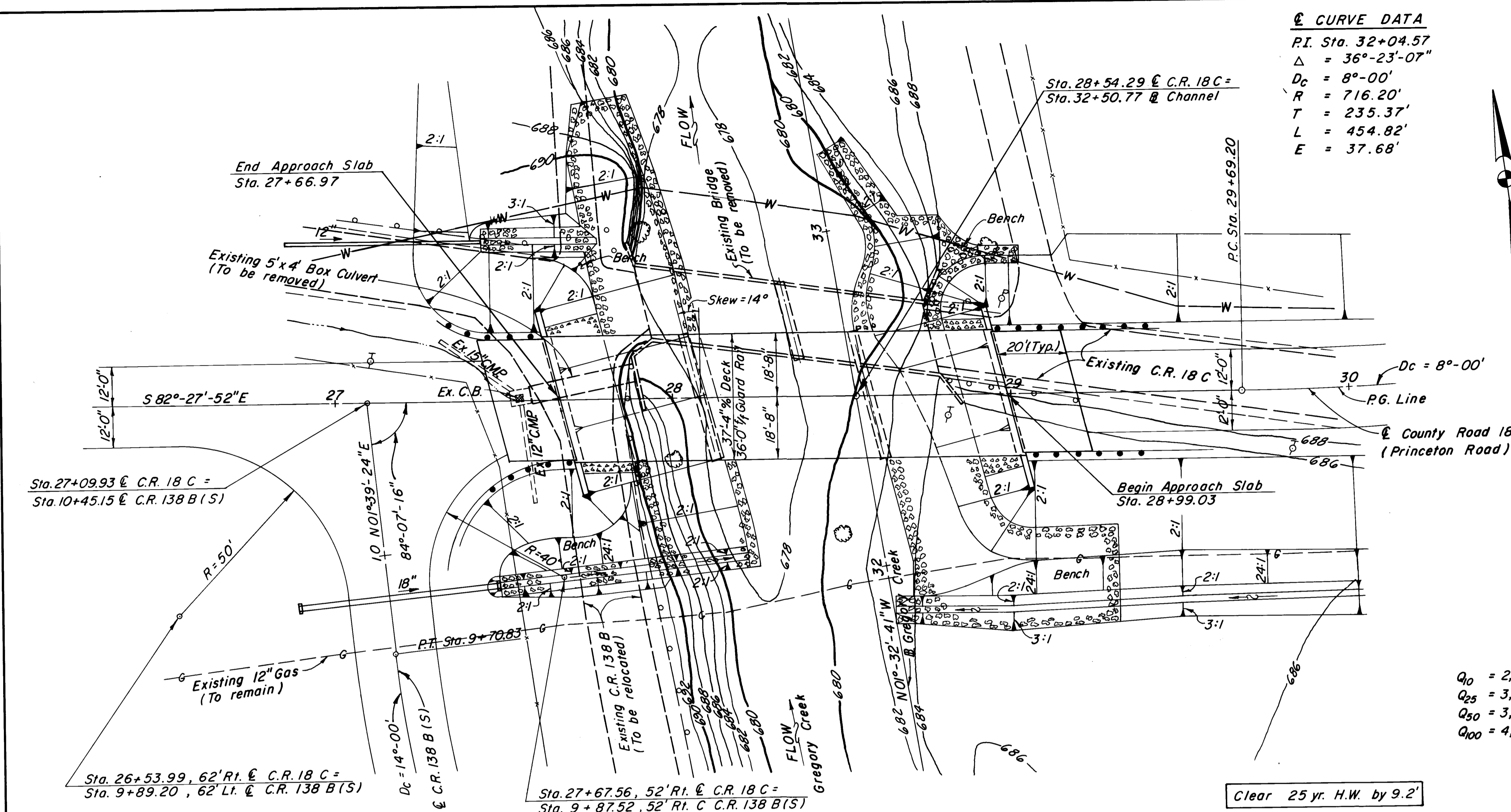
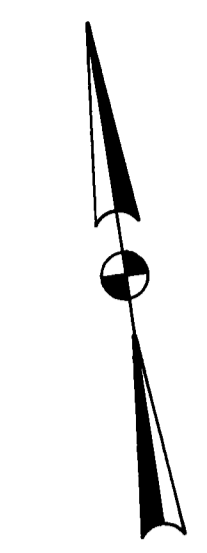


### BUTLER COUNTY COUNTY ROAD 18 C

**☉ CURVE DATA**  
 P.I. Sta. 32+04.57  
 $\Delta = 36^\circ-23'-07''$   
 $D_c = 8^\circ-00'$   
 $R = 716.20'$   
 $T = 235.37'$   
 $L = 454.82'$   
 $E = 37.68'$

EARTHWORK LIMITS shown are approximate. Actual slopes shall conform to plan-cross sections.



TRAFFIC: 1995 ADT = 2,100  
AADT = 252

DRAINAGE AREA = 10.46 sq. mi.

$Q_{10} = 2,449$  cfs,  $V_{10} = 5.3$  /sec., Elev. 686.8  
 $Q_{25} = 3,085$  cfs,  $V_{25} = 6.1$  /sec., Elev. 687.3  
 $Q_{50} = 3,558$  cfs,  $V_{50} = 6.7$  /sec., Elev. 687.6  
 $Q_{100} = 4,005$  cfs,  $V_{100} = 7.2$  /sec., Elev. 687.9

Trenton Quadrangle  
 Lat.  $39^\circ-23'-10''$   
 Long.  $84^\circ-24'-40''$

**EXISTING STRUCTURE**  
 TYPE: 2-span reinforced concrete slab, wall type abutments & pier  
 SPANS: 2 @ 43' ±  
 ROADWAY: 20' ±  
 SKEW: 24° Rt. Fwd.  
 LOADING: H-15  
 DATE BUILT: 1915  
 CONDITION: Poor  
 (To be removed)

**PROPOSED STRUCTURE**  
 TYPE: 3 span continuous steel (A588) beam with corrugated steel flooring, integral abutments and T-type piers  
 SPANS: 40'-50'-40' % bearings  
 ROADWAY: 36' 1/2 guard rail (37'-4" % deck)  
 SKEW: 14° Rt. Fwd.  
 LOADING: HS 20-44  
 WEARING SURFACE: 2 1/2" min. asphalt concrete  
 APPROACH SLABS: AS-1-72 (20' long)  
 ALIGNMENT: Tangent  
 SUPERELEVATION: 0.01583 ft/ft.

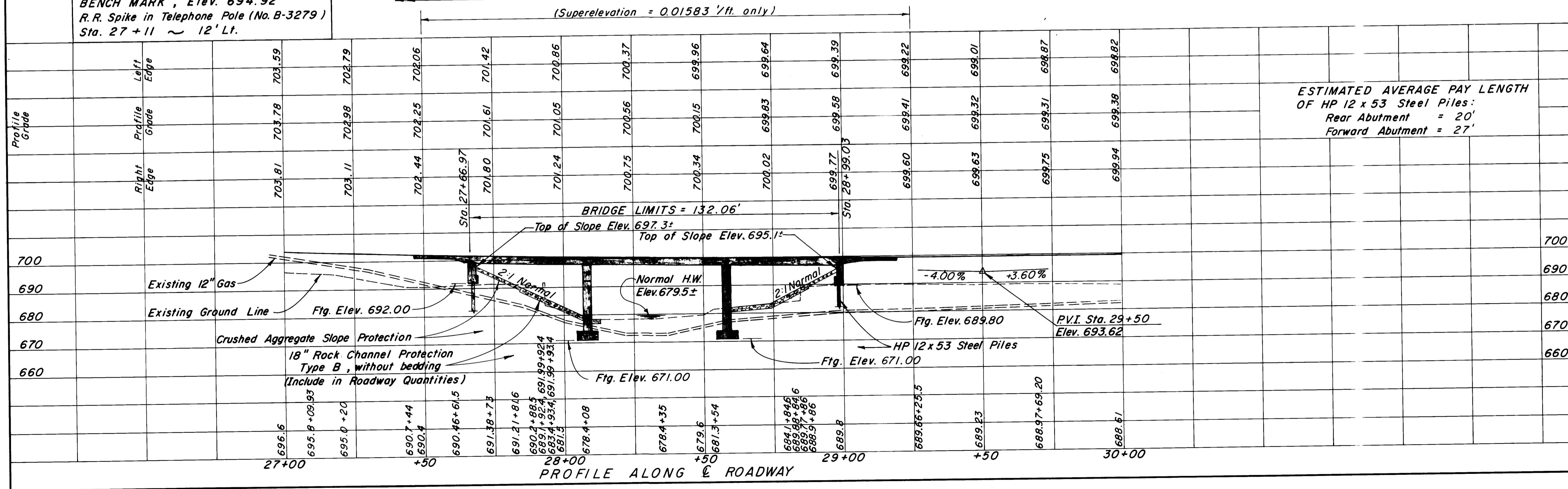
STICKLEN - BELSHEIM & ASSOCIATES ENGINEERS  
 WORTHINGTON OHIO

**SITE PLAN**  
 COUNTY ROAD 18 C  
 OVER  
 GREGORY CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
TRO	R.D.Y.		SGH	ANL	6-10-77	4/80

**BENCH MARK, Elev. 694.92**  
 R.R. Spike in Telephone Pole (No. B-3279)  
 Sta. 27+11 ~ 12' Lt.

600' V.C.



ESTIMATED AVERAGE PILE LENGTH OF HP 12 x 53 Steel Piles:  
 Rear Abutment = 20'  
 Forward Abutment = 27'

PROFILE ALONG & ROADWAY

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

BUTLER COUNTY  
COUNTY ROAD 18C

**GENERAL NOTES**

REFERENCE shall be made to Standard Drawings  
DBR-2-73 dated 4-10-73  
AS-1-72 sheet 1 dated 6-30-72

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway Officials, 1973, including the Ohio "Supplement" to these specifications.

DESIGN DATA:  
Design Loading - HS 20-44  
Concrete Class C - unit stress 1,333 p.s.i. for substructure  
Structural Steel - ASTM A588 - unit stress 27,000 p.s.i.  
Reinforcing Steel - ASTM A615, A616 or A617 - unit stress 20,000 p.s.i.

REMOVAL OF EXISTING STRUCTURE: When no longer needed to maintain traffic the existing structure shall be removed in accordance with Item 202.03 of the Construction and Materials Specifications. Suitable waste masonry may be placed as bank protection or stored as directed by the County Engineer.

EMBANKMENT CONSTRUCTION: The embankments shall be constructed to the level of the subgrade for a minimum distance of 200 feet back of the abutments. Excavation may then be made for the abutments and piles driven.

PILES for the abutments shall be driven to refusal on bedrock or to 20 blows per inch for the last few inches of penetration. The design load is 23 tons per pile for the abutment piles.

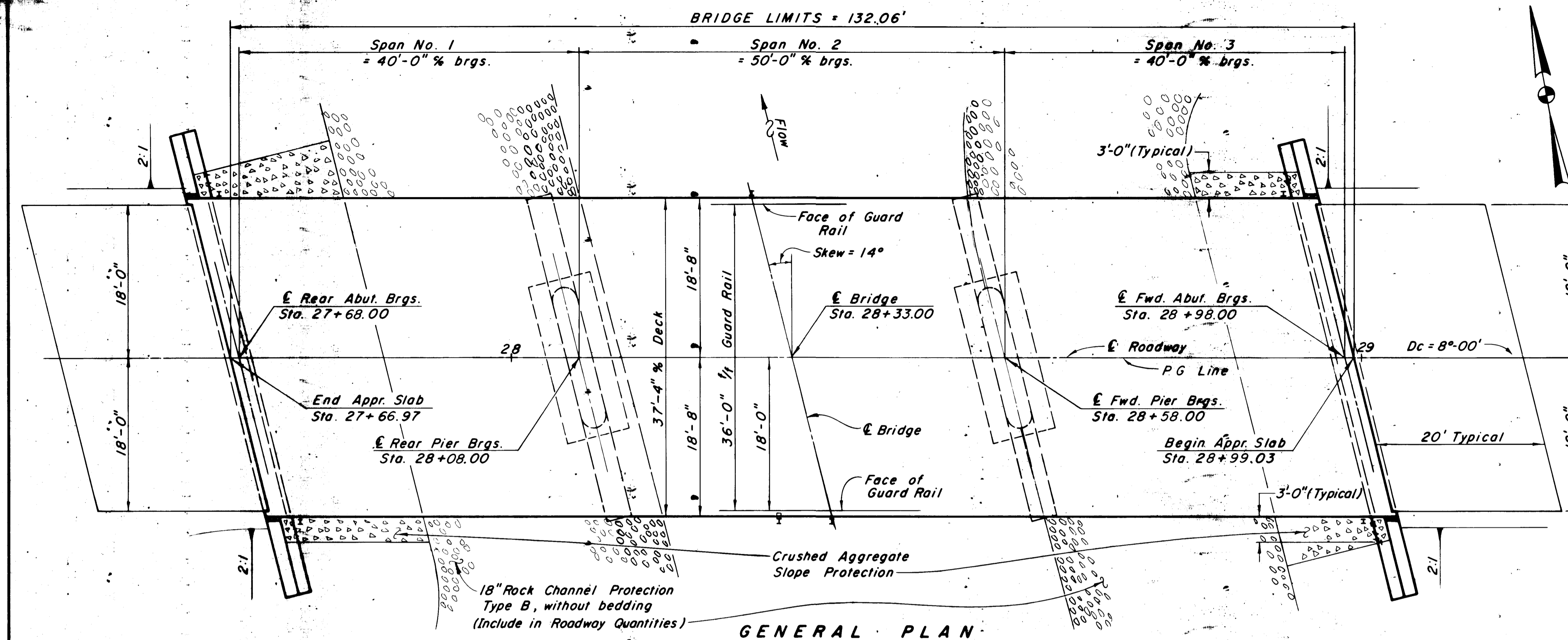
FOUNDATION DESIGN and foundation quantities are based on a study of soil sampling soundings made at the site. This information may be inspected in the office of the County Engineer, Hamilton, Ohio, but the County assumes no responsibility for the accuracy thereof.

FOUNDATION BEARING PRESSURE: Pier footings are designed for a maximum bearing pressure of 4 tons per sq. ft.

APPROACH SLAB MODIFICATION: The clearance to the top reinforcing bars shall be 3" instead of 2" shown. The pavement jacking holes need not be provided.

FOOTINGS shall extend a minimum of 3 inches into bedrock or to the elevation shown, whichever is lower.

UTILITY LINES: All expense involved in relocating the affected utility lines shall be borne by the Owners. The Contractor and Owners are requested to cooperate by arranging their work in such a manner that inconvenience to either will be held to a minimum.



**GENERAL PLAN**

**ESTIMATED QUANTITIES**

ITEM	TOTAL	UNIT	DESCRIPTION	Abuts.	Pier	Superst.	General
202	Lump	Sum	Structure removed				Lump
404	59	Cu.Yds.	Asphalt concrete (AC-20)			59	
407	80	Gal.	Tack coat			80	
503	Lump	Sum	Cofferdams, cribs and sheeting				Lump
503	254	Cu.Yds.	Unclassified excavation	124	130		
505	Lump	Sum	Test pile				Lump
507	380	Lin.Ft.	Steel piles, HP 12 x 53	380			
509	24,048	Lbs.	Reinforcing steel	11,644	12,404		
511	96	Cu.Yds.	Class C concrete, abutments	96			
511	111	Cu.Yds.	Class C concrete, piers above footing		111		
511	32	Cu.Yds.	Class C concrete, pier footings		32		
512	88	Lin.Ft.	Premolded sealing strip	88			
513	114,800	Lbs.	Structural steel, ASTM A588			114,800	
516	63	Sq.Ft.	1" Preformed expansion joint filler	63			
516	66	Sq.Ft.	1/4" Preformed expansion joint filler	66			
517	264.12	Lin.Ft.	Railing, (deep beam rail with steel tubular backup and steel posts and bolts)			264.12	
518	50	Cu.Yds.	Porous backfill				50
518	109	Lin.Ft.	6" Perforated, helical corrugated steel pipe, 707.01				109
518	52	Lin.Ft.	6" Non-Perforated, helical corrugated steel pipe, including specials, 707.01				52
601	149	Sq.Yds.	Crushed aggregate slope protection				149
Special	4,754	Sq.Ft.	9"x3" Corrugated sheet steel bridge flooring (1/16" thickness)			4,754	

**REINFORCING BAR SPLICE LAP LENGTHS:**

- No. 4 bars ~ 16" min.
- No. 5 bars ~ 20" min.
- No. 6 bars ~ 24" min.
- No. 7 bars ~ 30" min.
- No. 8 bars ~ 39" min.

TYPE B WATERPROOFING, 18" wide may be used in lieu of Item 512 Premolded sealing strip.

Quantities Calculated By T.R.O. 14 Mar. 1977  
Checked By D.S. - April 24, 1977

27

STICKLEN - BELSHEIM & ASSOCIATES  
ENGINEERS  
OHIO

**GENERAL PLAN, GENERAL NOTES  
& ESTIMATED QUANTITIES**  
COUNTY ROAD 18C  
OVER  
GREGORY CREEK  
STA. 27+66.97  
BUTLER CO. 28+99.03

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
			DCJ	AWL	6-10-77