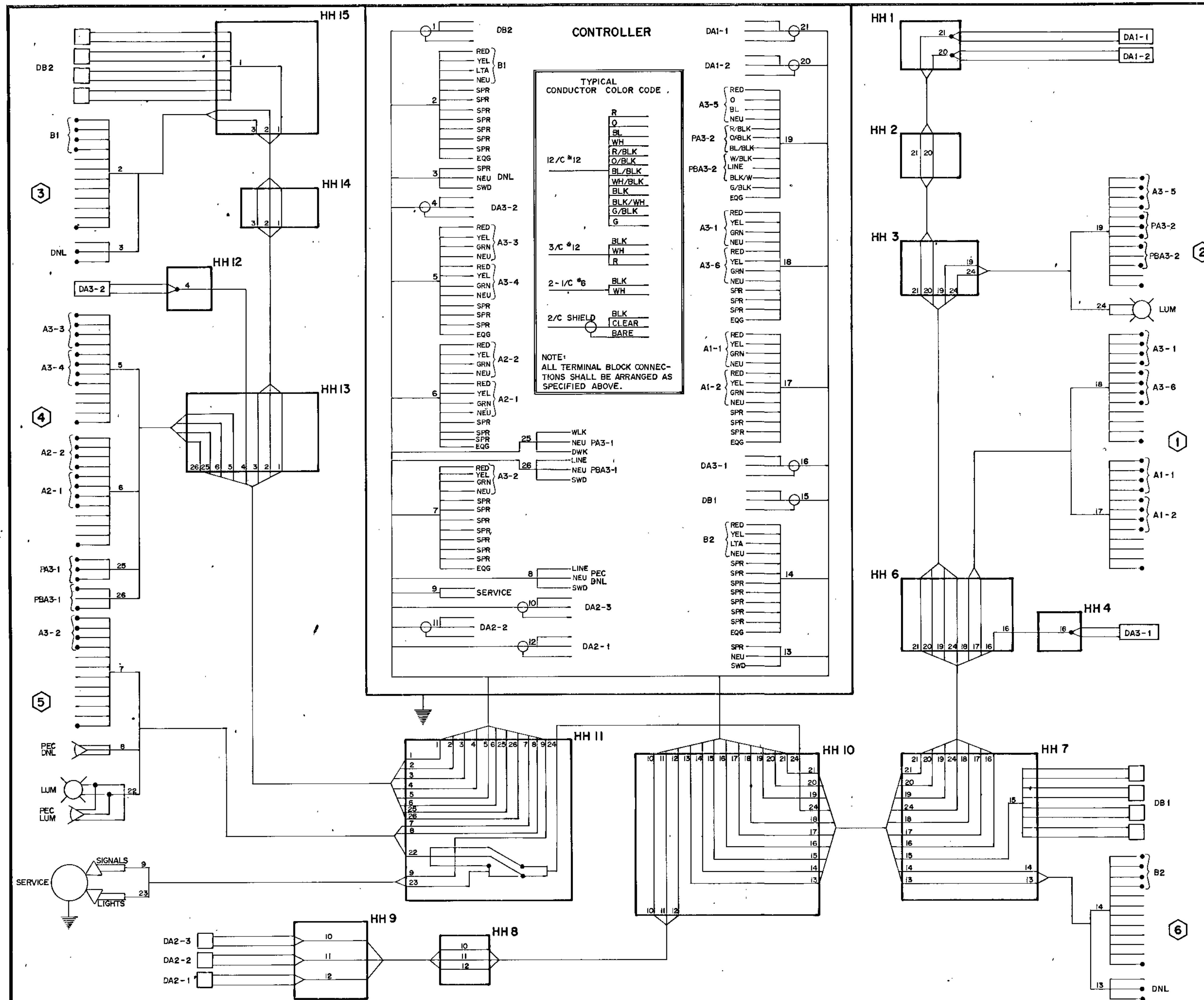


bather ringrose wolsfeld inc.
 2222 north hennepin avenue phone 612 / 436-9999
 55112

SIGNAL SYSTEM LAYOUT
 COON RAPIDS BLVD. AT
 EAST RIVER ROAD

AS BUILT
 12-17-73
 H.H. 5-2-74
 J.M.

REV. 1-24-73



- NOTES:
1. Terminate the white conductor of 3 conductor cables serving detectors, in the last handhole. Make splices of detector conductors to 3 conductor cables in handholes.
 2. Provide terminal strips in the base of all standards with terminals for all conductors in standard with exception of conductors for street lights.
 3. No splices are to be made in handholes except for detector connections and street light circuits.
 4. Provide in-line fuses in base of each standard for street lights.
 5. Ground conductors are not shown. Install grounding as specified.

EQUIPMENT AND INDICATIONS	
RED-RED	B3(eg)- SIGNAL HEAD-PHASE "B"
YEL-YELLOW	DA-4(eg)- DETECTOR-PHASE "A"
GRN-GREEN	HH- HANDHOLE
LTA- LEFT TURN ARROW	GR- GROUND ROD
RTA- RIGHT TURN ARROW	SERV- SERVICE
WLK- WALK	ST LHT- STREET LIGHT
NEU- NEUTRAL	SOP- SOURCE OF POWER
DWK- DON'T WALK	SPR- SPARE CONDUCTOR
LUM- LUMINAIRE	• SPLICE
SWD- SWITCHED	PEC- PHOTOELECTRIC CELL
DNL- DOWNLIGHT	EGG- EQUIPMENT GROUND

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

AS BUILT
12-17-73
H.H.

SIGNAL WIRING DIAGRAM
COON RAPIDS BLVD. / EAST RIVER ROAD
REV. 1-24-73