

# STATE OF OHIO DEPARTMENT OF HIGHWAYS DELAWARE LONDON ROAD.

S.H. 241 SEC. C (PT.), B, & A.  
MADISON & UNION COUNTIES  
DEER CREEK, JEFFERSON, CANAAN, DARBY &  
JEROME TWPS.

FED. RD. DIST. NO.	STATE	PROJECT	FISCAL YEAR
10	OHIO		1945



MADISON & UNION COUNTIES  
S.H. 241 SEC. C (pt.), B & A.

### LINE DATA

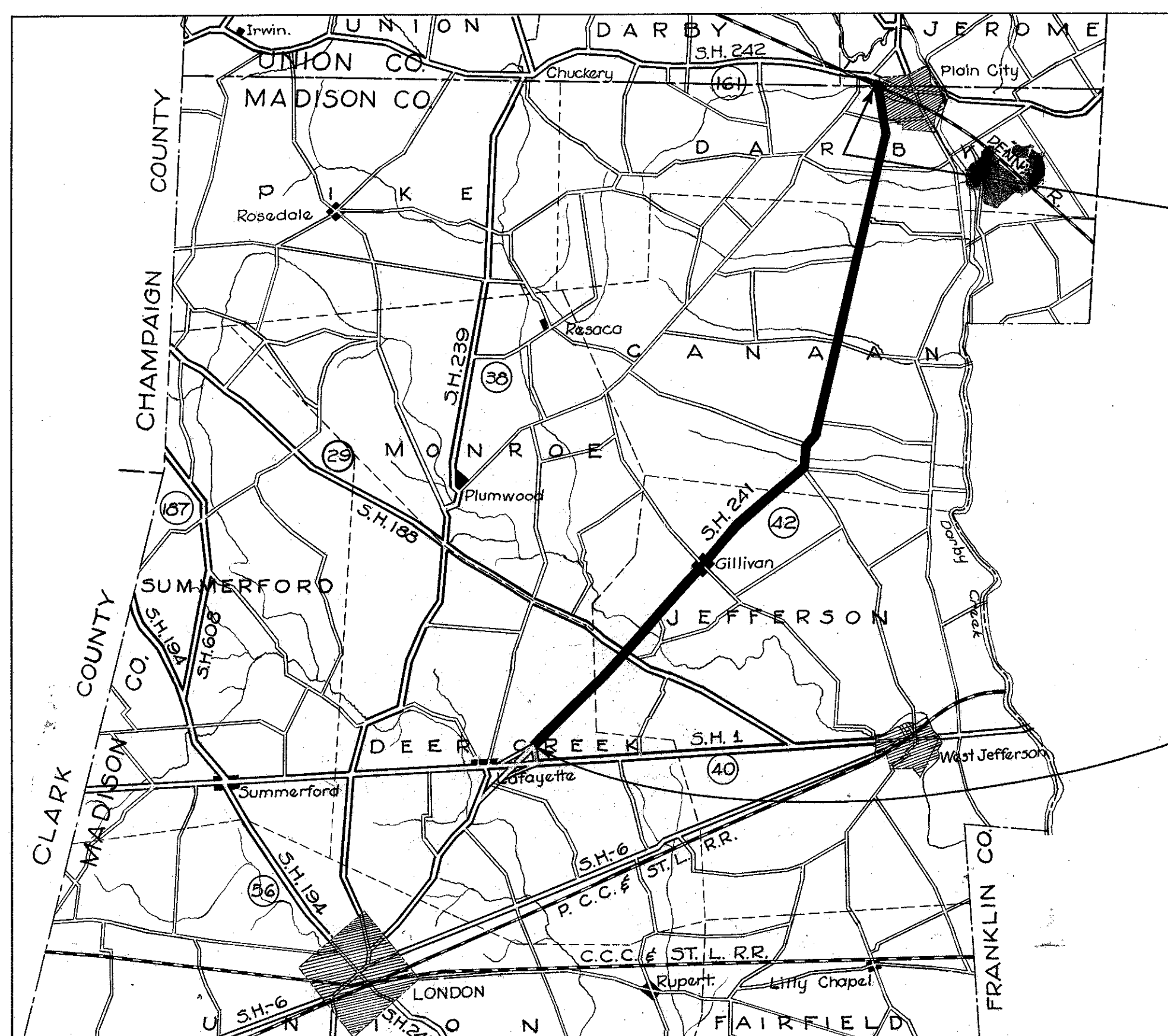
BEGIN PROJECT - STATION 13+64.97  
 END PROJECT - STATION 731+48.5  
 GROSS LENGTH - 71283.53 LIN. FT.  
 NO ADDITIONS  
 DEDUCTION FOR STATION EQUATION  
 STA. 405+75.5 BACK - STA. 405+87.7 AHEAD = 12.2 LIN. FT.  
 STA. 693+10.21 BACK - STA. 693+10.81 AHEAD = 0.57 LIN. FT.  
 STA. 727+54.52 to STA. 727+98.47 R.R. CROSSING = 43.95 LIN. FT.  
 TOTAL DEDUCTIONS 56.72 LIN. FT.  
 NET LENGTH OF PROJECT 71226.81 LIN. FT. OR 13.489 MI.  
 APPROACH - STA. 0+81 TO STA. 13+20.53 = 1239.53 LIN. FT.  
 NET LENGTH OF WORK 72466.34 LIN. FT. OR 13.724 MI.

### CONVENTIONAL SIGNS

STATE LINE \_\_\_\_\_  
 COUNTY LINE \_\_\_\_\_  
 TOWNSHIP LINE \_\_\_\_\_  
 SECTION LINE \_\_\_\_\_  
 CENTER LINE \_\_\_\_\_ 30 40  
 PROPERTY LINE \_\_\_\_\_ P  
 CITY OR VILLAGE LINE \_\_\_\_\_  
 FENCE LINE \_\_\_\_\_ x x  
 STEAM RAILROAD \_\_\_\_\_  
 POLE LINE. \_\_\_\_\_ P P P P P

### INDEX OF SHEETS

TITLE SHEET 1  
 TYPICAL SECTION 2  
 PLAN & PROFILE 3-8  
 SUMMARY 9



END PROJECT  
STA. 731+48.5

BEGIN PROJECT  
STA. 13+64.97

The Standard Specifications of the State of Ohio, Department of Highways including changes and Supplemental Specifications listed in the proposal shall govern this improvement.

The right of way necessary for this improvement will be provided by the State of Ohio.

I hereby approve these plans and declare that the making of this improvement will not require the closing of the highway to traffic.

File  
D-3

APPROVED: *[Signature]*  
 DATE: 2-24-45 RESIDENT DIVISION DEPUTY DIRECTOR.  
 APPROVED: \_\_\_\_\_  
 DATE: \_\_\_\_\_ CHIEF ENGR. BUREAU OF MAINTENANCE.  
 APPROVED: \_\_\_\_\_  
 DATE: \_\_\_\_\_ CHIEF ENGR. BUREAU OF BRIDGES & R.R. CROSSINGS.  
 APPROVED: *[Signature]*  
 DATE: 3-12-45 CHIEF ENGR. BUREAU OF LOCATION & RIGHT OF WAY.  
 APPROVED: *[Signature]* P.S. 547  
 DATE: 3-13-46 FIRST ASST. DIRECTOR & CHIEF ENGINEER.  
 APPROVED: *[Signature]*  
 DATE: 3-13-46 DIRECTOR OF HIGHWAYS.

CONSTRUCTION  
BUREAU  
MAY 7 1956  
GROUND PHOTOLAB

LOCATION MAP  
SCALE IN MILES  
0 1 2 3 4 5 6

PORTION TO BE IMPROVED  
 STATE HIGHWAYS \_\_\_\_\_  
 COUNTY HIGHWAYS \_\_\_\_\_  
 PLAN 1" = 500'  
 PROFILE VERTICAL 1" = 50'  
 PROFILE HORIZONTAL 1" = 500'

SUPPLEMENTAL SPECIFICATIONS	
I-117	1-15-44

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWING	
G-7.07	6-1-42

File No	MADISON & UNION COUNTY S.H. 241 SEC. C (PT.), B & A
N#	DATE OF LETTING _____
	CONTRACT N# _____

# TYPICAL SECTION

## TYPE T-35

- GENERAL NOTES -

**TRAFFIC.**— Traffic shall be maintained at all times. The length of one way traffic zones shall be kept to a minimum consistent with the requirements of Sec. T-35.23.

In addition to the requirements of Sec. G-707, Barricades, Danger and Warning Signs, the Contractor shall display one "PLEASE-MEN WORKING ON ROAD" sign furnished by the State at each end of each one way zone and in such a position as to be visible to traffic approaching the one way zone.

The Contractor shall be responsible for the preservation of these signs, shall advance the signs as work progresses and shall return the signs to the State at the completion of the work.

The item of "Maintaining Traffic" shall include furnishing lights, signs, (other than those mentioned above) barricades and watchmen, plus the displaying and advancing of the "PLEASE-MEN WORKING ON ROAD" signs to secure the flow of traffic twenty-four (24) hours daily.

**PROFILE:**—

The profile of the proposed surface course shall be approximately 2 3/4 inches above that of the existing pavement.

**EARTHWORK:**—

Watering embankments, benching, density requirements and the removal of sod from the shoulder will not be required for roadway sections to be widened. However, Item E-1 and Item E-4 shall include the thorough compaction of embankment in layers not exceeding eight inches compacted thickness, and shall include any operations of grading necessary to finish the shoulders and slopes substantially to the lines indicated on the typical sections. The provisions of Section E-1.12 will be waived providing lines of berms and slopes have been finished in a uniform, slightly condition. No provisions of the specifications will be waived for embankment which supports any portion of the new pavement or forms.

**PRIME COAT INCLUDING SAND COVER:**—

Bituminous Prime Coat, Section M-5.5 MS-1 shall be applied by distributor or by brooms at the rate of 0.10 gal. per square yard. After the bituminous material has been applied, all material not required to give a uniform coating to the surface shall be swept into all cracks and open joints before the sand cover is placed. Sand cover shall be uniformly spread at a rate of from 2 to 5 pounds per square yard. The sand shall be spread at such time and shall be in such condition that it will adhere to the bituminous material. Payment for sand cover is included in the price bid per gallon for bituminous material.

**FILLING MAJOR DEPRESSIONS:**—

Major depressions in existing pavement shall be filled and compacted with bituminous concrete leveling material in advance of placing the regular leveling course. These depressions shall be filled in layers not to exceed 3 inches in depth when compacted.

**SEALING EXISTING EDGES:**—

Vertical faces of existing work, such as castings, curbs, etc. against which the new bituminous concrete is to be placed, shall be painted or sealed with bituminous material in accordance with Section E-10.02. The cost of such operations and material shall be included in the price bid for bituminous concrete.

**RAILROAD CROSSING:**—

The new surface course shall be feathered to meet the rail grades if necessary. The feathering shall be determined by the Engineer on the basis of incidental construction items.

**TREATMENT OF FEATHERED AREA:**—

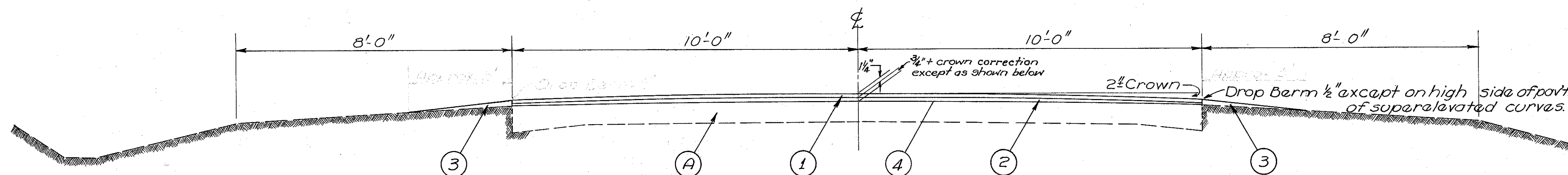
Where directed the new surface course shall be feathered. The area upon which less than one (1) inch of surface course is to be placed shall be considered as the area to be feathered. A paint coat of the same bituminous material used in the mix shall be applied to this area, before placing the bituminous concrete surface course. The cost of such operation and material shall be included in the unit price bid for bituminous concrete.

**BITUMINOUS CONCRETE BASE COURSE:**—

Base course may be constructed of Type "A" surface course composition.

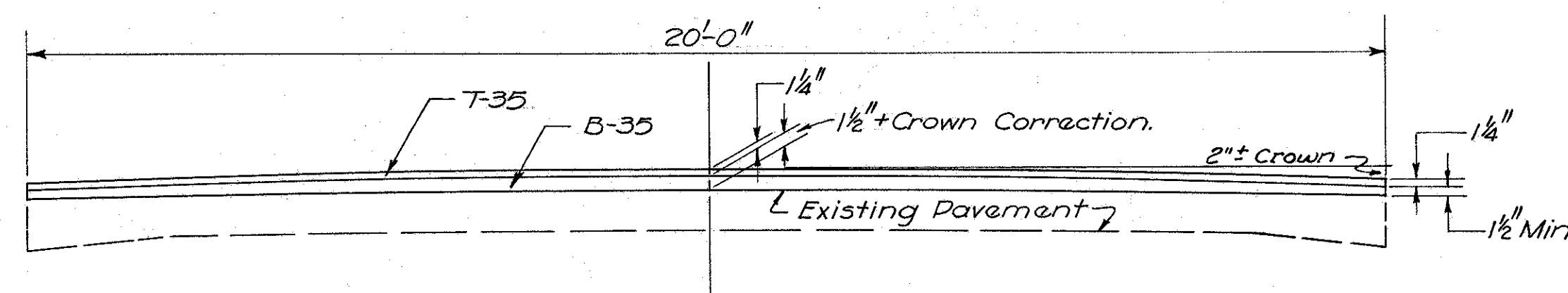
**GUTTER SEAL:**—

After placing and compacting the bituminous concrete surface course, the gutter surface shall be sealed with the same bituminous material contained in the mixture. Only enough material shall be applied to coat the surface for a distance of 15 inches from the curb or 24 inches wide for a "Y" gutter. The material shall be applied by an approved method at a temperature of from 300 deg. F. to 360 deg. F. The cost of such operation and material shall be included in the price bid for bituminous concrete.



**LIMITING STATIONS**  
STA. 16+64.97 to STA. 731+465

- |   |  |            |
|---|--|------------|
| ① | 1 1/4" Asphaltic Concrete Surfacing Course Type A.             | Item T-35  |
| ② | 3/4" (Minimum Thickness) Asphaltic Concrete Leveling Course    | Item B-35  |
| ③ | Side Approaches and Berm Material                              | Item I-117 |
| ④ | Bituminous Prime Coat. Using M-5.5 MS-1 (Including Sand Cover) | Item T-30  |
| ⑤ | 2-3" Courses, Asphaltic Concrete Base Course.                  | Item B-35  |
| ⑥ | 1/4" Insulation Course.  |            |
| A | Existing 9"-7" T-9" Plain Concrete Pavement (1/4" ± Crown)     |            |



**COURSE DETAIL SHOWING  
EXTRA LEVELING MATERIAL.**

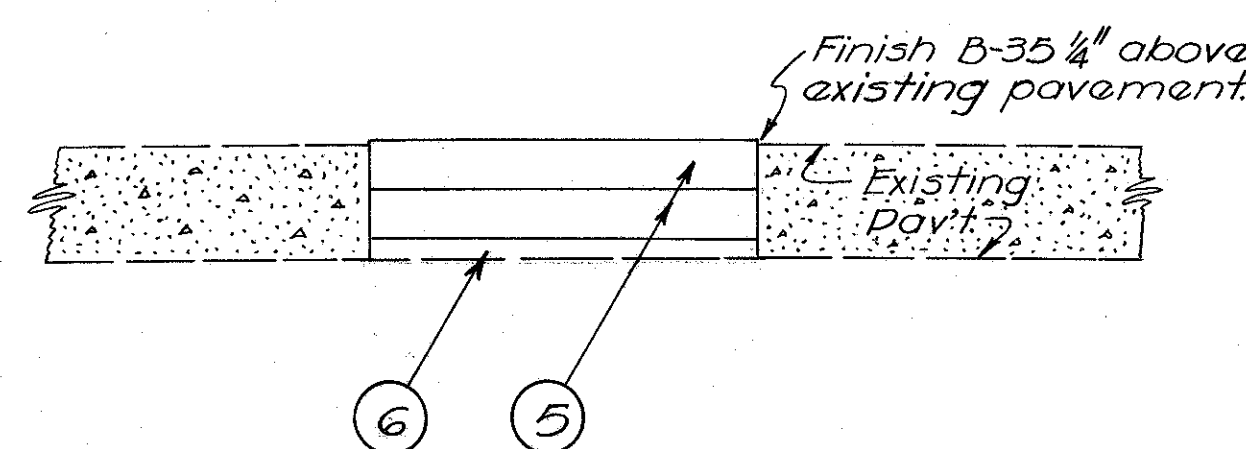
(For locations of Extra Leveling Material see Plan Sheets 3,4,5,6,7 & 8.  
(For Crown Correction Material see Sheet N° 9)

**GENERAL NOTES CON'T.**

**FORMS:**—

No edge forms will be required on this project and the following construction procedure shall be followed wherever the thickness of the new bituminous leveling material requires more than one course. Each course of the leveling material below the upper leveling course shall extend outside the edge of the existing pavement a distance equal to the vertical distance from the bottom of that course to the bottom of the upper leveling course.

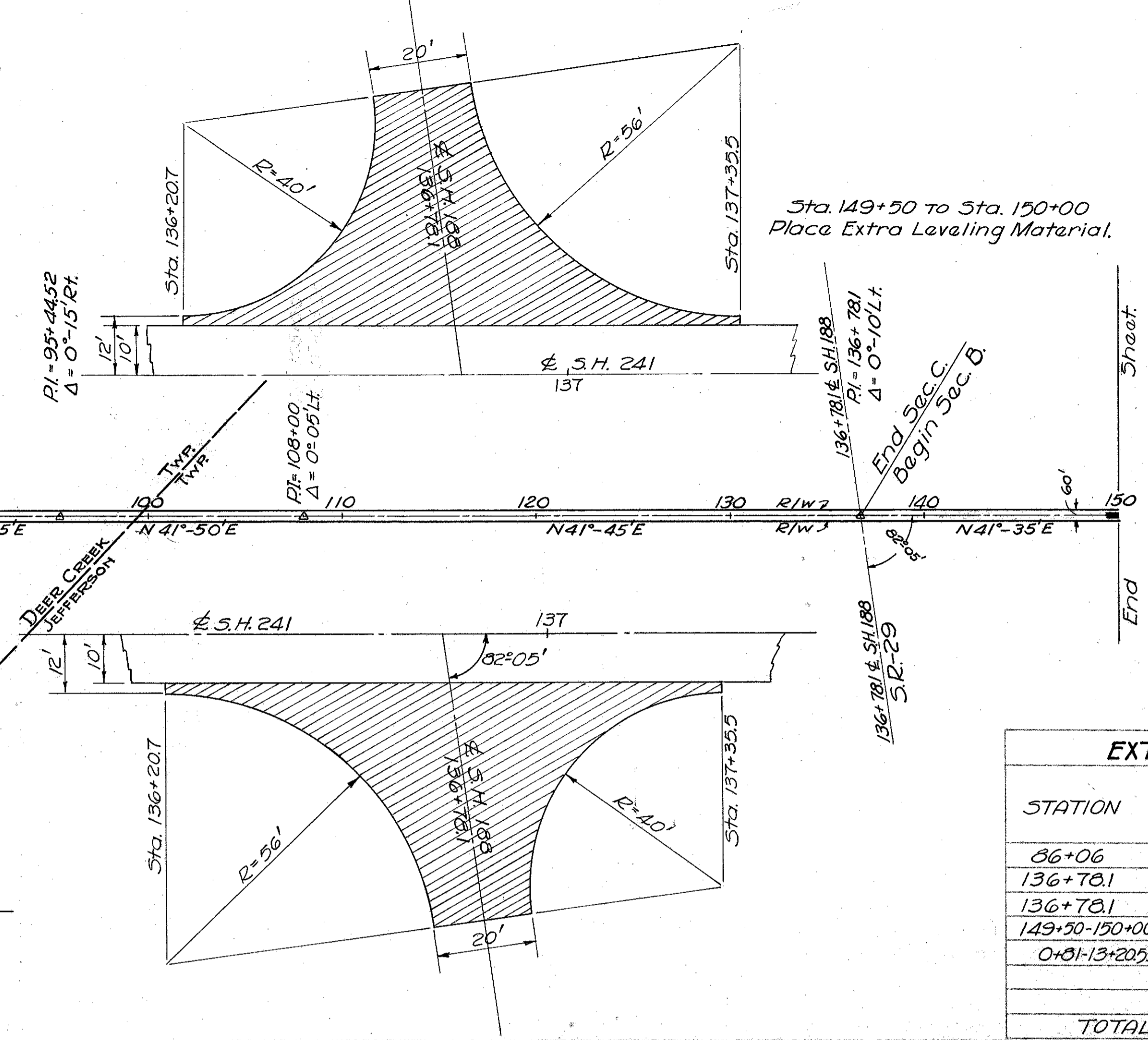
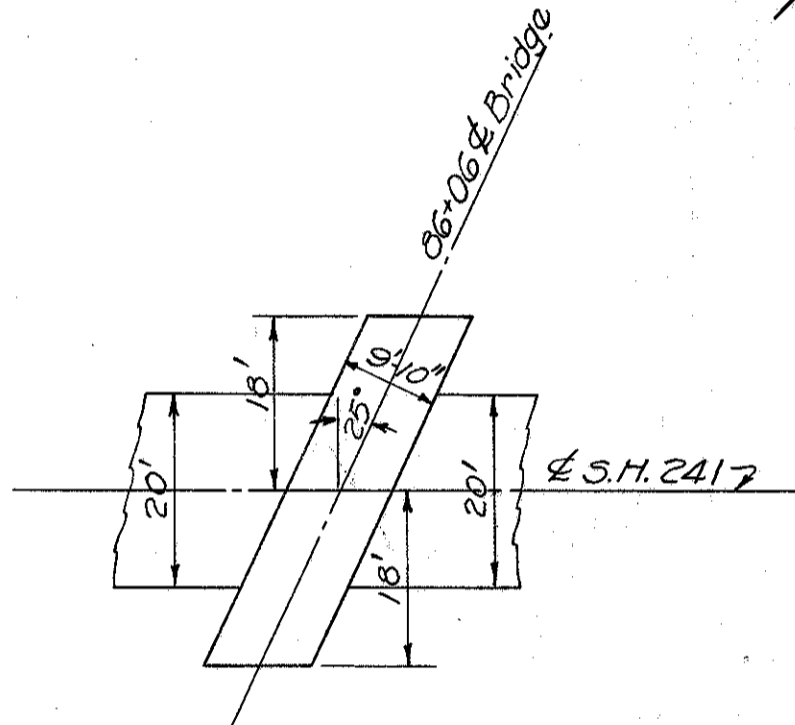
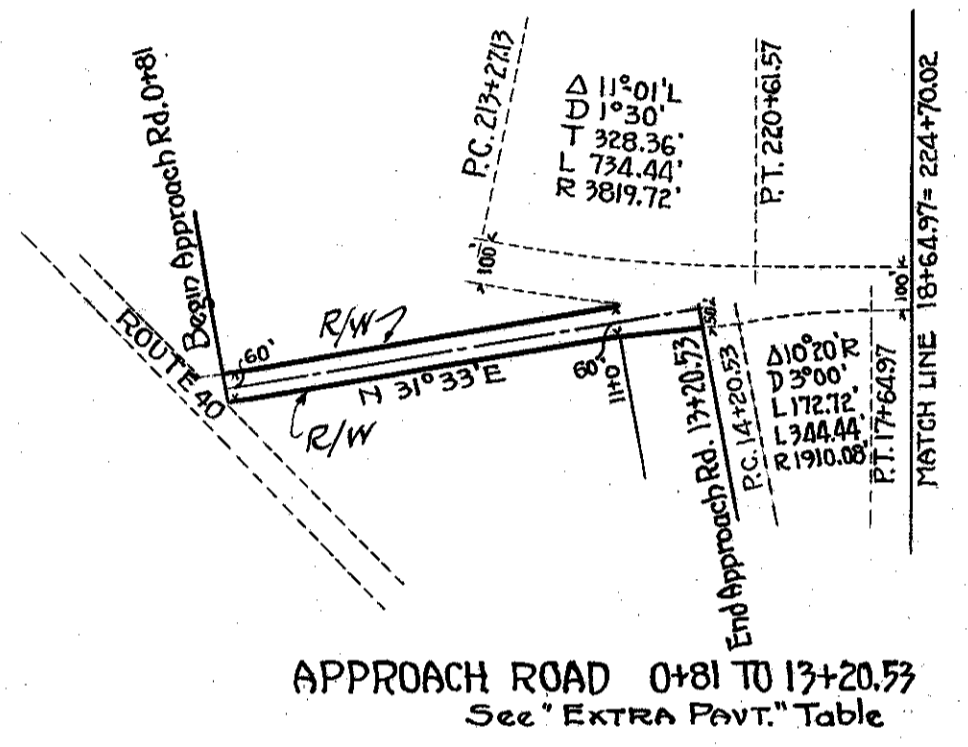
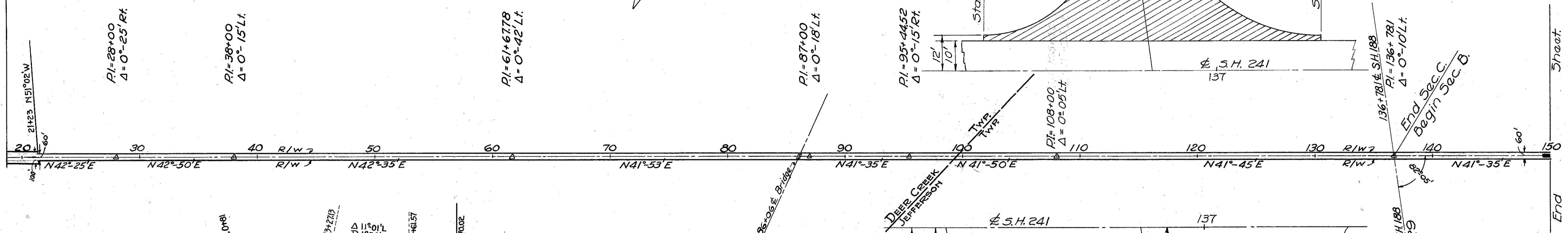
Prior to placing any leveling material outside the edge of the existing pavement, the area of the berm to be covered by the bituminous material shall be prepared in accordance with the requirements of the specifications and adjusted in elevation so that its surface when compacted will coincide with the plane of the existing pavement surface. Suitable borrow furnished and paid for under Item E-4 is provided for raising the berm to the required elevation.



**COURSE DETAIL FOR BASE REPLACEMENT.**

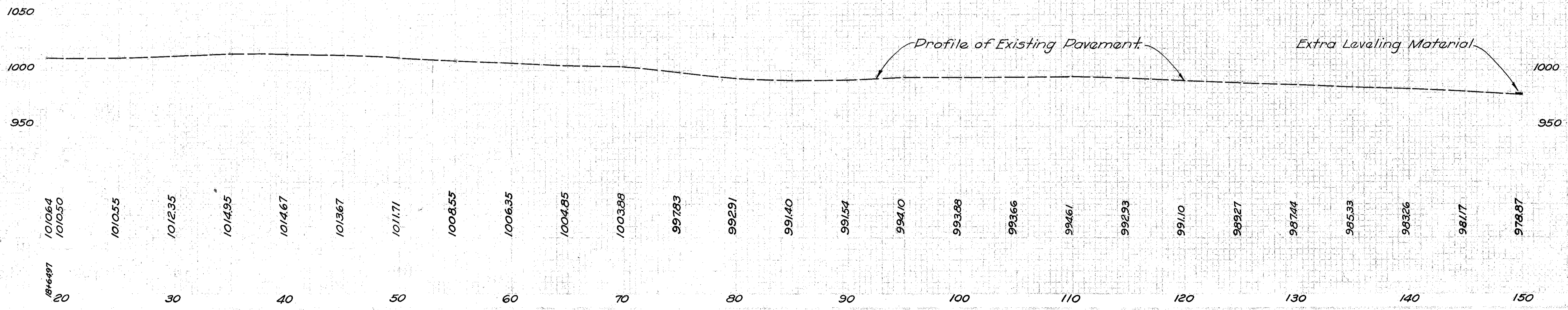
The existing pavement to be removed and replaced shall be determined by the Engineers. Pavement removed shall be disposed of by the Contractor beyond the limits of the project.

BEGIN PROJECT  
 STA 18+64.97



Sta. 149+50 to Sta. 150+00  
 Place Extra Leveling Material.

EXTRA PAVEMENT.			
STATION	SIDE	1 1/2" T-35 on 3/4" B-35 SQ. YDS.	EXTRA LEVELING MATERIAL SQ. YDS.
86+06	L & R	19.3	
136+78.1	Rt	236.3	
136+78.1	Lt	236.3	
149+50-150+00			111.1
0+81-13+20.53		2754.5	
TOTAL		3246.4	111.1

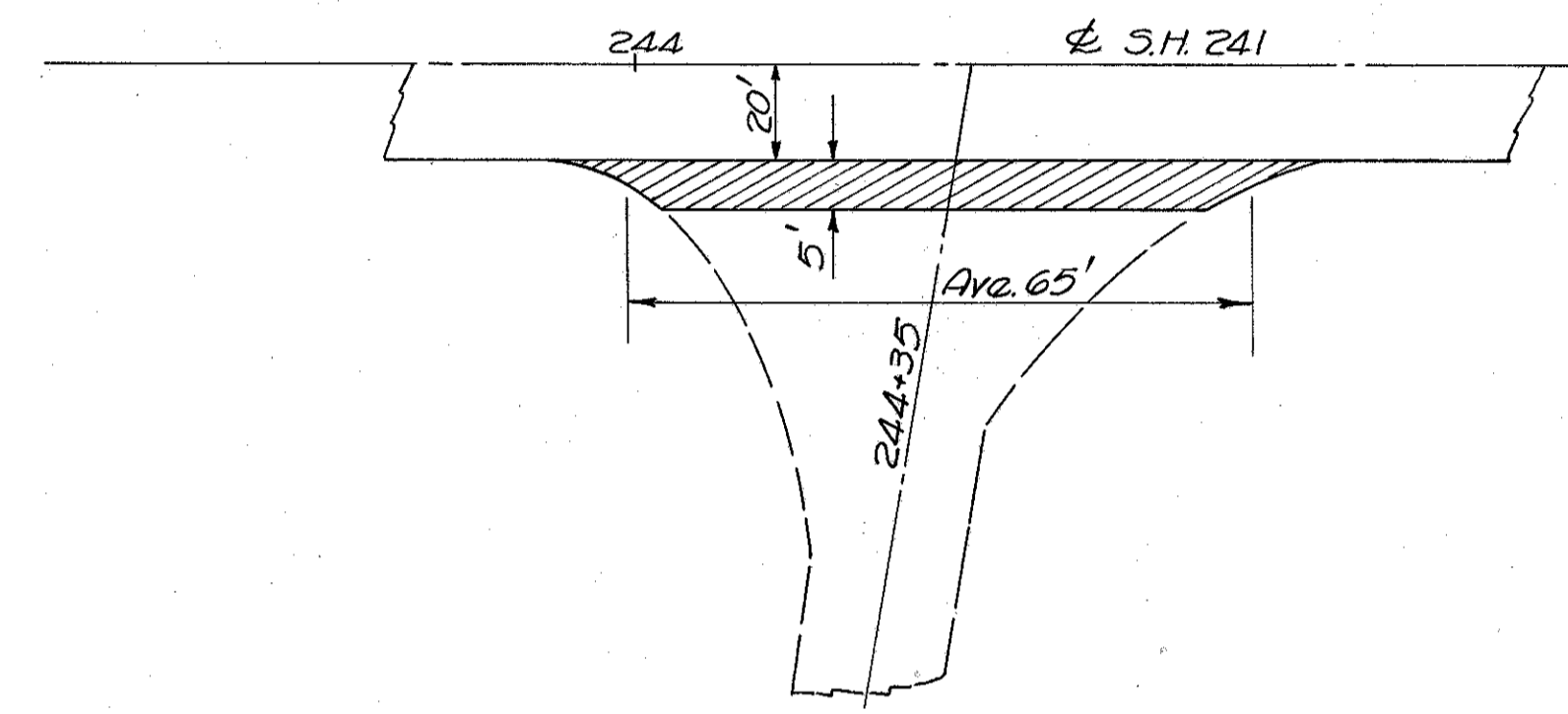
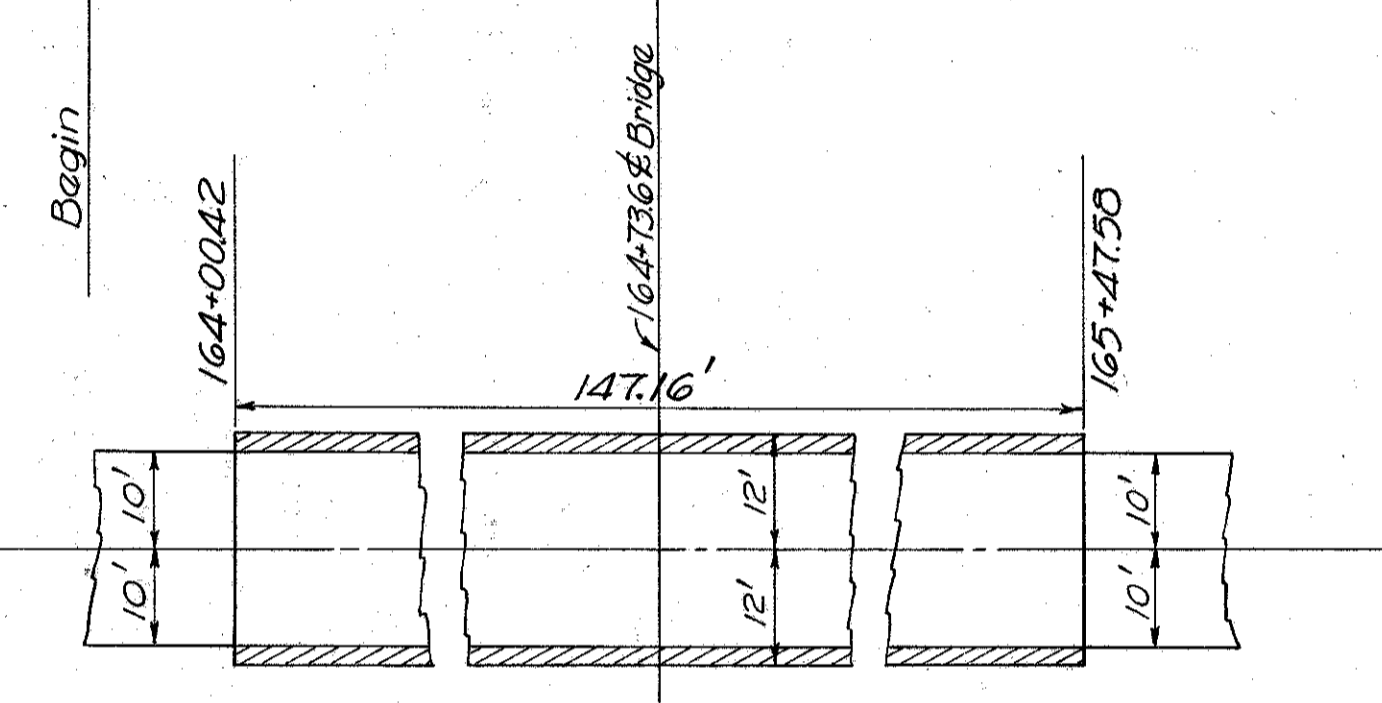
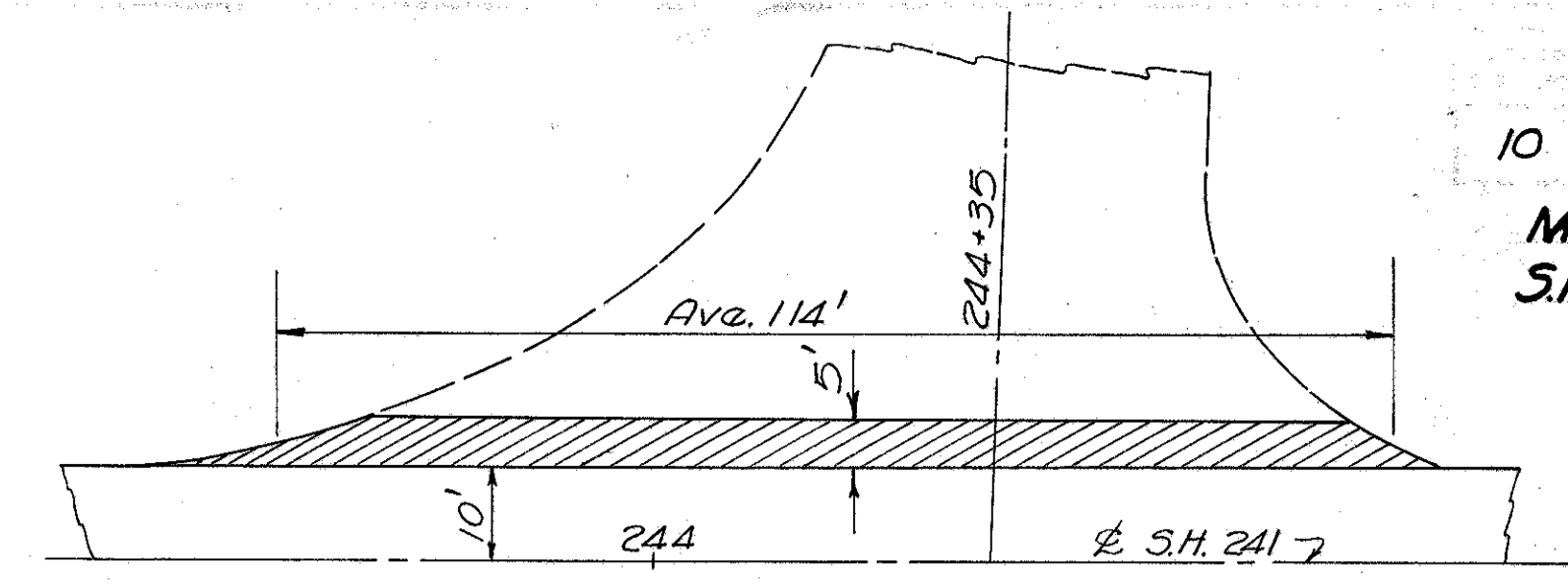
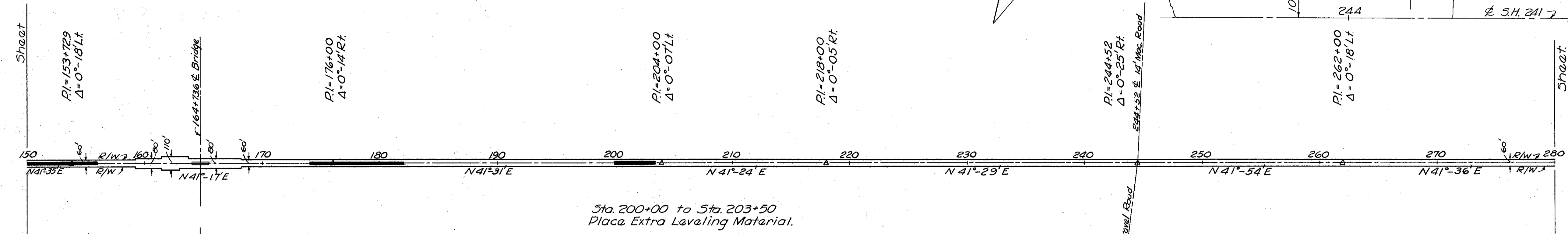


PLAN & PROFILE

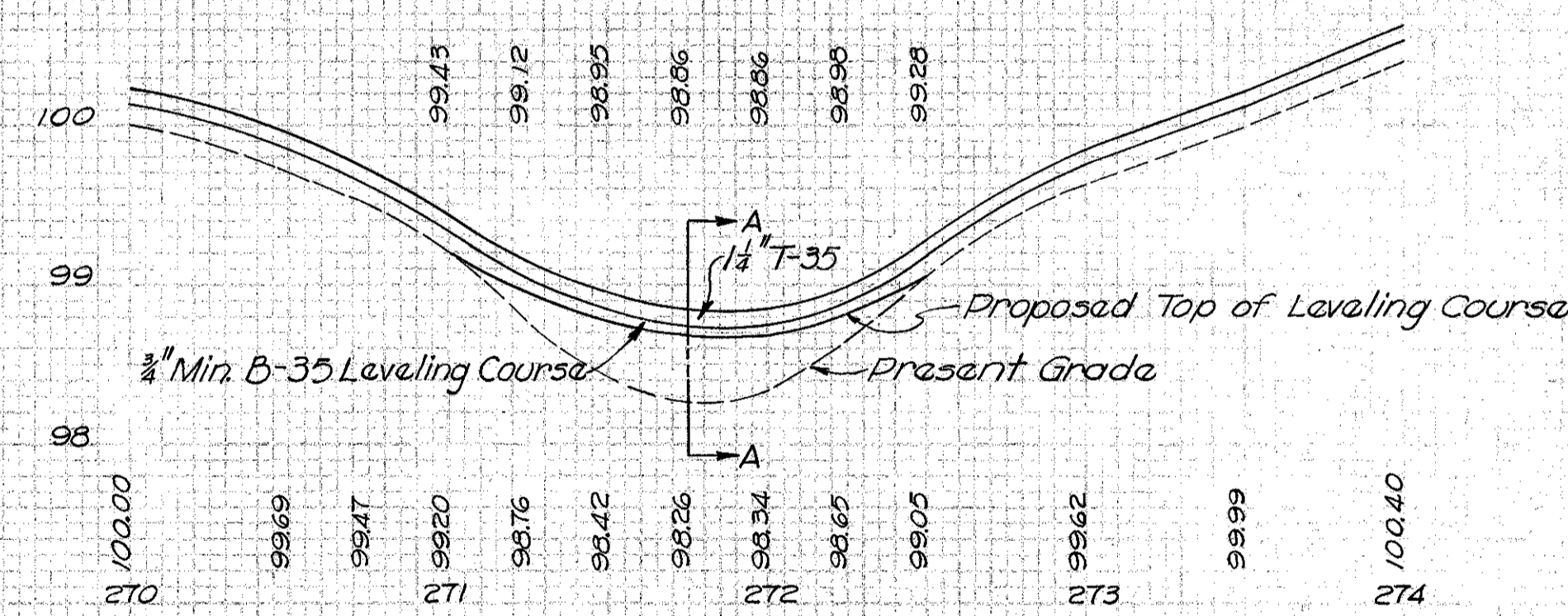
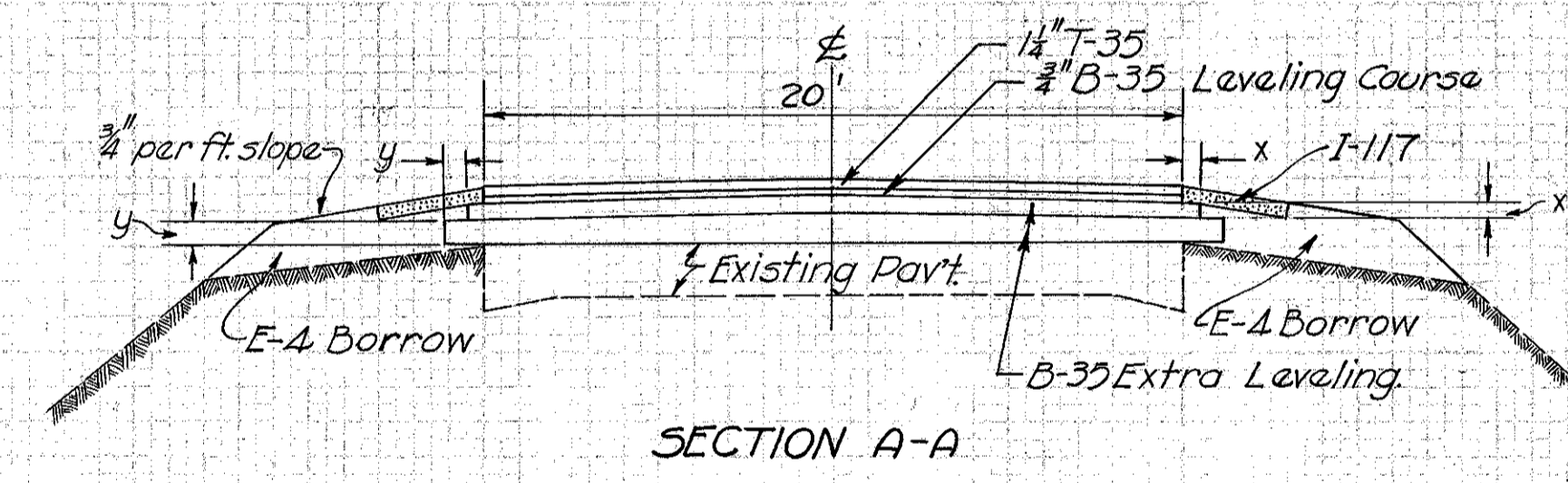
Sta. 150+00 to Sta. 156+00  
 Place Extra Leveling Material.

Sta. 174+00 to Sta. 182+00  
 Place Extra Leveling Material.

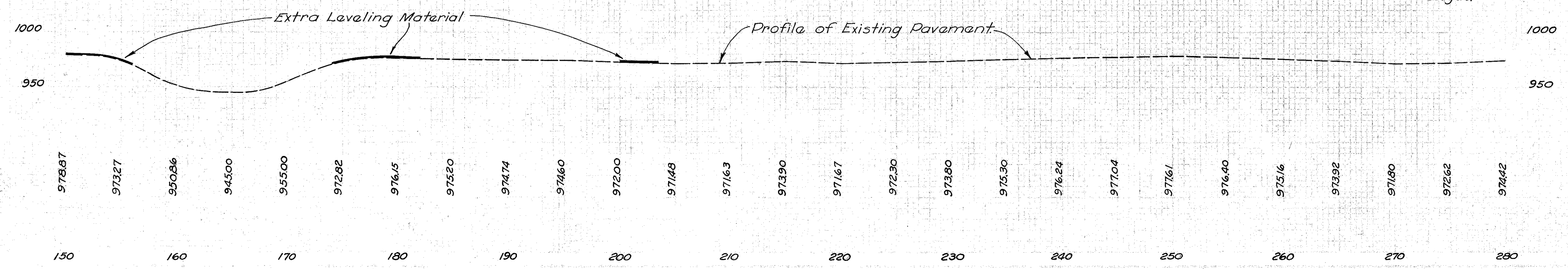
Sta. 200+00 to Sta. 203+50  
 Place Extra Leveling Material.



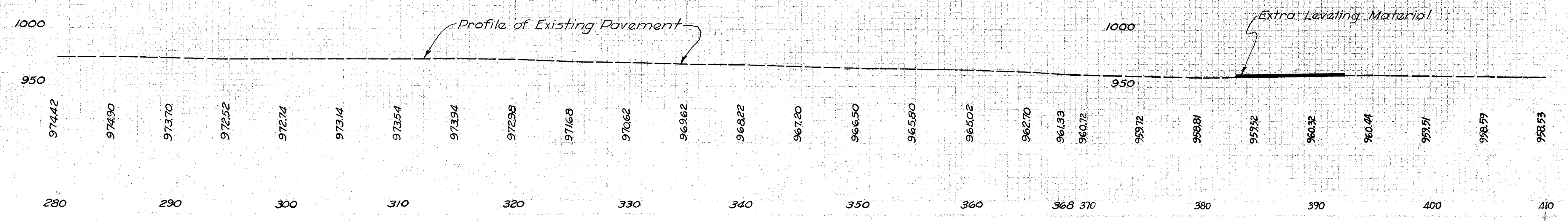
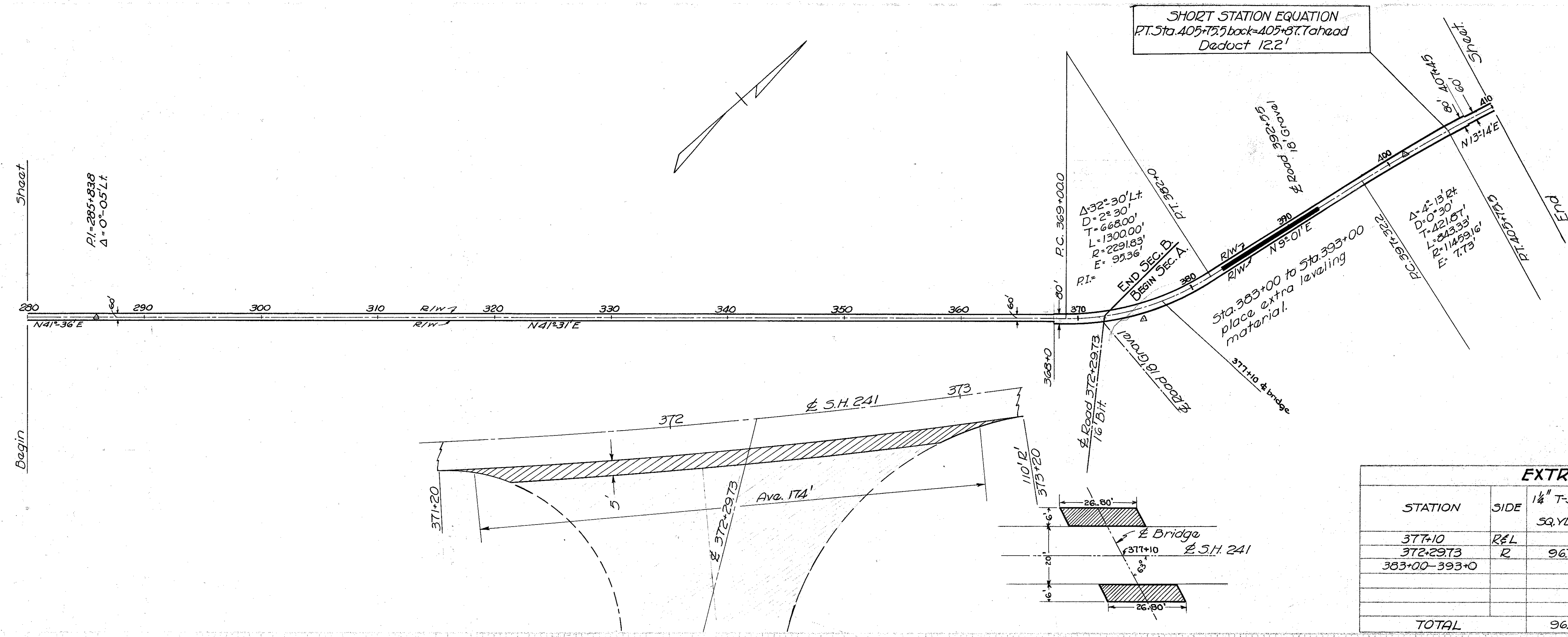
EXTRA PAVEMENT				
STATION	SIDE	1 1/2" T-35 SQ. YDS.	1 1/2" T-35 on 3/4" B-35 SQ. YDS.	EXTRA LEVELING MATERIAL SQ. YDS.
150+00 - 156+00				1333.3
164+00.42 - 165+47.50	Lt & Rt		65.4	
174+00 - 182+00				1777.8
200+00 - 203+50				777.8
244+35	Rt	36.1		
244+35	Lt	63.3		
271+00 - 272+50				29.1
<b>TOTAL</b>		<b>994</b>	<b>65.4</b>	<b>3888.9</b>



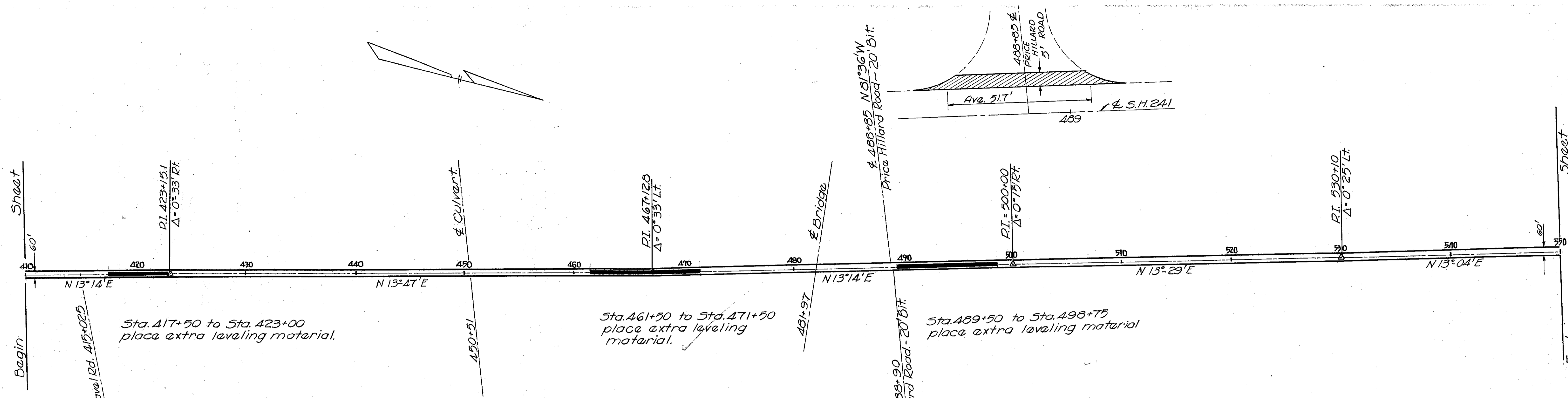
**ESTIMATED QUANTITIES**  
 E-A Borrow For Raising Berms to New Grade 30 cu. yds.  
 B-35 Extra Leveling Material 27.6 cu. yds.  
 Extra Leveling Material to be  
 used in lieu of forms 1.5  
**Total 29.1 cu. yds.**



PLAN & PROFILE



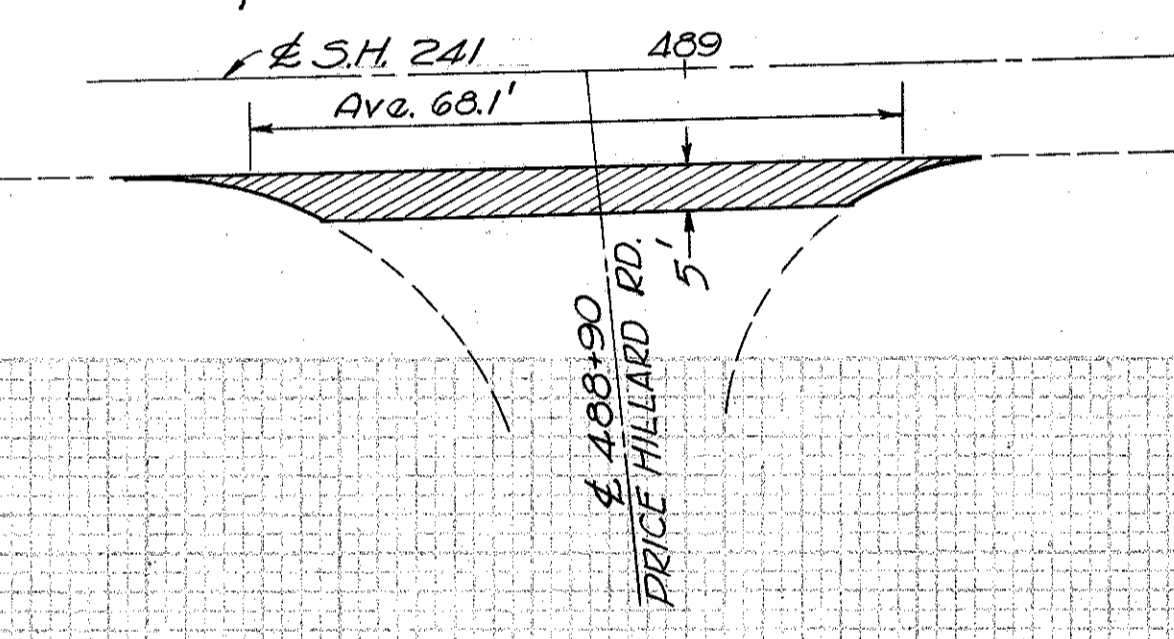
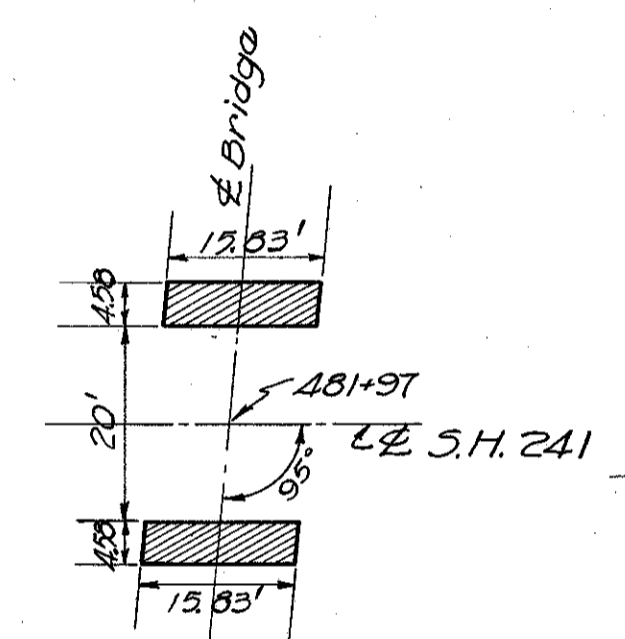
PLAN & PROFILE



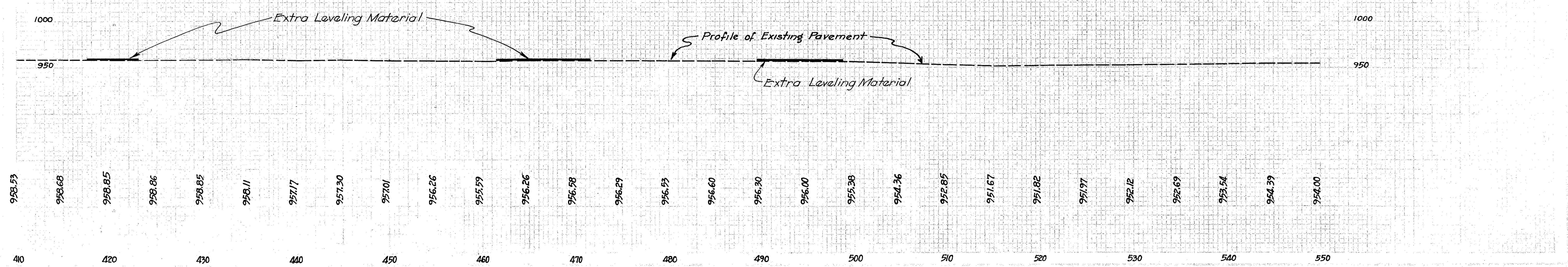
Sta. 417+50 to Sta. 423+00  
place extra leveling material.

Sta. 461+50 to Sta. 471+50  
place extra leveling material.

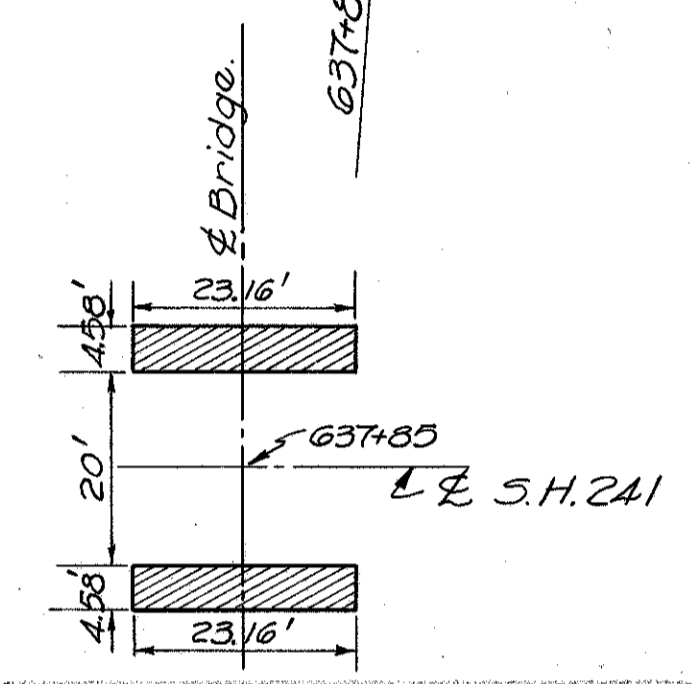
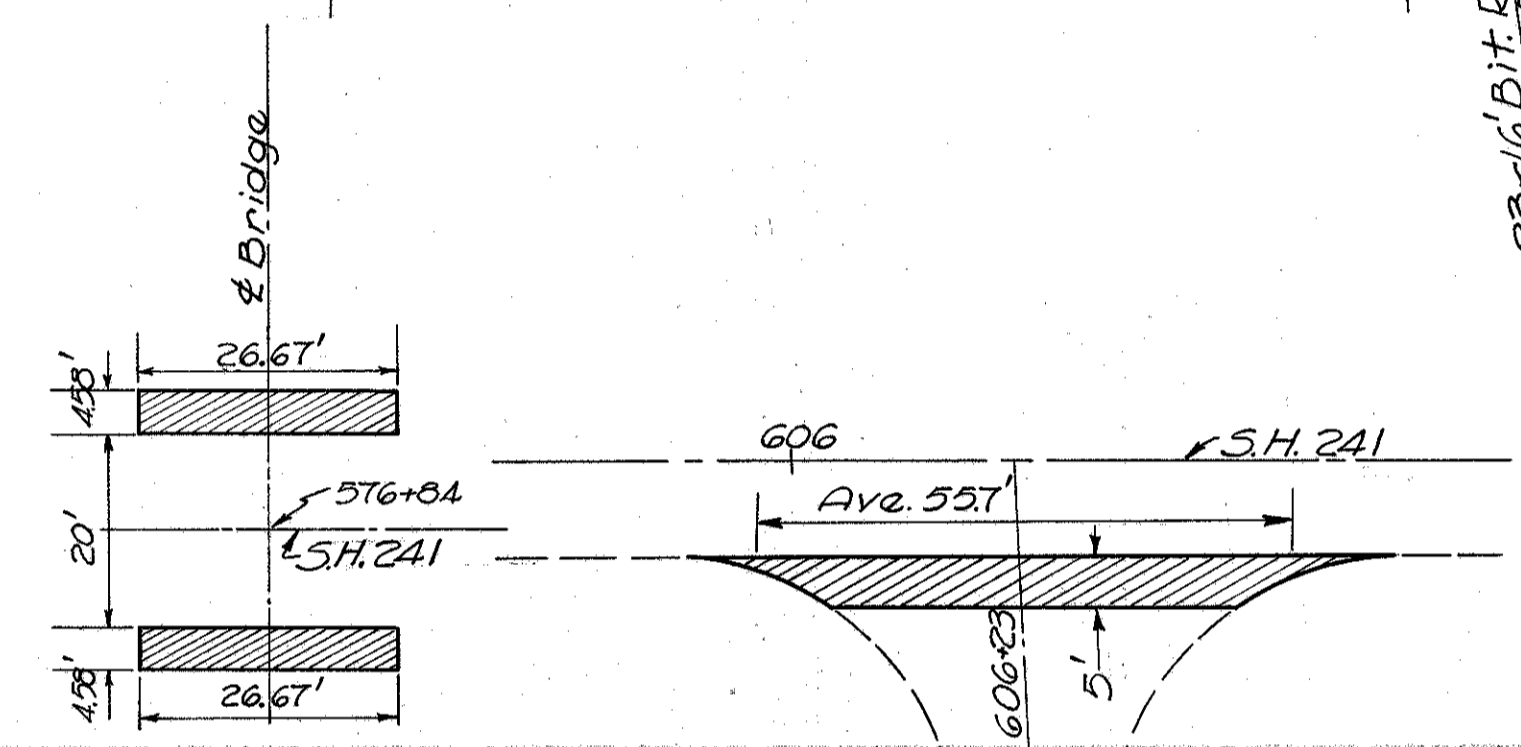
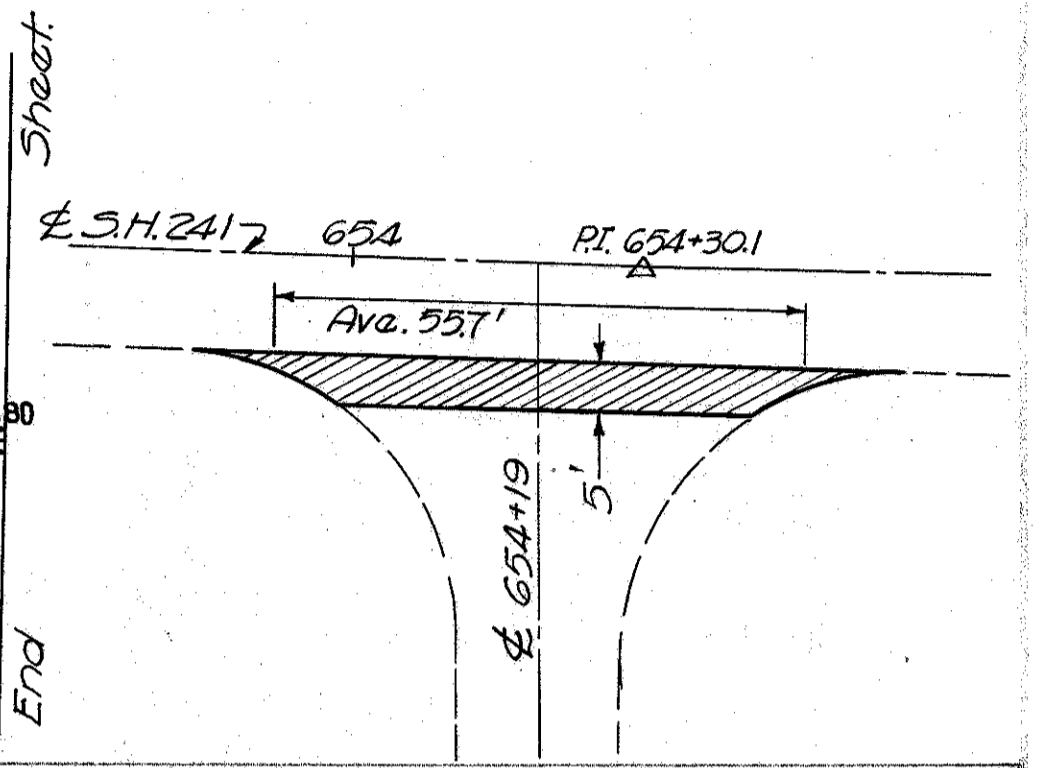
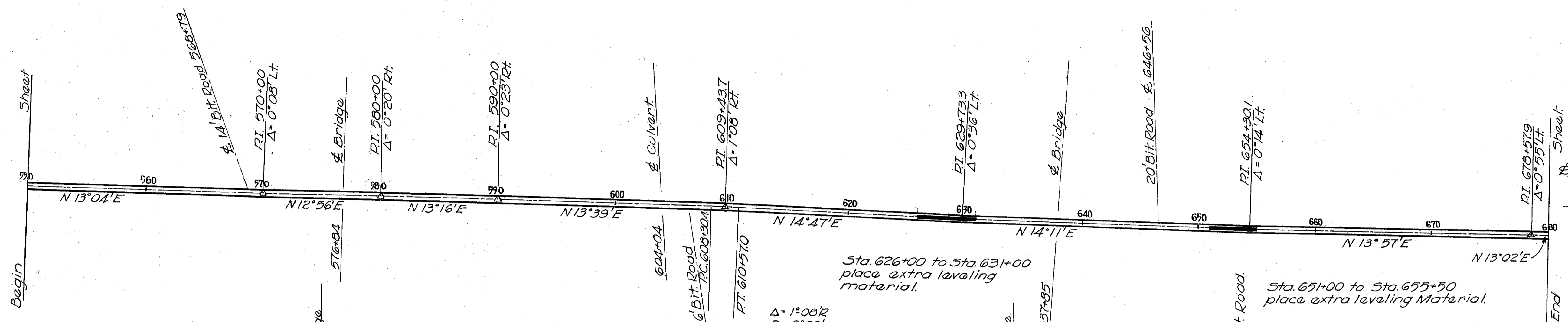
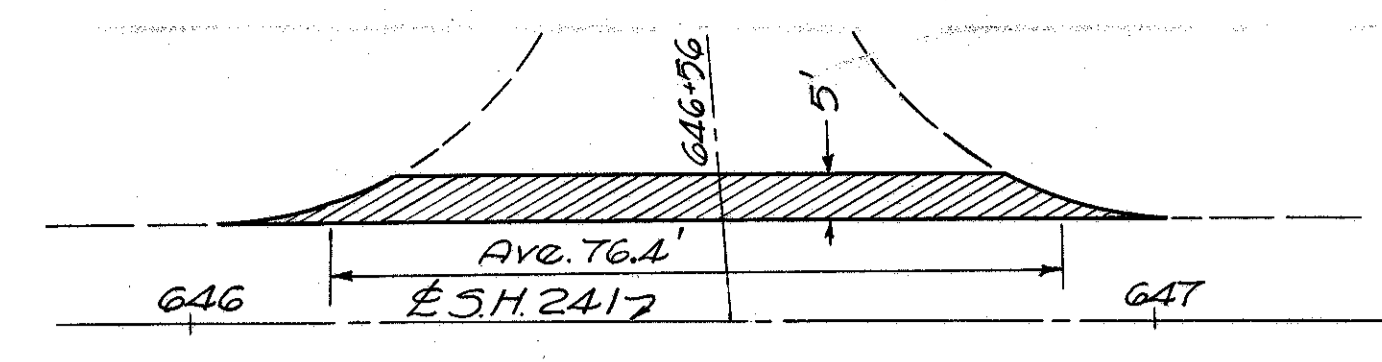
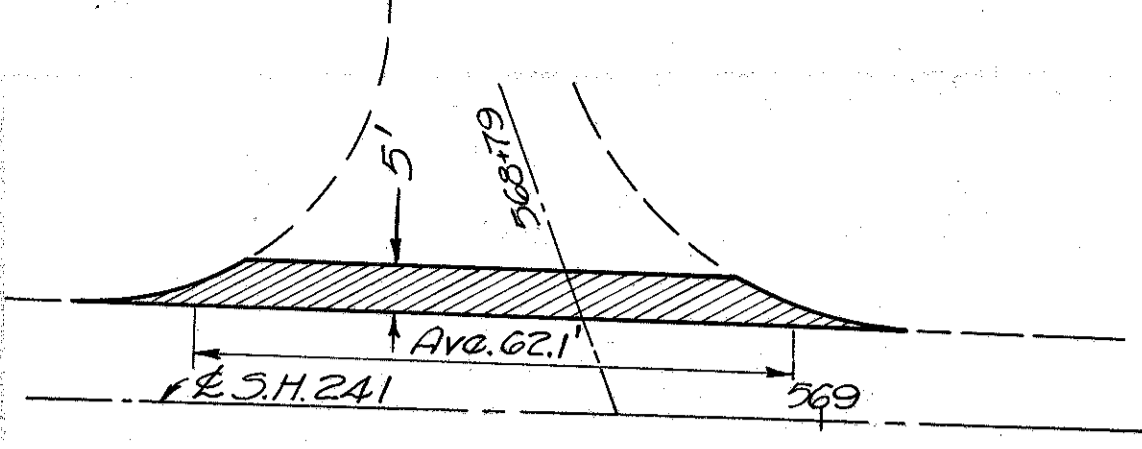
Sta. 489+50 to Sta. 498+75  
place extra leveling material.



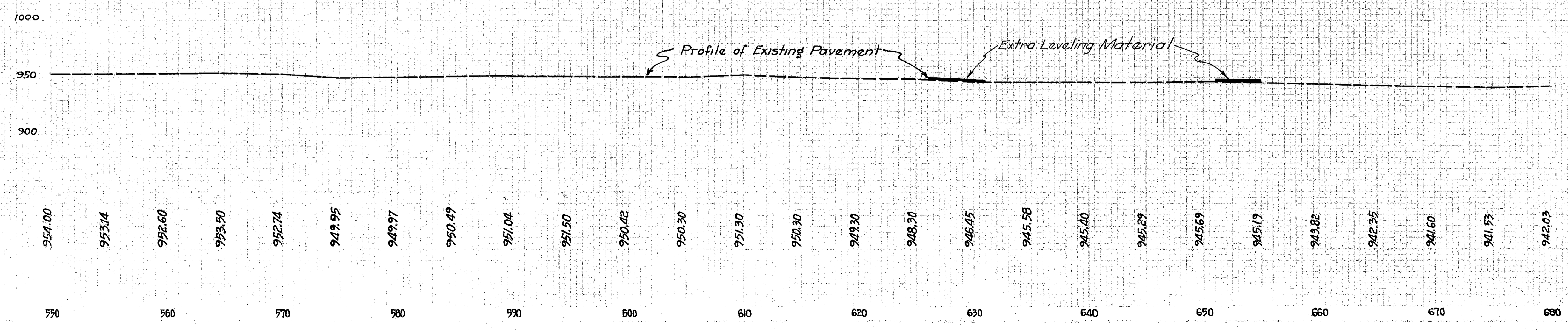
EXTRA PAVEMENT					
STATION	SIDE	1 1/2" T-35 SQ. YDS.	1 1/2" T-35 on 3/4" B-35 SQ. YDS.	EXTRA LEVEL- ING MATERIAL SQ. YDS.	EXTRA LEVEL- ING MATERIAL CU. YDS.
488+85	Lt.	28.7			
488+90	Rt.	37.8			
489+50-498+75				2053.6	
481+97	R&L		16.1		
417+50-423+00				1222.2	
461+50-471+50				2222.2	
TOTAL		66.5	16.1	5500.0	



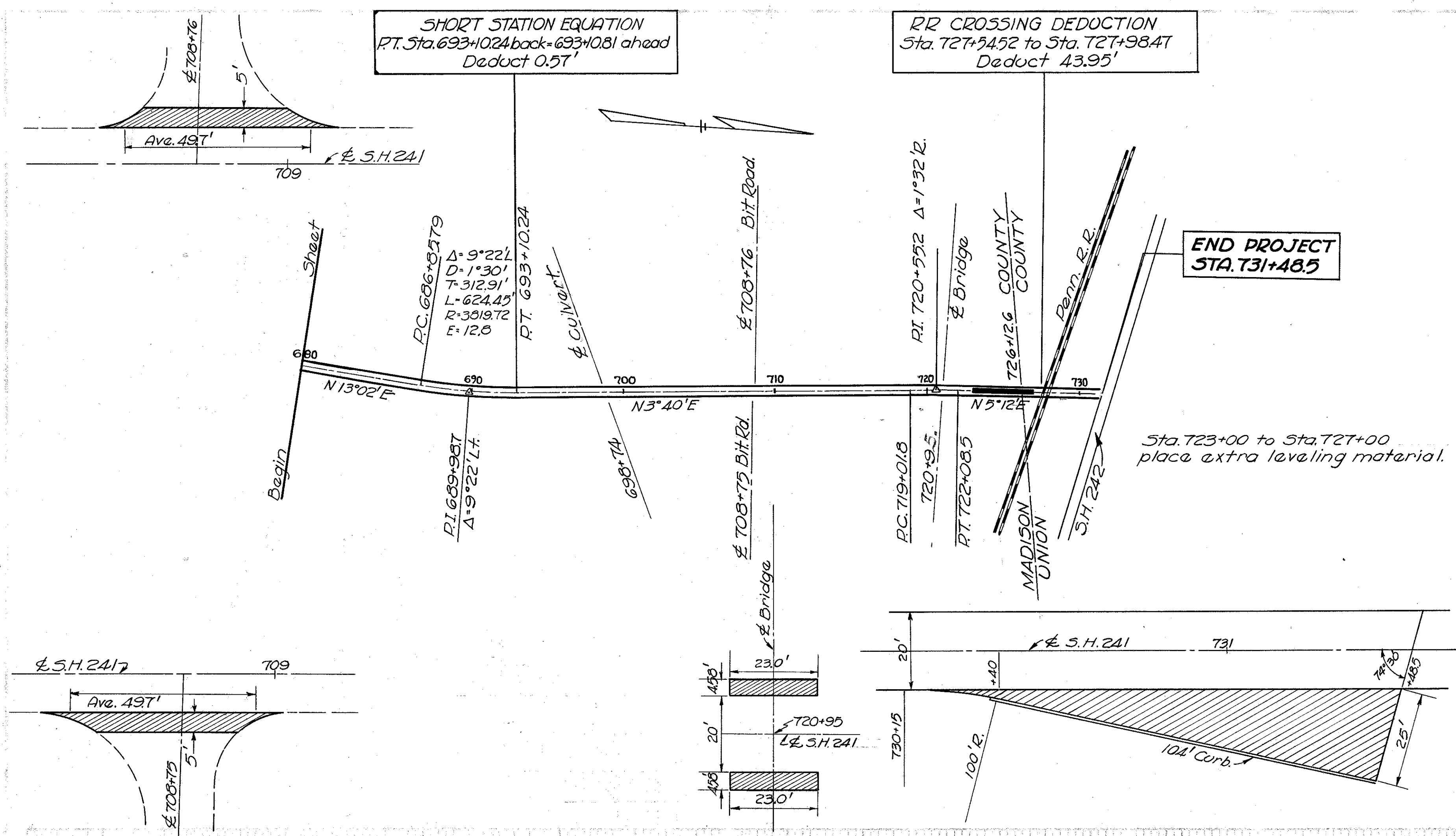
PLAN & PROFILE.



EXTRA PAVEMENT.					
STATION	SIDE	1/4" T-35 SQ. YDS.	1/4" T-35 on 3/4" B-35 SQ. YDS.	EXTRA LEVEL- ING MATERIAL SQ. YDS.	EXTRA LEVEL- ING MATERIAL CU. YDS.
568+79	Lt	34.5			
637+85	R&L		23.6		
576+84	R&L		27.1		
626+00-631+00				1111.1	
651+00-655+00				888.9	
646+56	Lt.	42.4			
654+19	Rt.	30.9			
606+23	Rt.	30.9			
TOTAL		138.7	507	2000.0	

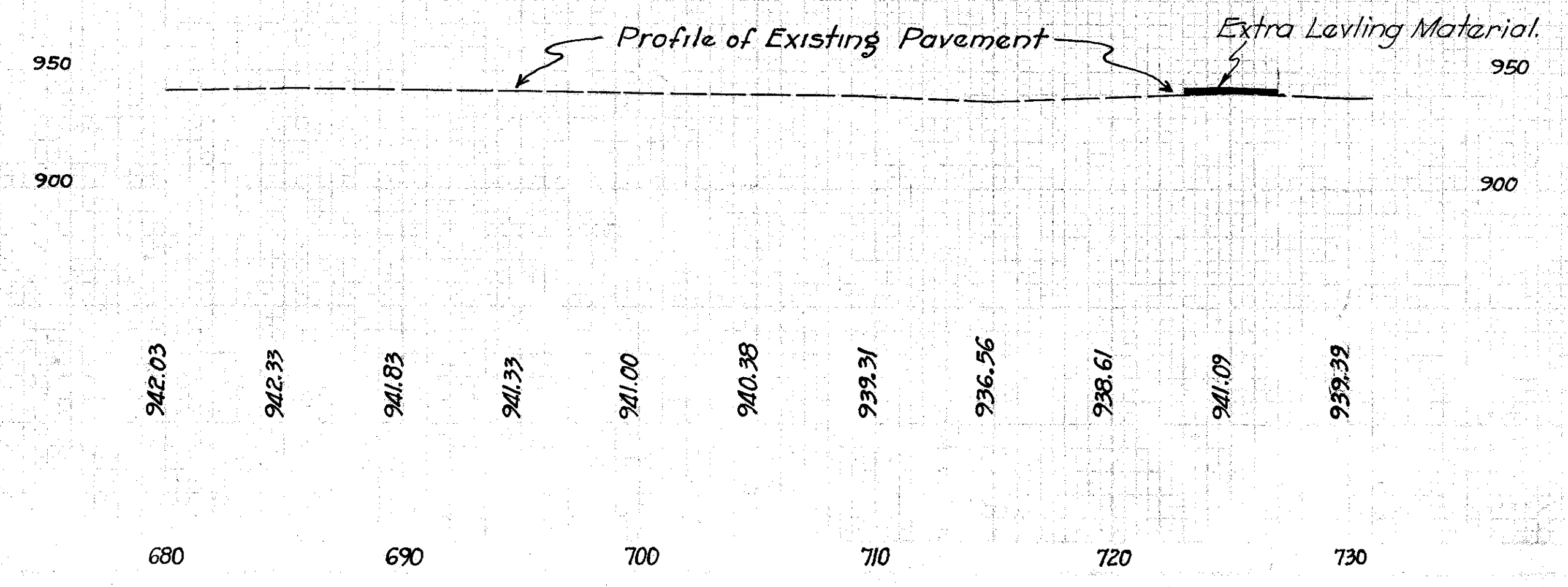


PLAN & PROFILE.



**EXTRA PAVEMENT.**

STATION	SIDE	1 1/4" T-35 SQ. YDS.	1/4" T-35 on 3/4" B-35 SQ. YDS.	EXTRA LEVEL- ING MATERIAL SQ. YDS.	EXTRA LEVEL- ING MATERIAL CU. YDS.
708+76	Lt.	27.6			
730+17 to 731+48.5	R.		182.0		
720+95	R&L		23.4		
723+00-727+00				588.9	
708+75	Rt.	27.6			
<b>TOTAL</b>		<b>55.2</b>	<b>205.4</b>	<b>588.9</b>	



PLAN & PROFILE.



PAVEMENT CALCULATIONS.	
Begin Project Station 18+64.97 End Project Station 731+48.5 No Additions Deduction for Station Equations, Etc. Station 405+75.5 Back = Station 405+87.7 Ahead = 12.2 Lin. Ft. Station 693+10.24 Back = Station 693+10.81 Ahead = 0.57 Lin. Ft. Station 727+54.52 to Station 727+98.47 = RR CROSSING = 43.95 Lin. Ft. Total Deductions 56.72 Lin. Ft. NET LENGTH OF PROJECT. 71226.81 Lin. Ft. or 13.409 Miles.	
<b>T-35 1 1/4" ASPHALTIC CONCRETE SURFACE COURSE:</b> $71226.81 \times 20 \times \frac{1}{8} = 158,281.8$ Sq. Yds. Add from Table "A" (456.5 + 3619.7) = 4,076.2 Sq. Yds. TOTAL 162,358.0 Sq. Yds. $162,358.0 \times 1.25 \times \frac{1}{36} = 5637.4$ Cu. Yds.	
<b>B-35 ASPHALTIC CONCRETE LEVELING COURSE (MIN. 1/2")</b> $71226.81 \times 20 \times \frac{1}{8} = 158,281.8$ Sq. Yds. Add from Table "A" (3619.7 + 14611.1) = 18,230.8 Sq. Yds. TOTAL 176,512.6 Sq. Yds. $176,512.6 \times 0.75 \times \frac{1}{36} = 3677.3$ Cu. Yds. Add for Crown Correction 13.489 miles @ 200 cu yds. = 2697.8 Cu. Yds. Add for Longitudinal Correction 13.489 miles @ 25 cu yds = 337.2 Cu. Yds. Add from Table "A" 29.1 Cu. Yds. TOTAL 6741.4 Cu. Yds.	
<b>E-8 REMOVAL OF EXISTING PAVEMENT.</b> Estimated 217 Sq. Yds.	
<b>I-19 INSULATION COURSE:</b> Estimated 217 Sq. Yds.	
<b>B-35 2-3" COURSES ASPHALTIC CONCRETE BASE:</b> Estimated 217 Sq. Yds. $217 \times 6 \times \frac{1}{36} = 36.2$ Cu. Yds.	
<b>T-30 BITUMINOUS PRIME COAT</b> $71226.81 \times 20 \times \frac{1}{8} = 158,281.8$ Sq. Yds. Add from Table "A" 3619.6 Sq. Yds. TOTAL 161,901.4 Sq. Yds. $161,901.4 \times \frac{1}{40} = 16190$ Gals.	
<b>I-117 SIDE APPROACHES AND BERM MATERIAL.</b> $2 \times 71226.81 \times (0.24 \times 3 \times \frac{1}{2}) \times \frac{1}{27} \times 115\% = 2184$ Cu. Yds.	

GENERAL SUMMARY			
ITEM	QUANTITY	UNIT	DESCRIPTION
E-4	30	Cu. Yds.	Borrow (Contractor to furnish.)
E-8	217	Sq. Yds.	Removal and Disposal of Existing Pavement.
I-117	2184	Cu. Yds.	Side Approaches, Mail Box Turnouts and Berm Material
B-35	36	Cu. Yds.	Asphaltic Concrete Base Course.
B-35	6741	Cu. Yds.	Asphaltic Concrete Leveling Course.
T-30	16190	Gals.	Bituminous Prime Coat, Bituminous Material Sec. M-5.5 M5.1, including sand cover.
T-35	5637	Cu. Yds.	Asphaltic Concrete Surface Course, Type "A."
I-19	217	Sq. Yds.	1/4" Insulation Course.

EXTRA PAVEMENT				
SHEET N#	1/4" T-35 SQ. YDS.	1/4" T-35 on B-35 SQ. YDS.	EXTRA LEVELING MATERIAL SQ. YDS.	EXTRA LEVELING MATERIAL CU. YDS.
3		3246.4	111.1	
4	99.4	65.4	3888.9	29.1
5	96.7	35.7	2222.2	
6	66.5	16.1	5500.0	
7	138.7	50.7	2000.0	
8	55.2	205.4	688.9	
TOTAL	456.5	3619.7	14,611.1	29.1

MADISON & UNION COUNTIES - SEC. C (PT), B & A