

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

MICROFILMED
JUL 2 1985

CLE - 132 - 13.16

OHIO

FHWA
REGION 5

21

BRS - 1127 (3)

FEDERAL
PROJECT

CLE-132-13.16

BRS-1127(3)

8/2 Red
1-21

Current ADT = 4930
B & C Trucks = 4%
V = 60 MPH.

MICROFILMED
JAN 30 1991

BATAVIA TOWNSHIP
CLERMONT COUNTY

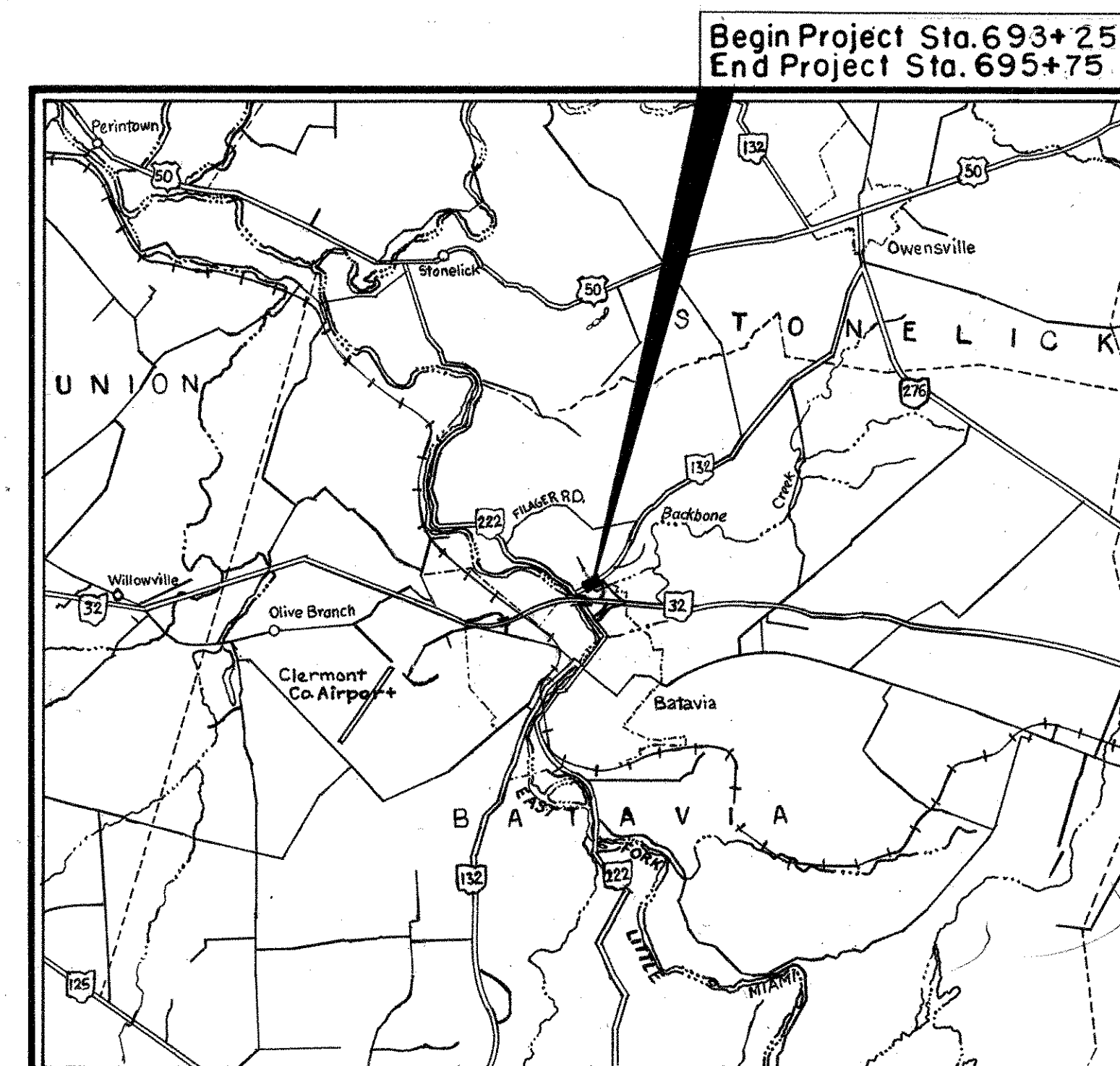
CONVENTIONAL SIGNS

County Line -----
Township Line -----
Section Line -----
Corporation Line ----- or -----
Fence Line (existing) -x-x- (proposed) -x-x-
Center Line ----- 352 ----- 353 -----
Trees (to be removed) (to be removed)
Utility Poles: Telephone ϕ , Power ϕ , Light ϕ .
Limited Access (only) ----- LA -----
Right of Way (only) ----- RW -----
Limited Access & Right of Way ----- LA & RW -----
Existing Right of Way -----
Property Line ----- (in existing fence) -x-x-
Railroad ----- or -----
Guardrail (existing) ----- (proposed) -----

INDEX OF SHEETS

Title Sheet
Typical Sections, Calculations
General Notes
Traffic Control
General Summary
Plan And Profile
Sub-Summary
Cross Sections
Structures Over 20' Span

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10,11
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LOCATION MAP

SCALE IN MILES
0 1 2 3 4

Portion to be improved -----
State & Federal Routes -----
Other Roads -----

SCALES

Plan -----
Profile: ----- Horizontal ----- Vertical -----
Cross Section: Horizontal ----- Vertical -----

SUPPLEMENTAL SPECIFICATIONS	
836	3-12-75
843	10-23-75
803	5-27-83
824	10-8-82
849	10-19-81

LINE DATA

Begin Work Sta. 691+88.00
End Work Sta. 697+12.00
Net Length Of Work 524.00 Lin.Ft. 0.099 Miles
Begin Project Sta. 693+25
End Project Sta. 695+75
Net Length Of Project 250.00 Lin Ft. 0.047 Miles

UNDERGROUND UTILITIES
48 HOURS
BEFORE YOU DIG
Call 800-362-2764 (Toll free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS					
BP-5	7-16-81	GR-1	2-05-82	MC-3	6-01-73
		GR-2B	2-05-82	MC-7	10-15-76
		GR-3	2-05-82	MC-11	8-01-78
		GR-4	2-05-82	LA-1	6-1-79
F-2	5-01-76				
F-3	5-01-76				
F-6	5-01-76				

1983 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

Approved Don J. Capen
Date 4-28-83 District Deputy Director of Transportation

Approved Robert B. Pfeiffer
Date 6-1-83 Engineer, Bureau of Bridges and Structural Design

Approved Wayne H. Kumble
Date 8-9-83 Chief Engineer, Planning and Design

Approved Warren J. Smith
Date 8-9-83 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR

DATE

SEAL

Project:
Date of Letting 19, Contract No.

TYPICAL SECTIONS

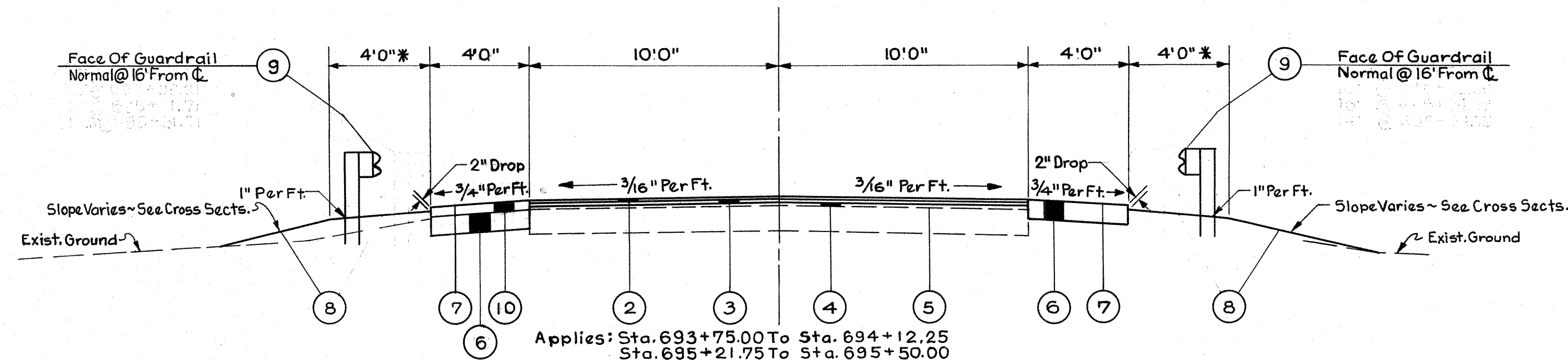
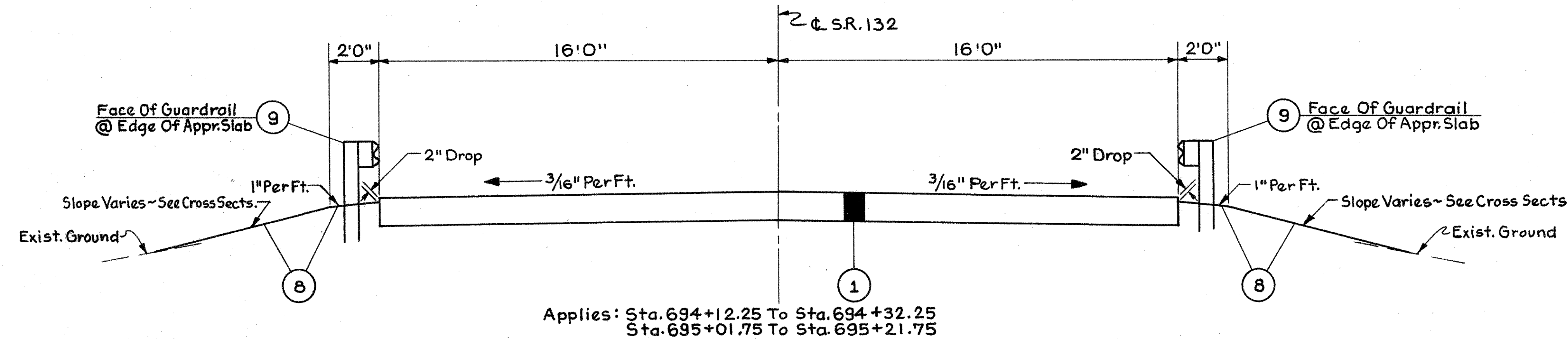
TYPE 404

Calc. By K.E.M. 3/22/83
Chkd. By R.E.R. 4/26/83

FED. RD. DIVISION	STATE	PROJECT
5	OHIO	

CLE-132-13.16

2
21



*~Note: Unless otherwise shown.

PAVEMENT QUANTITY CALCULATIONS

404-1 1/4"				611 & 203 Subgrade Compaction			
Sta. 693+25 To 693+75	50X20.1X0.10417 ÷ 27	=	3.88 C.Y.	Sta. 694+12.25 To 694+32.25	20X32 ÷ 9	=	71.11 S.Y.
Sta. 693+75 To 694+12.25	[(30.25X20)+(0.5X14X20)]X0.10417 ÷ 27	=	2.87 C.Y.	Sta. 695+01.75 To 695+21.75	20X32 ÷ 9	=	71.11 S.Y.
Sta. 695+21.75 To 695+50	[(0.5X14X20)+(21.25X20)]X0.10417 ÷ 27	=	2.18 C.Y.				
Sta. 695+50 To 695+75	25X20.3X0.10417 ÷ 27	=	1.96 C.Y.				
	Total =		10.89 C.Y.				Total = 142.22 S.Y.
403-1 3/4"				407- Tack Coat & Cover Aggregate			
Sta. 693+25 To 693+75	50X20.1X0.14583 ÷ 27	=	5.43 C.Y.	Sta. 693+25 To 693+75	(20.3+20) ÷ 2 X 50 ÷ 9	=	111.94 S.Y.
Sta. 693+75 To 694+12.25	[(30.25X20)+(0.5X14X20)]X0.14583 ÷ 27	=	4.03 C.Y.	Sta. 693+75 To 694+12.25	[(20X30.25)+(20X0.5X14)] ÷ 9	=	82.78 S.Y.
Sta. 695+21.75 To 695+50	[(0.5X14X20)+(21.25X20)]X0.14583 ÷ 27	=	3.06 C.Y.	Sta. 695+21.75 To 695+50	[(20X0.5X14)+(20X21.25)] ÷ 9	=	62.78 S.Y.
Sta. 695+50 To 695+75	25X20.3X0.14583 ÷ 27	=	2.74 C.Y.	Sta. 695+50 To 695+75	(20+20.6) ÷ 2 X 25 ÷ 9	=	56.39 S.Y.
	Total =		15.26 C.Y.		Total =		313.89 S.Y.
403-0" Min. (1/4" Ave.)				Tack Coat ~ 313.89 X 0.1 = 31.39 Gal. Cover Aggregate ~ 313.89 X 7 ÷ 2000 = 1.10 Tons			
Sta. 693+60.71 To 693+75	14.29X0.03789X0.5X20 ÷ 27	=	0.20 C.Y.	409- Seal Coat & Cover Aggregate			
Sta. 693+75 To 694+12.25	[(25X0.07103X0.5)+(5.25X0.10417)]X0.5X20 ÷ 27	=	1.60 C.Y.	Sta. 692+00 To 694+05.25 Lt.	[(4X20.25)+(0.5X2.8X4)] ÷ 9	=	90.60 S.Y.
Sta. 695+21.75 To 695+50	[(0.5X14X20)+(21.25X20)]X0.10417 ÷ 27	=	2.18 C.Y.	Sta. 692+00 To 694+22.05 Rt.	[(4X21.25)+(0.5X2.8X4)] ÷ 9	=	98.07 S.Y.
Sta. 695+50 To 695+56.62	6.62X0.10417X0.5X20 ÷ 27	=	0.26 C.Y.	Sta. 695+11.95 To 697+00 Lt.	[(4X18.25)+(0.5X2.8X4)] ÷ 9	=	82.96 S.Y.
	Total =		4.24 C.Y.	Sta. 695+28.75 To 697+00 Rt.	[(4X18.25)+(0.5X2.8X4)] ÷ 9	=	75.49 S.Y.
202- Wearing Course Removed (Ave. Depth 0.13')					Total =		347.12 S.Y.
Sta. 693+25 To 693+60.71	35.71X20.1 ÷ 9	=	79.75 S.Y.	Seal Coat ~ 347.12 X 0.3 = 104.14 Gal. Cover Aggregate ~ 347.12 X 0.008 = 2.78 C.Y.			
Sta. 695+56.62 To 695+75	18.38X20.3 ÷ 9	=	41.46 S.Y.				
	Total =		121.21 S.Y.				

ITEM LEGEND

- 1 611 13" Reinforced Concrete Approach Slab
- 2 404 1 1/4" Asphalt Concrete, AC-20
- 3 403 1 3/4" Asphalt Concrete, AC-20
- 4 403 Variable Depth Asphalt Concrete
- 5 407 Tack Coat @ 0.10 Gal./S.Y. And Cover Aggregate @ 7 lb./S.Y.
- 6 301 6" Bituminous Aggregate Base, AC-20, RT-11 or RT-12
- 7 409 Seal Coat Cover Agg. @ 0.008 C.Y./S.Y. & Seal Coat Bit. Mat. @ 0.3 Gal./S.Y.
- 8 659 Seeding And Mulching
- 9 606 Guardrail, Type 5
- 10 301 Variable (3" Ave.) Bituminous Aggregate Base (To be applied at the time of resurfacing.)

MOBILIZATION AS PER PLAN

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 300 SQ. FT. OF FLOOR SPACE WHICH SHALL BE IN ACCORDANCE WITH 619.01 AND 619.02. PAYMENT SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 624, MOBILIZATION, AS PER PLAN.

UNDERGROUND UTILITIES

THE LOCATIONS OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS OF THE UTILITY AS REQUIRED BY SECTION 153.64 ORC.

UTILITIES NOTIFICATION

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION OPERATIONS IN AN AREA WHICH MAY INVOLVE UNDERGROUND UTILITY FACILITIES, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, THE REGISTERED UTILITY PROTECTION SERVICE AND THE OWNERS OF EACH UNDERGROUND UTILITY FACILITY SHOWN IN THE PLANS.

THE OWNER OF THE UNDERGROUND UTILITY FACILITY SHALL, WITHIN FORTY-EIGHT HOURS, EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, AFTER NOTICE IS RECEIVED, STAKE, MARK OR OTHERWISE DESIGNATE THE LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING OR LOCATING SHALL BE CO-ORDINATED TO STAY APPROXIMATELY TWO DAYS AHEAD OF THE PLANNED CONSTRUCTION.

UTILITY OWNERSHIP

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT:

SANITARY SEWERS	CLERMONT COUNTY SEWER DISTRICT 2275 BAUER RD. BATAVIA, OHIO 45103 513-732-6550
TELEPHONE	CINCINNATI BELL TELEPHONE 201 EAST FOURTH ST. 102-274 P.O. BOX 2301 CINCINNATI, OHIO 45201 513-397-9900

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK FOR PLAN ITEMS SET UP TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. (THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.)

LOCATION OF GUARDRAIL

THE LOCATIONS OF GUARDRAIL RUNS, AS SHOWN IN THESE PLANS, ARE SUBJECT TO ADJUSTMENT PRIOR TO FINAL ACCEPTANCE. THE ENGINEER SHALL BE SATISFIED THAT ALL INSTALLATIONS WILL AFFORD MAXIMUM PROTECTION FOR TRAFFIC.

SEEDING

QUANTITIES FOR SEEDING ARE CALCULATED FOR THE SOIL AREAS BETWEEN TEN (10) FEET OUTSIDE THE WORK LIMITS, AS SHOWN ON THE CROSS SECTIONS, OR TO THE RIGHT-OF-WAY LINES, IF SUCH LINE IS LESS THAN TEN (10) FEET FROM THE WORK LIMITS.

TEMPORARY SOIL EROSION AND SEDIMENT CONTROL

THE FOLLOWING ESTIMATED QUANTITIES ARE TO BE USED AS DIRECTED BY THE ENGINEER, FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES:

207	STRAW OR HAY BALES	50 EACH
659	WATER	20 M. GAL.

REVIEW OF EXISTING FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT AND AGAIN BEFORE FINAL ACCEPTANCE BY THE STATE, REPRESENTATIVES OF THE STATE AND CONTRACTOR SHALL MAKE AN INSPECTION OF THE EXISTING PAVEMENT AND BERMS, UNDERDRAINS, CONDUITS, ETC., WITHIN THE WORK LIMITS. RECORDS OF INSPECTION SHALL BE KEPT IN WRITING BY THE STATE.

ALL EXISTING FACILITIES INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES SHALL BE LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION OR DAMAGE RESULTING FROM THE CONTRACTOR'S OPERATION SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE SATISFACTION OF THE STATE REPRESENTATIVE.

RESTORATION

ANY AREAS DISTURBED OUTSIDE THE WORK LIMITS WILL BE RESTORED BACK TO ITS ORIGINAL SHAPE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE STATE. ALL PARTS OF WORK SHALL BE LEFT IN AN ACCEPTABLE CONDITION.

TEMPORARY BRIDGE RAIL, AS PER PLAN

TYPE 5 GUARDRAIL USING TWO RAIL ELEMENTS WITHOUT SPACER BLOCKS ON INLET MOUNTED POSTS SHALL BE FURNISHED AND INSTALLED ON THE BRIDGE DECK AS SHOWN IN THE PLANS SO THAT ONE LANE IS PROVIDED FOR TRAFFIC AT ALL TIMES. THE TEMPORARY RAIL SHALL CONFORM TO THE DETAILS SHOWN ON SHEET 14.

AFTER ONE SIDE OF THE BRIDGE HAS BEEN REPLACED, THE TEMPORARY RAIL SHALL BE MOVED OVER TO ITS POSITION ON THE NEW DECK AS SHOWN ON THE PLANS. THIS ITEM SHALL INCLUDE FURNISHING, INSTALLING, MOVING AND REMOVING THE TEMPORARY RAIL AS WELL AS PROVIDING ANCHOR BOLTS, HOLES, SLEEVES AND ALL OTHER LABOR AND MATERIALS NECESSARY TO ATTACH THE POSTS TO THE DECK. PAYMENT WILL BE MADE AT THE CONTRACT BID PRICE FOR ITEMS 517 - LIN. FT. - TEMPORARY BRIDGE RAIL, AS PER PLAN.

PERMANENT PAVEMENT MARKINGS

DISTRICT MAINTENANCE FORCES WILL PROVIDE PERMANENT PAVEMENT MARKINGS AS BELOW:

STATION 688+50.7	10 L.F. STOP LINES
STATION 691+25 TO 697+75 4"	WHITE EDGE LINES
STATION 691+25 TO 697+75 4"	DOUBLE SOLID YELLOW CENTER LINES

AT THE COMPLETION OF THE PROJECT, THE PROJECT ENGINEER WILL NOTIFY THE MAINTENANCE DEPARTMENT CONCERNING THE ABOVE WORK.

TACK COAT

THE TACK COAT AND COVER AGGREGATE OPERATION SHALL BE DETERMINED AS PER SPEC. 407.05. PLAN QUANTITIES INDICATE AVERAGE APPLICATION RATES OF 0.1 GALLONS PER SQUARE YARD OF TACK COAT AND 7 POUNDS PER SQUARE YARD OF COVER AGGREGATE FOR ESTIMATING PURPOSES ONLY.

614 MAINTENANCE OF TRAFFIC

IT IS THE STATE'S INTENTION TO PERFORM THE REQUIRED WORK WITH THE LEAST INCONVENIENCE TO, AND MAXIMUM SAFETY OF THE TRAVELING PUBLIC AND THE CONTRACTOR. ANY VARIANCES FROM THESE MAINTENANCE OF TRAFFIC NOTES MUST BE APPROVED IN ADVANCE IN WRITING BY THE ENGINEER.

THE REQUIREMENTS FOR MAINTAINING TRAFFIC AS INDICATED IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS AND PERTINENT ITEMS OF THE SPECIFICATIONS AND PROPOSAL SHALL APPLY. BEFORE WORK BEGINS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER THE NAMES AND TELEPHONE NUMBERS OF PERSONS WHO CAN BE CONTACTED 24 HOURS A DAY BY THE OHIO DEPARTMENT OF TRANSPORTATION AND ALL INTERESTED POLICE AGENCIES. THESE PERSONS SHALL BE RESPONSIBLE FOR REPAIRING AND/OR ADJUSTING THE TEMPORARY TRAFFIC SIGNALS AND FOR PLACING AND REPLACING NECESSARY TRAFFIC CONTROL DEVICES TO MAINTAIN THE TRAVELED PAVEMENT SAFETY. THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. THE INSTALLATION AND OPERATION OF ALL TRAFFIC CONTROL AND TRAFFIC CONTROL DEVICES REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

THE TRAFFIC CONTROL AND TEMPORARY SIGNALS SHALL BE AS SHOWN ON SHEETS 4 & 5, WHICH APPLY TO BOTH LANE CLOSURES, THE SEQUENCE OF WHICH IS AS SET FORTH BY THE STAGE OF CONSTRUCTION NOTES ON SHEET 14.

THE TEMPORARY TRAFFIC SIGNALS SHALL BE OPERATED BY A CONTROLLER CAPABLE OF PROVIDING FOR EFFICIENT PEAK HOUR FLOWS, OR BE EQUIPPED WITH A MANUAL OVERRIDE. THE SIGNAL TIMING SHALL BE SET AS DIRECTED BY THE DISTRICT TRAFFIC ENGINEER. SIGNAL WIRING SHALL BE PLACED SO THAT TRAFFIC IS NOT REQUIRED TO RUN OVER ANY ENERGIZED CONDUCTORS. SIGNAL POWER MAY BE BY SERVICE FROM THE POWER COMPANY SERVICING THE AREA. SIGNAL EQUIPMENT SHALL CONFORM TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. CONTROL EQUIPMENT SHALL SEQUENCE AS PRESCRIBED BY THE MANUAL AND HAVE ADEQUATE CLEARANCE OF THE SINGLE LANE OF TRAFFIC PRIOR TO DISPLAYING AN OPPOSING GREEN INDICATION.

PAYMENT FOR ALL THE ABOVE WORK INCLUDING PROVIDING, MAINTAINING AND REMOVING ALL LIGHTS, SIGNS, SIGNALS, BARRICADES, DRUMS, CONES, REGULATORY SIGNS, REFERENCING THE EDGES OF EXISTING PAVEMENTS, AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE INCLUDED IN THE LUMP SUM BID FOR ITEM 614 - MAINTAINING TRAFFIC.

*TEMPORARY GUARDRAIL FOR ROADWAY PORTION

EROSION CONTROL (SODDED FLUME)

ITEM 660, REINFORCED SODDING, IS PROVIDED IN THE PLANS TO BE USED FOR EROSION CONTROL AT THE BRIDGE AS PER STANDARD DRAWING MC-7.

TEMPORARY PAVEMENT MARKINGS

NOTE B

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND WHEN NECESSARY, REMOVE TEMPORARY RETROREFLECTIVE PAVEMENT MARKINGS ON EXISTING, RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE MAINTAINED IN GOOD CONDITION DURING THE REQUIRED SERVICE PERIOD TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISIBILITY AND/OR REFLECTIVITY AT NO ADDITIONAL COST TO THE STATE.

MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE OF PAINT, PAVEMENT MARKING TAPE OR REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE).

A. PAINT

PAINT SHALL COMPLY WITH 708.14 AND SHALL BE APPLIED IN ACCORDANCE WITH 621 EXCEPT AS MODIFIED HEREIN.

B. PAVEMENT MARKING TAPE

FLEXIBLE RETROREFLECTIVE PREFORMED PRESSURE SENSITIVE TAPE SHALL HAVE STRAIGHT EDGES AND BE FREE OF CRACKS. THE TAPE SHALL CONSIST OF PIGMENT AND FILLERS WITH SUFFICIENT BINDER AND PLASTICIZER TO RETAIN GLASS BEADS HAVING A REFRACTIVE INDEX MEETING THE MINIMUM REFLECTIVE INTENSITY STANDARD STATED IN THE MANUFACTURERS INFORMATION. THE TAPE SHALL BE FLEXOLITE "WET REFLECTIVE", 3M "SCOTCHLANE", OR AN APPROVED EQUAL.

THE GLASS BEADS SHALL BE DISTRIBUTED UNIFORMLY THROUGHOUT THE TAPE WITH SUFFICIENT SURFACE BEADS TO PROVIDE OPTIMUM REFLECTORIZATION AT ALL TIMES.

PAVEMENT MARKING TAPE SHALL COMPLY WITH THE COLOR REQUIREMENTS OF 708.14.

THE TAPE SHALL HAVE A PRECOATED ADHESIVE LAYER FOR PAVEMENT APPLICATION WITHOUT THE USE OF HEAT, SOLVENTS OR ADDITIONAL ADHESIVES. THE ADHESIVE SHALL BE SUFFICIENT TO RETAIN COMPLETE MARKINGS ON THE PAVEMENT SURFACE THROUGHOUT THE USEFUL LIFE OF THE MARKINGS.

IN ADDITION TO THE FOREGOING, ALL TEMPERATURE APPLICATION REQUIREMENTS AND OTHER APPLICABLE MANUFACTURERS MATERIAL AND APPLICATION INSTRUCTIONS SHALL BE FOLLOWED.

WHEN APPROVED BY THE ENGINEER THE CONTRACTOR MAY USE REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE), IN LIEU OF THAT DESCRIBED ABOVE, TO FACILITATE REMOVAL OF MARKINGS.

C. REMOVABLE PAVEMENT MARKING TAPE (TYPE R TAPE)

THE MARKING MATERIAL SHALL BE A MIXTURE OF POLYMERIC MATERIALS, PIGMENTS, REINFORCING MEDIUM TO FACILITATE REMOVAL, GLASS BEADS THROUGHOUT THE PIGMENTED PORTION, AND A RETROREFLECTIVE LAYER OF GLASS BEADS BONDED TO THE TOP SURFACE.

THE TAPE SHALL BE PRECOATED WITH A PRESSURE SENSITIVE ADHESIVE CAPABLE OF TEMPORARILY BONDING TO ASPHALT CONCRETE OR PORTLAND CEMENT CONCRETE PAVEMENT AT AN AMBIENT TEMPERATURE OF NOT LESS THAN 50° F AND RISING, AT A PAVEMENT TEMPERATURE OF NOT LESS THAN 50° F NOR MORE THAN 150° F, WITHOUT THE USE OF HEAT, SOLVENTS, AND ADDITIONAL ADHESIVES OR ACTIVATORS.

MATERIALS SHALL CONFORM TO THE COLOR REQUIREMENTS OF 708.14.

THE TAPE SHALL BE REMOVABLE FROM ASPHALT AND PORTLAND CEMENT CONCRETE INTACT OR IN LARGE PIECES AT TEMPERATURES ABOVE 40° F WITHOUT USE OF HEAT, SOLVENTS, GRINDING, OR SANDBLASTING. REMOVAL SHALL NOT RESULT IN DAMAGE TO OR OBJECTIONABLE STAINING OF THE PAVEMENT.

GLASS BEADS SHALL BE PROVIDED IN A PROPER SIZE, QUANTITY AND DISTRIBUTION TO ASSURE OPTIMUM RETROREFLECTIVITY AS THE FILM WEARS. THE FOLLOWING INITIAL AVERAGE REFLECTANCE VALUES AT 86.0 ENTRANCE ANGLE AS MEASURED IN ACCORDANCE WITH THE TESTING PROCEDURES OF FEDERAL TEST METHOD 370 SHALL BE CERTIFIED:

	WHITE		YELLOW	
OBSERVATION ANGLE	0.2	0.5	0.2	0.5
SPECIFIC LUMINANCE	1770	1270	1310	810
(MCD/FT ²)/FC				

THE TAPE SHALL BE 3-M COMPANY'S "STAMARK, DETOUR GRADE (SERIES 57L0, 57L1, 6270, 6211)" OR AN APPROVED EQUAL.

THE CONTRACTOR SHALL FURNISH TO THE ENGINEER CERTIFICATION THAT THE MATERIAL SUPPLIED MEETS THE PROPERTIES SPECIFIED HEREIN.

LAYOUT

THE TEMPORARY MARKINGS SHALL BE ACCURATELY LAID OUT IN CONFORMANCE WITH 621.051 AND SHALL BE LOCATED IN A TRUE LINE ON THE CENTER LINE, LANE LINE, EDGE LINE, OR CHANNELIZING LINE WHERE PERMANENT MARKINGS WOULD LIE UNLESS OTHERWISE SPECIFIED IN THE PLANS.

PLACEMENT

TEMPORARY MARKINGS SHALL BE PLACED IN ACCORDANCE WITH LAYOUTS ON SHEETS 4 AND THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE PLANS.

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS ARE NO LONGER NEEDED, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134 AND NECESSARY PAVEMENT MARKINGS INSTALLED BEFORE THE FLOW OF TRAFFIC IS CHANGED TO THE NEXT PHASE OR RETURNED TO ITS NORMAL CHANNEL.

WHERE PERMANENT PAVEMENT MARKINGS ARE CALLED FOR IN THE PLANS, THE CONTRACTOR SHALL FURNISH AND PLACE THE PERMANENT MARKINGS WITHIN 30 CALENDAR DAYS FOLLOWING COMPLETION OF ALL SURFACE COURSES IN A SINGLE ROADWAY OR PRIOR TO THE END OF THE CONSTRUCTION SEASON, WHICHEVER COMES FIRST. PERMANENT MARKINGS SHALL NOT BE PLACED OVER ANY TAPE MARKINGS.

A. CLASS I MARKINGS

CLASS I MARKINGS SHALL BE AS DEFINED IN 621, EXCEPT AS FOLLOWS:

- 1) LANE LINES SHALL BE 4-INCHES IN WIDTH.
- 2) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
- 3) STOP LINES SHALL BE 12-INCHES IN WIDTH.
- 4) CROSS WALK LINES SHALL BE 8-INCHES IN WIDTH.

GORE MARKINGS SHALL CONSIST OF TWO CHANNELIZING LINES PLACED AT THE THEORETICAL OR TEMPORARY GORE OF RAMPS AND DIVERGING OR CONVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR SOLID 4-INCH LINES, 24 GALLONS PER MILE FOR SOLID 6-INCH LINES, 48 GALLONS PER MILE FOR SOLID 12-INCH LINES, AND 4 GALLONS PER MILE FOR 4-INCH DASHED LINES.

B. CLASS II MARKINGS

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

CHANNELIZING LINES SHALL CONSIST OF WHITE 12-INCH BY 4-INCH DASHES SPACED AT A MAXIMUM OF 20-FOOT INTERVALS.

GORE MARKINGS SHALL BE TWO CONTINUOUS, WHITE 50-FOOT BY 4-INCH LINES PLACED AT THE THEORETICAL GORE OF AN EXIT RAMP OR DIVERGING ROADWAYS.

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR GORE MARKINGS, 0.8 GALLONS PER MILE FOR CHANNELIZING LINE, AND 0.4 GALLONS PER MILE FOR LANE LINE AND CENTER LINE.

CONFLICTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL EXISTING CONFLICTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. DASHED LINE QUANTITIES WILL BE THE LENGTH OF THE COMPLETED STRIPE, INCLUDING GAPS, INTERSECTIONS, AND OTHER SECTIONS OF PAVEMENT NOT NORMALLY MARKED, IN ACCORDANCE WITH 621.15.

TEMPORARY PAVEMENT MARKINGS WILL INCLUDE THE LAYOUT, APPLICATION AND REMOVAL OF THE MARKINGS, WHEN REQUIRED.

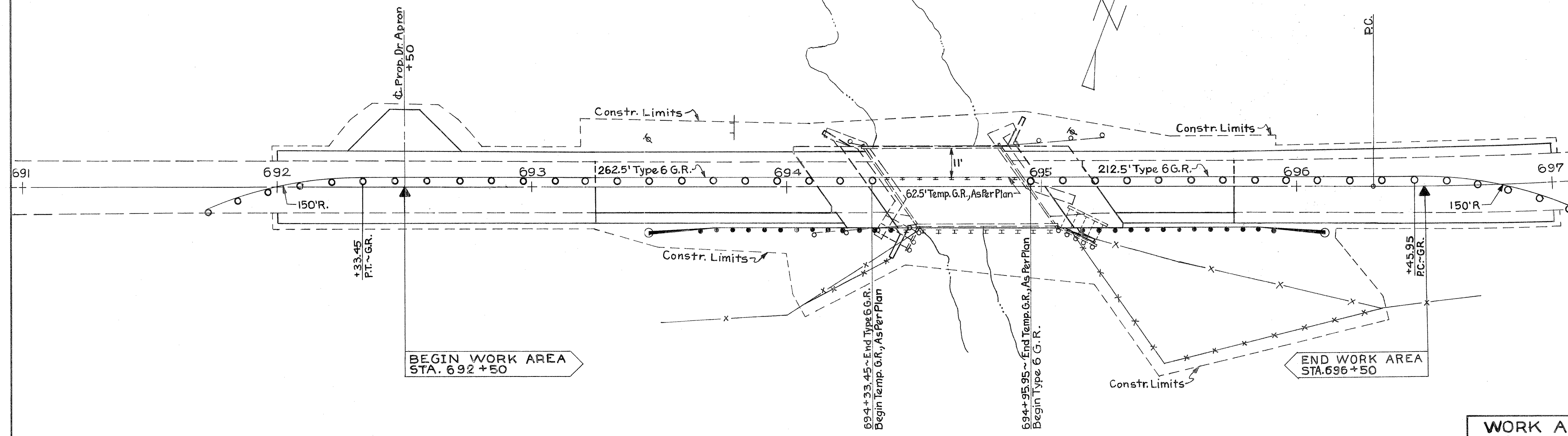
BASIS OF PAYMENT

PAYMENT FOR ACCEPTED QUANTITIES COMPLETE IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL

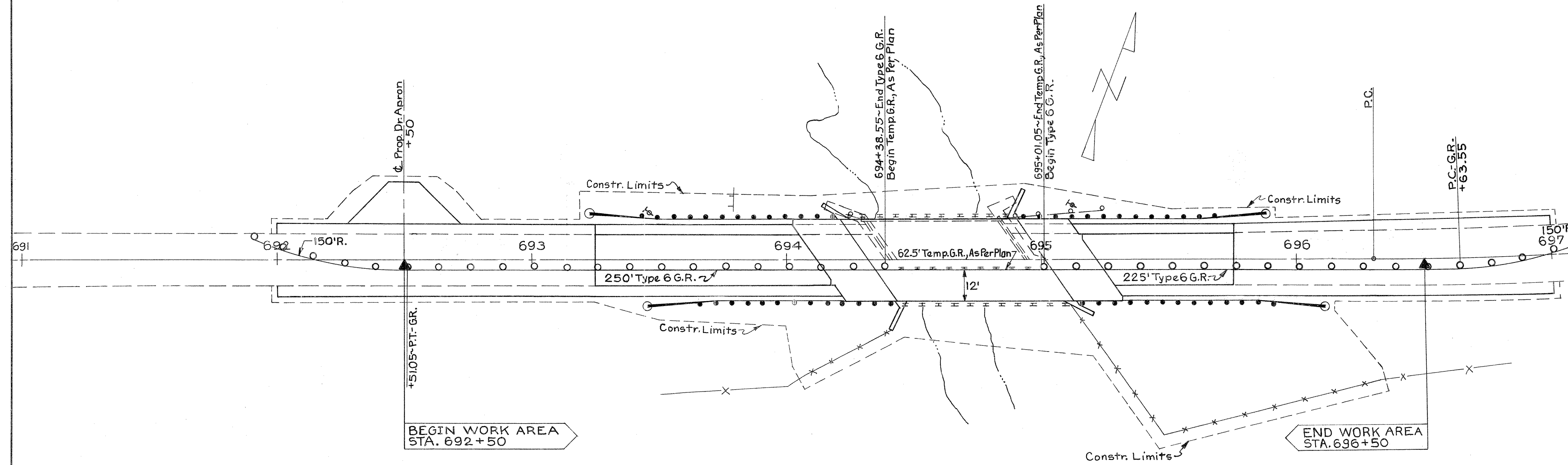
COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND NECESSARY REMOVAL OF THE MARKINGS.

ITEM	UNIT	DESCRIPTION
614	MILES	TEMPORARY LANE LINES, CLASS _____, (PAINT, TAPE OR TYPE R TAPE)
614	MILES	TEMPORARY CENTER LINES, CLASS _____, (PAINT, TAPE OR TYPE R TAPE)
614	MILES/LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS _____, (PAINT, TAPE OR TYPE R TAPE)
614	MILES	TEMPORARY EDGE LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	LIN. FT.	TEMPORARY GORE MARKING, CLASS II, (PAINT, TAPE OR TYPE R TAPE)
614	LIN. FT.	TEMPORARY STOP LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	EACH	TEMPORARY LANE ARROWS, CLASS I, (PAINT, TAPE OR TYPE R TAPE)
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, (PAINT OR TAPE)
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, (PAINT, TAPE OR TYPE R TAPE)

CLE - 132 - 13.16



WORK AREA DETAIL
RIGHT LANE CLOSURE



WORK AREA DETAIL
LEFT LANE CLOSURE

GENERAL SUMMARY

CALC. K.E.M.
BY 4/01/83
DATE
CHKD. R.E.R.
BY 4/26/83
DATE

OHIO

FHWA
REGION 5

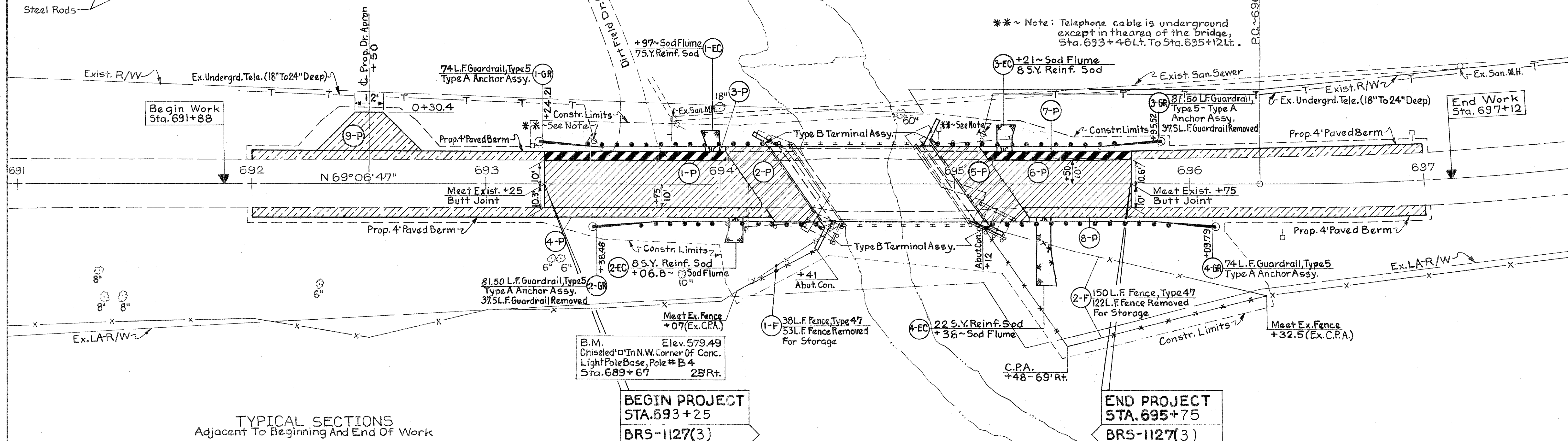
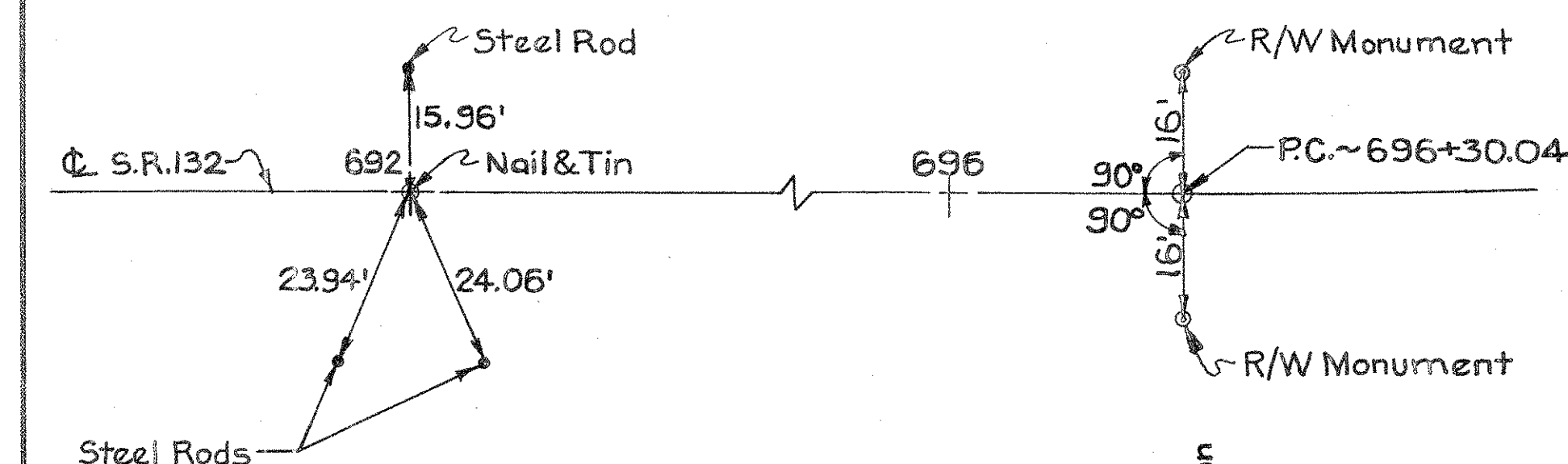
6

21

CLE-132-13.16

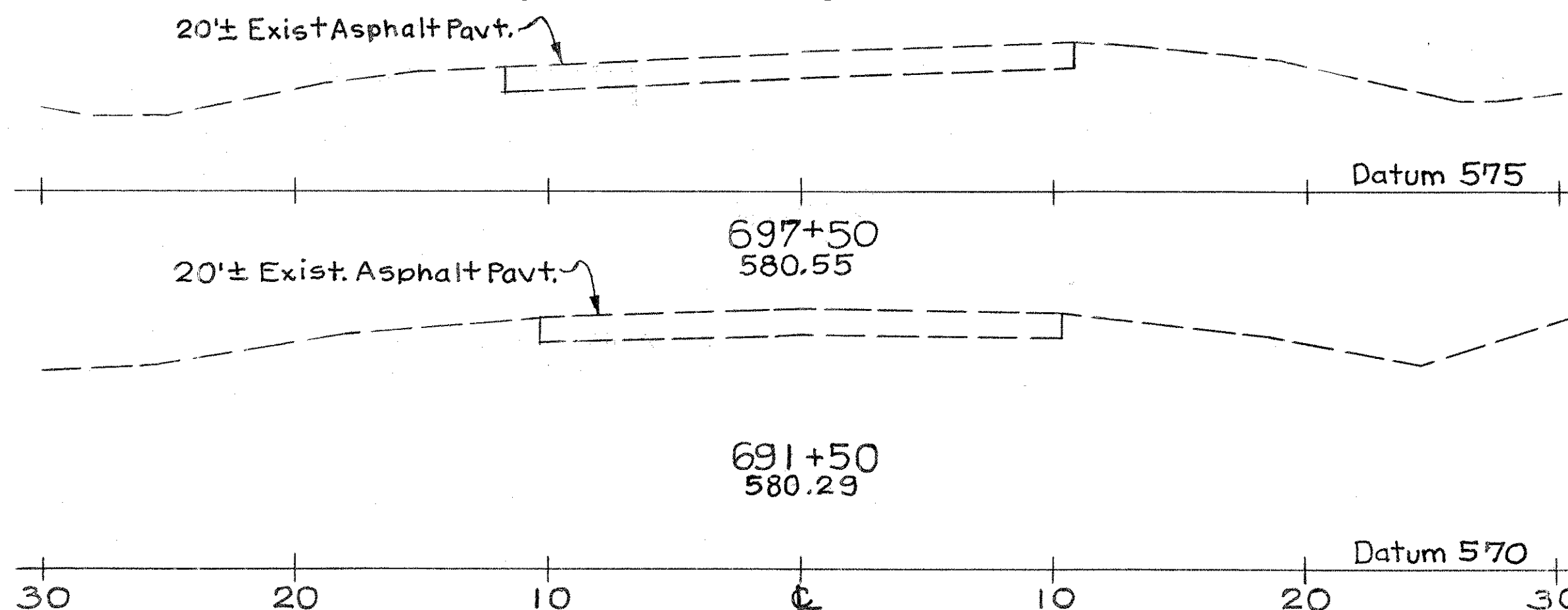
SHEET NUMBER																				ITEM	QUANT.	UNIT	DESCRIPTION
																							ROADWAY
																				201	Lump		Clearing And Grubbing
																				202	122	Sq.Yd.	Wearing Course Removed
																				203	128	Cu.Yd.	Excavation Not Including Embankment Construction
																				203	43	Cu.Yd.	Embankment
																				203	143	Sq.Yd.	Subgrade Compaction
																				202	75	Lin.Ft.	Guardrail Removed
																				606	311	Lin.Ft.	Guardrail, Type 5
																				606	4	Each	Bridge Terminal Assembly, Standard Type B
																				606	4	Each	Anchor Assembly, Standard Type A
																				202	175	Lin.Ft.	Fence Removed For Storage
																				607	188	Lin.Ft.	Fence, Type 47
																							PAVEMENT
																				301	77	Cu.Yd.	Bituminous Aggregate Base AC-20 Or RT-11 Or RT-12
																				403	20	Cu.Yd.	Asphalt Concrete AC-20
																				404	11	Cu.Yd.	Asphalt Concrete AC-20
																				407	32	Gal.	Tack Coat
																				407	1	Tons	Cover Aggregate
																				409	104	Gal.	Seal Coat, Bituminous Material
																				409	3	Cu.Yd.	Seal Coat, Cover Aggregate No.8
																				611	143	Sq.Yd.	Reinforced Concrete Approach Slabs (T=13")
																							EROSION CONTROL
																				207	50	Each	Straw Or Hay Bales
																				659	20	MGal.	Water
																				659	1500	Sq.Yd.	Seeding And Mulching
																				659	0.14	Tons	Commercial Fertilizer
																				660	45	Sq.Yd.	Reinforced Sodding, Standard
																							STRUCTURES
																							For Structure Quantities See Sheet No. 20
																							TRAFFIC CONTROL
																				614	0.109	Miles	Temporary Center Lines, Class I Paint, Double Solid
																				614	40	Lin.Ft.	Temporary Stop Lines, Class I, Type R Tape
																				614	0.123	Miles	Temporary Center Lines Class II

References



**~ Note: Telephone cable is underground except in the area of the bridge, Sta. 693+46 Lt. To Sta. 695+12 Lt.

TYPICAL SECTIONS Adjacent To Beginning And End Of Work



PAVEMENT LEGEND

404 1 1/4"
403 1 3/4"
403 0" Min (1 1/4" Ave)
407 Tack Coat @ 0.1 Gal./S.Y.
407 Cover Agg. @ 7 lb./S.Y.

611 13" Reinf. Conc. Appr. Slab

301 6"
301 Variable (3" Ave.)
409 Bit. Material @ 0.3 Gal./S.Y.
409 No. 8 Cover Agg. @ 0.008 C.Y./S.Y.

To be applied at time of resurfacing

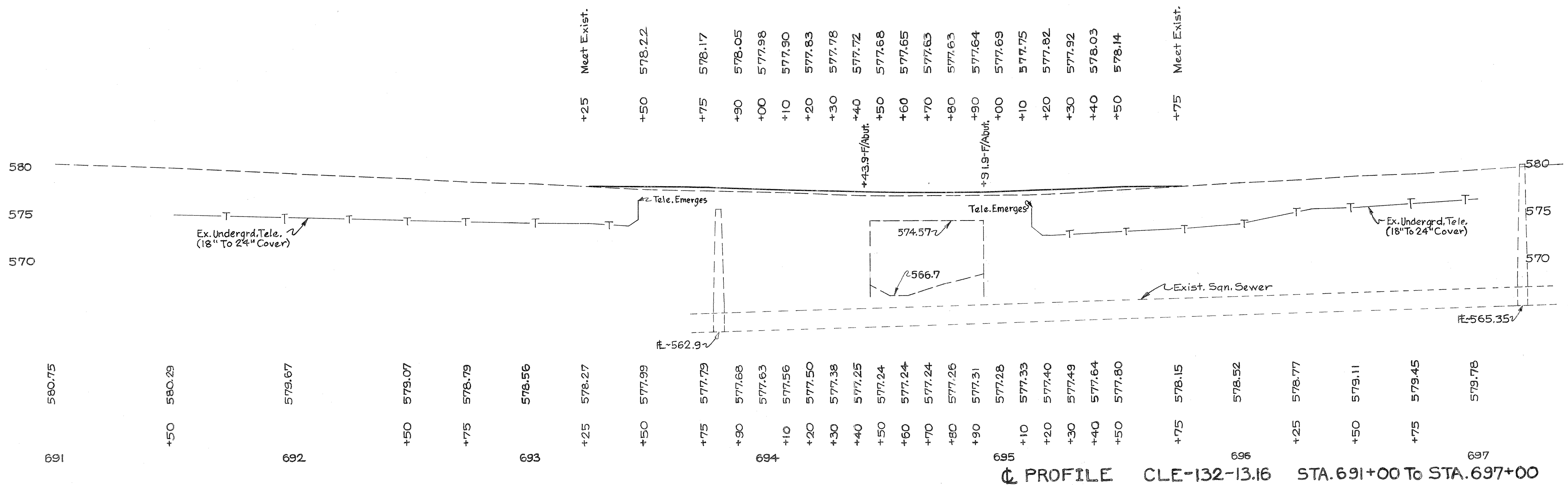
301 6"
*409 No. 8 Cover Agg. @ 0.008 C.Y./S.Y.
*409 Bit. Material @ 0.3 Gal./S.Y.

*~ Note: Do not use on drive (To be applied at time of resurfacing)

Quantity Calculations Item 660 Reinf. Sod (Sod Flumes)

1-EC	Sta. 693+97 Lt.	(6x4)+(6+7.5÷2x5)+9	= 6.40 S.Y.
2-EC	Sta. 694+06.8 Rt.	(6x4)+(6+7.5÷2x7)+9	= 7.92 S.Y.
3-EC	Sta. 695+21 Lt.	(6x6)+(6+7.5÷2x5)+9	= 7.75 S.Y.
4-EC	Sta. 695+38 Rt.	(6x13.5)+(6+7.5÷2x10)+(7.5+9÷2x5.7)+9	= 21.73 S.Y.

CLE-132-13.16

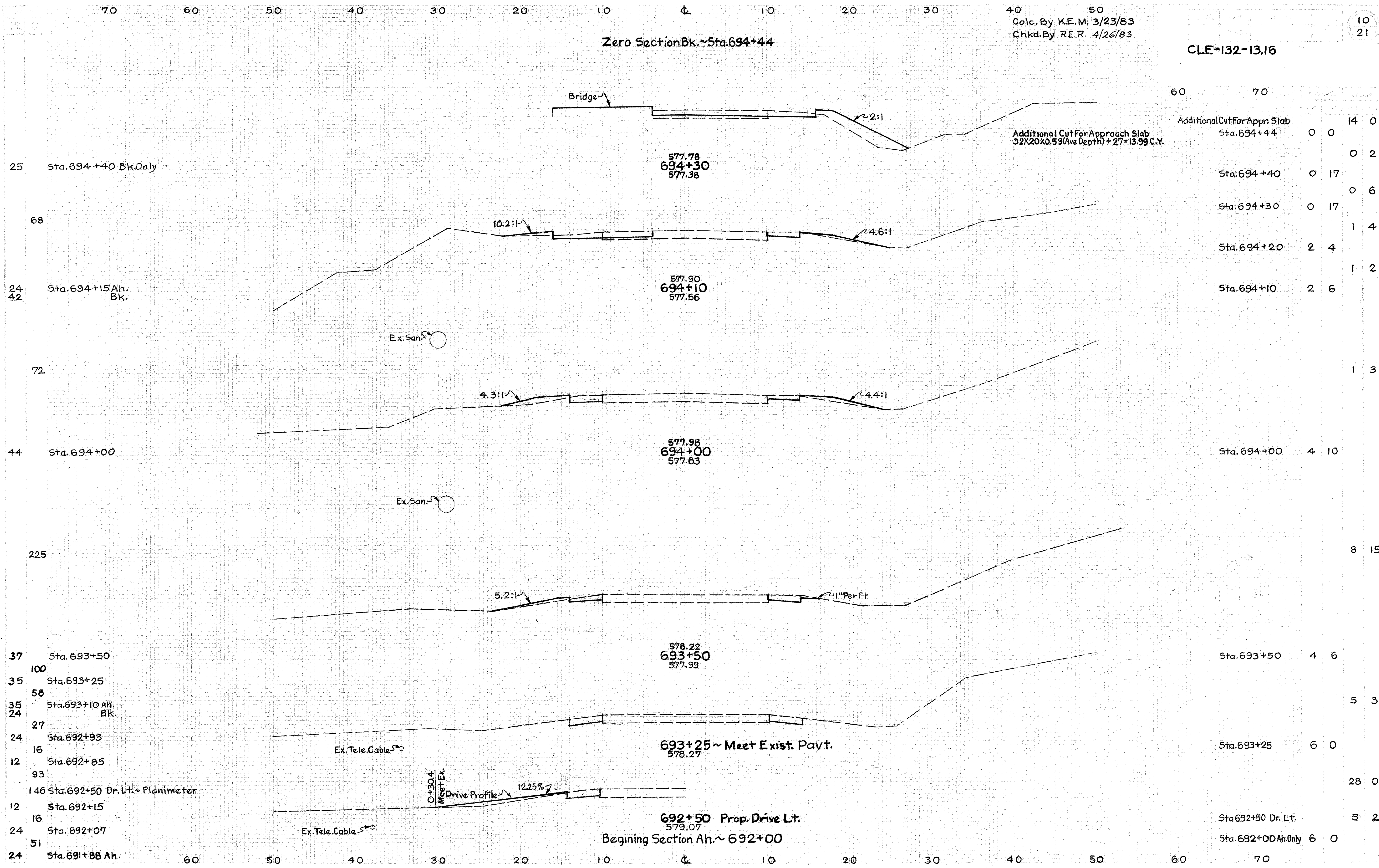


SUMMARY OF ALIGNMENT SHEET QUANTITIES

Calc. By K.E.M 3/23/83
Chkd. By R.E.R. 4/26/83

FHWA REGION	STATE	PROJECT	
5	OHIO		

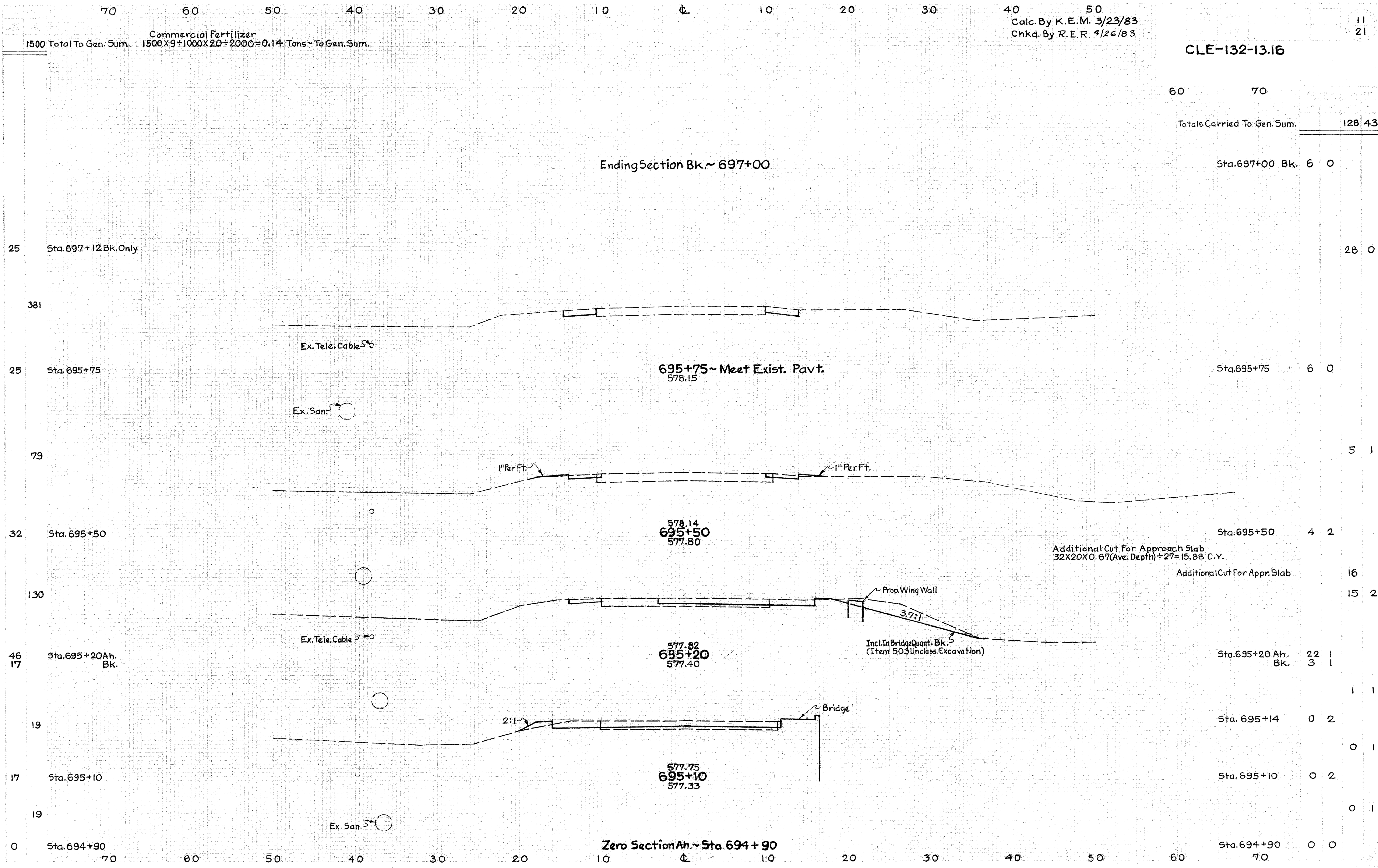
$$\frac{9}{2}$$
[illegible]



Calc. By K.E.M. 3/23/83
Chkd. By R.E.R. 4/26/83

CLE-132-13.16

60		70		80		90		100	
Additional Cut For Appr. Slab		Sta. 694+44		0		0		14	
		Sta. 694+40		0		17		0	
		Sta. 694+30		0		17		0	
		Sta. 694+20		2		4		1	
		Sta. 694+10		2		6		1	
		Sta. 694+00		4		10		8	
		Sta. 693+50		4		6		5	
		Sta. 693+25		6		0		28	
		Sta. 692+50 Dr. Lt.						5	
		Sta. 692+00 Ah. Only		6		0			



1500 Total To Gen. Sum. Commercial Fertilizer
 $1500 \times 9 \div 1000 \times 20 \div 2000 = 0.14$ Tons ~ To Gen. Sum.

Calc. By K.E.M. 3/23/83
Chkd. By R.E.R. 4/26/83

CLE-132-13.16

11
21

Totals Carried To Gen. Sum.		128	43
-----------------------------	--	-----	----

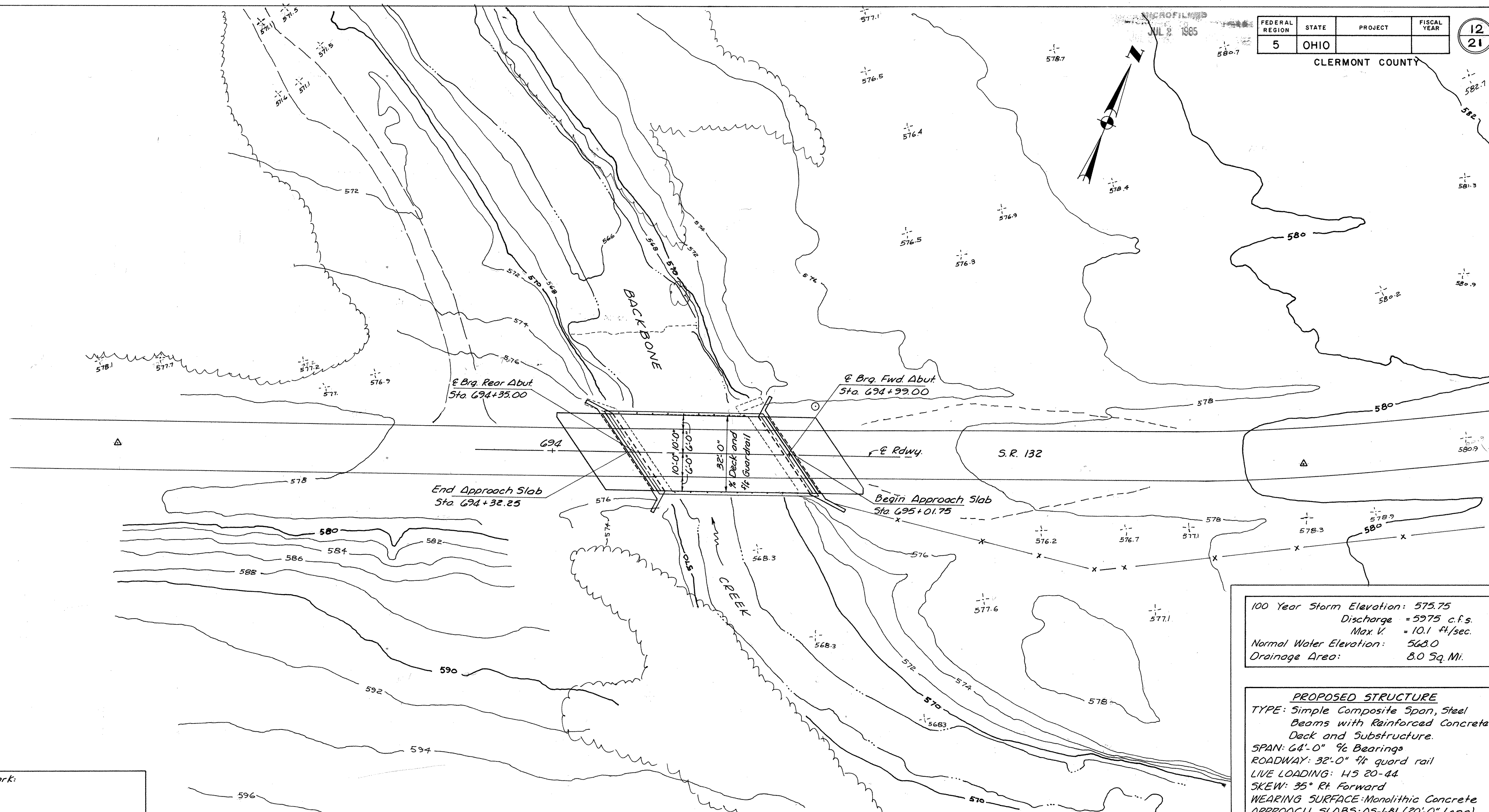
Ending Section Bk. ~ 697+00		Sta. 697+00 Bk.		6	0
25	Sta. 697+12 Bk. Only				28 0
381					
25	Sta. 695+75	695+75 ~ Meet Exist. Pavt. 578.15	Sta. 695+75	6	0
79					5 1
32	Sta. 695+50	578.14 695+50 577.80	Sta. 695+50	4	2
130			Additional Cut For Approach Slab $32 \times 20 \times 0.67 (\text{Ave. Depth}) \div 27 = 15.88 \text{ C.Y.}$		16
46 17	Sta. 695+20 Ah. Bk.	577.82 695+20 577.40	Sta. 695+20 Ah. Bk.	22 3	1 1
19					1 1
17	Sta. 695+10	577.75 695+10 577.33	Sta. 695+10	0	2
19					0 1
0	Sta. 694+90	Zero Section Ah. ~ Sta. 694+90	Sta. 694+90	0	0

FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		

12
21

CLERMONT COUNTY

JUL 2 1985



100 Year Storm Elevation: 575.75
 Discharge = 5975 c.f.s.
 Max V. = 10.1 ft/sec.
 Normal Water Elevation: 568.0
 Drainage Area: 8.0 Sq. Mi.

PROPOSED STRUCTURE
 TYPE: Simple Composite Span, Steel Beams with Reinforced Concrete Deck and Substructure.
 SPAN: 64'-0" 1/2 Bearings
 ROADWAY: 32'-0" 1/2 guard rail
 LIVE LOADING: HS 20-44
 SKEW: 35° Rt. Forward
 WEARING SURFACE: Monolithic Concrete
 APPROACH SLABS: A5-I-B1 (20'-0" Long)
 ALIGNMENT: Tangent
 SUPERELEVATION: None

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 CINCINNATI, OHIO

1 / 10

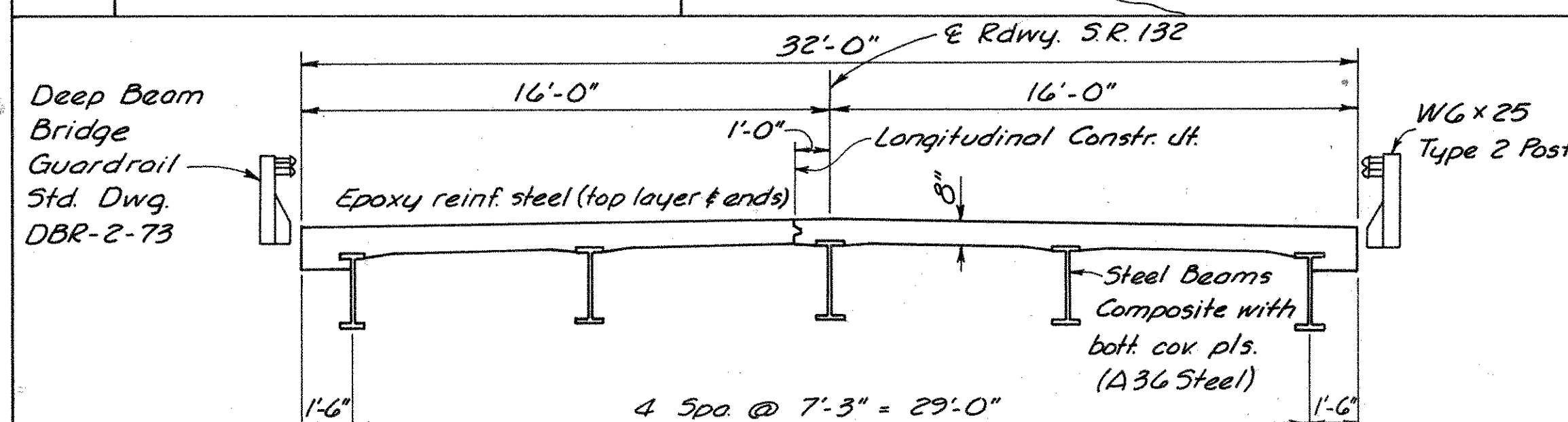
SITE PLAN

BRIDGE NO. CLE-132-1316
 OVER BACKBONE CREEK

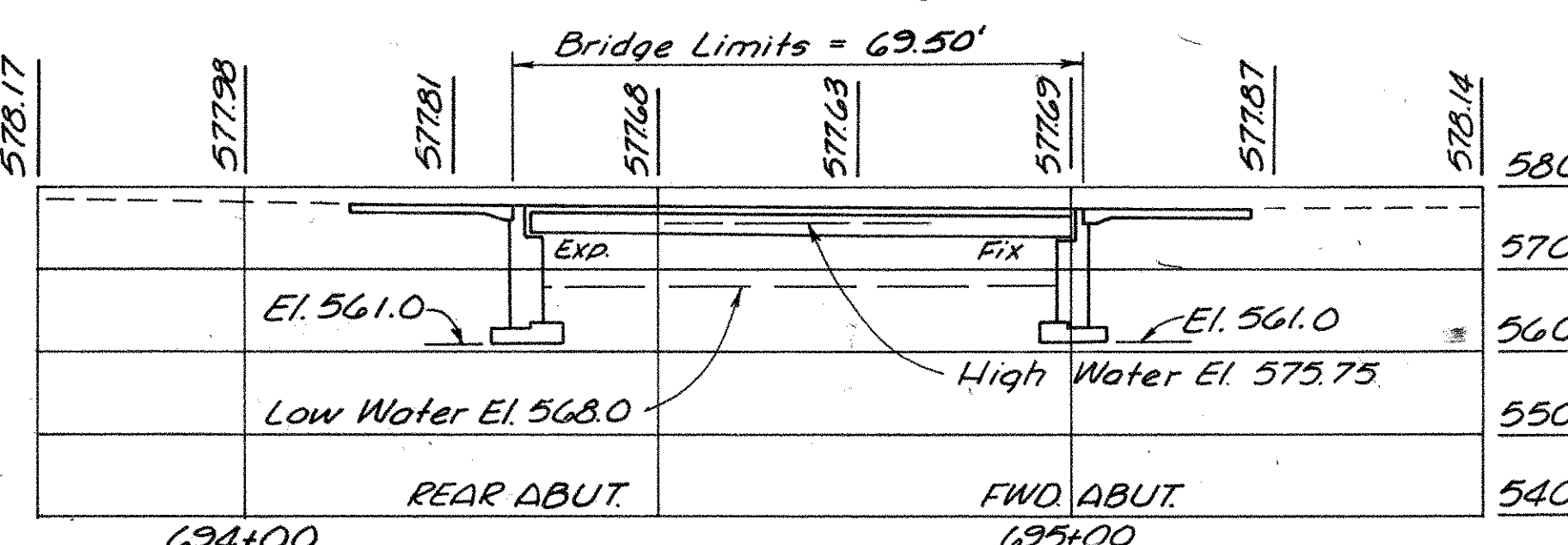
SCALE 1" = 20' CLERMONT COUNTY

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVIEWED
	SRU		WJL	JHO 9/24/82	

Bench Mark:



TYPICAL SECTION



PROFILE

EXISTING BRIDGE DATA
 TYPE: Creosoted Timber Floor with Asphalt Concrete wearing surface with Steel I Beams on Part Stone and Timber Piling Abutments.
 SPAN: Approximately 53'-6"
 ROADWAY: 30'-0" 1/2 Railing
 LOADING: H-15
 SKEW: 35° 15' Rt. Forward
 CONDITION: Poor

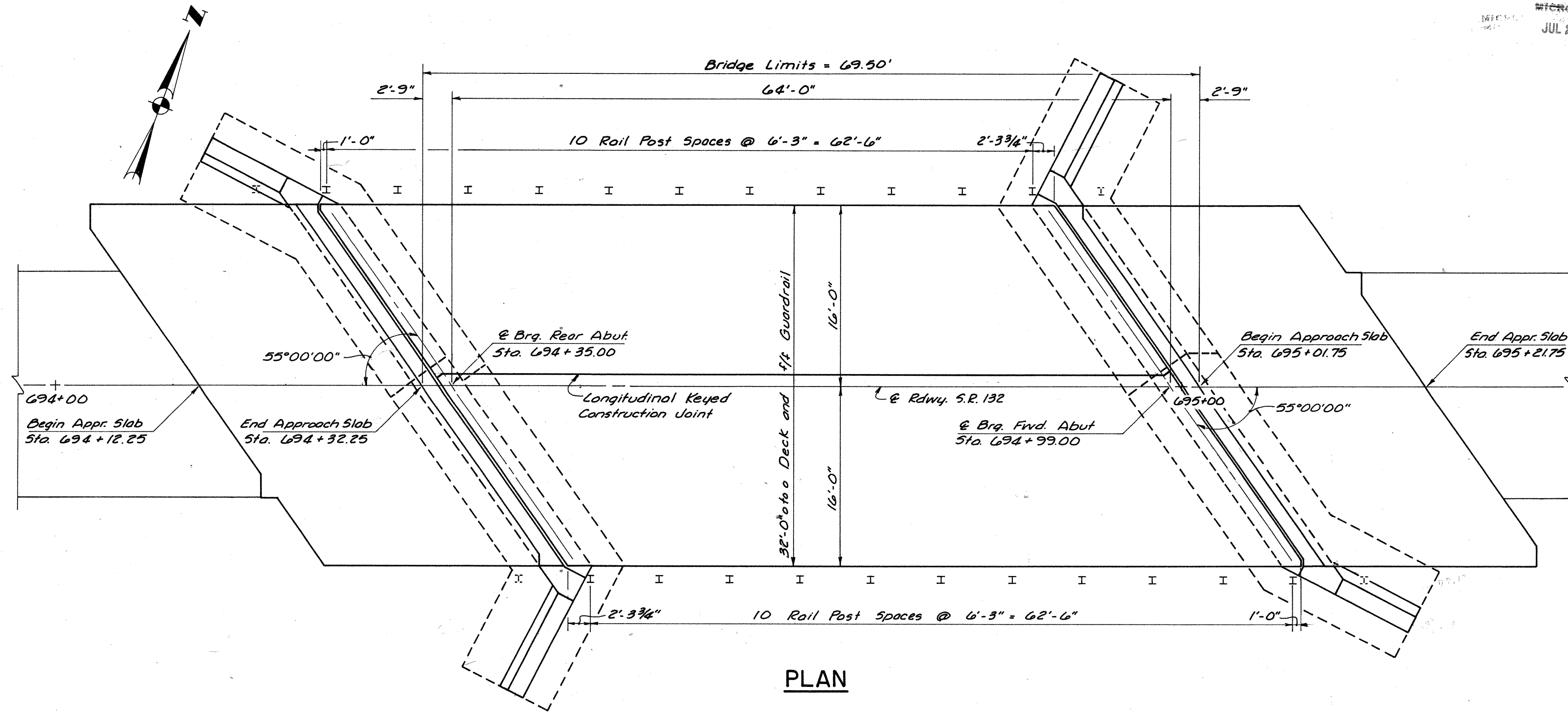
Date of reconstruction of existing bridge: 1932 Approx
 Waterway Opening: 300 sq. ft.
 Waterway Opening: 350 sq. ft. (proposed)

MICROFILMED
JUL 2 1985

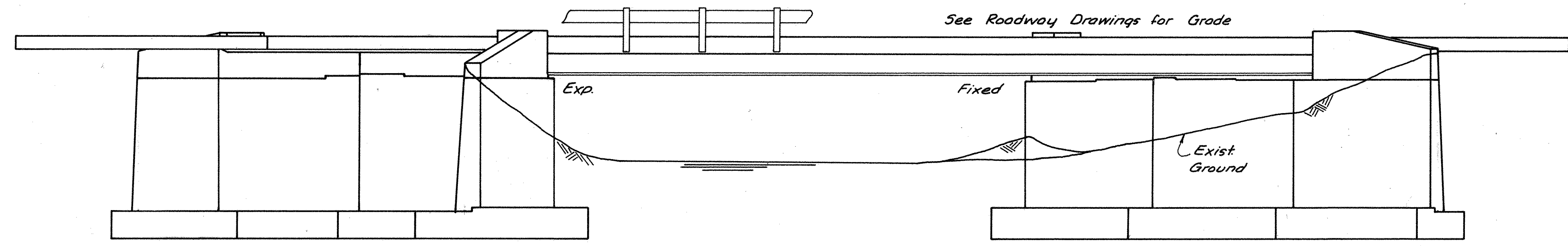
FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		

13
21

CLE-132-13.16



PLAN



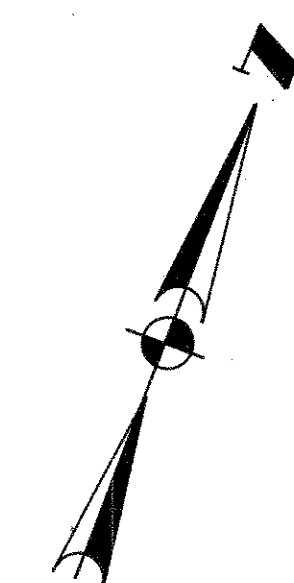
ELEVATION

HAZELET & ERDAL CONSULTING ENGINEERS CINCINNATI, OHIO						2 / 10
GENERAL PLAN & ELEVATION						
BRIDGE NO. CLE-132-1316 OVER BACKBONE CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED	
	SRU		WL	JHO 9/24/82		

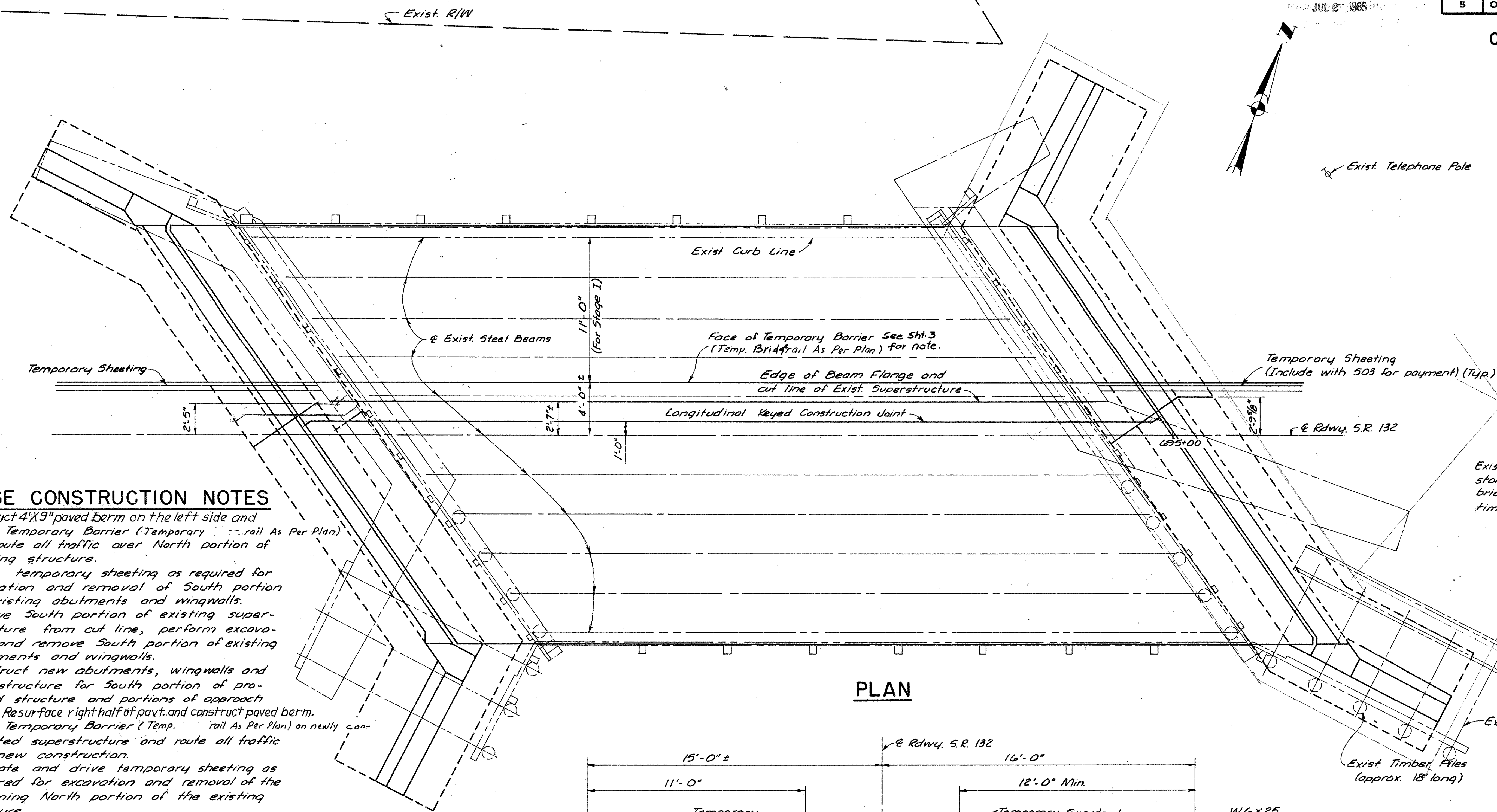
CLE-132-13.16

MICROFILMED

JUL 2 1985



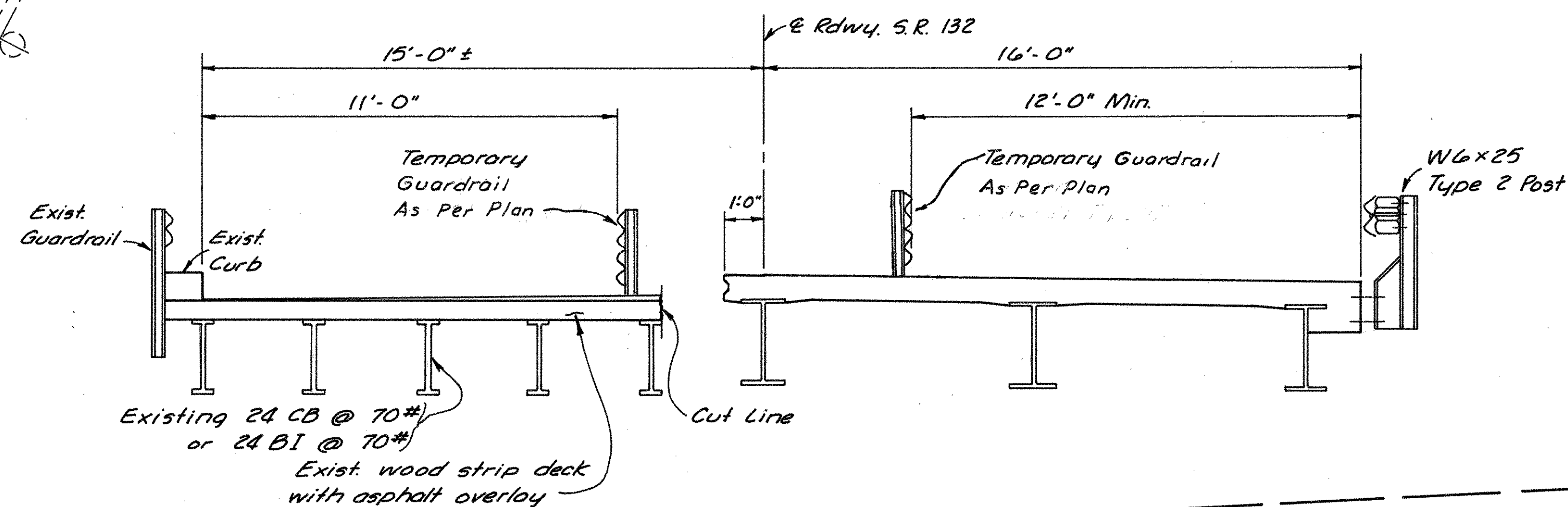
Exist. Telephone Pole



STAGE CONSTRUCTION NOTES

1. Construct 4'X9" paved berm on the left side and erect Temporary Barrier (Temporary Bridge Rail As Per Plan) and route all traffic over North portion of existing structure.
2. Drive temporary sheet piling as required for excavation and removal of South portion of existing abutments and wingwalls.
3. Remove South portion of existing superstructure from cut line, perform excavation and remove South portion of existing abutments and wingwalls.
4. Construct new abutments, wingwalls and superstructure for South portion of proposed structure and portions of approach slabs. Resurface right half of pavt. and construct paved berm.
5. Erect Temporary Barrier (Temporary Bridge Rail As Per Plan) on newly constructed superstructure and route all traffic over new construction.
6. Relocate and drive temporary sheet piling as required for excavation and removal of the remaining North portion of the existing structure.
7. Complete construction of the North portions of the proposed abutments, wingwalls and superstructure.
8. Remove temporary sheet piling.
9. Complete construction of approach slabs.
10. Remove Temporary Barrier (Temporary Bridge Rail As Per Plan) from South portion of new structure.
11. Resurface left half of pavement and complete construction of paved berm.

PLAN



TYPICAL SECTION (LOOKING EAST)

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CINCINNATI, OHIO

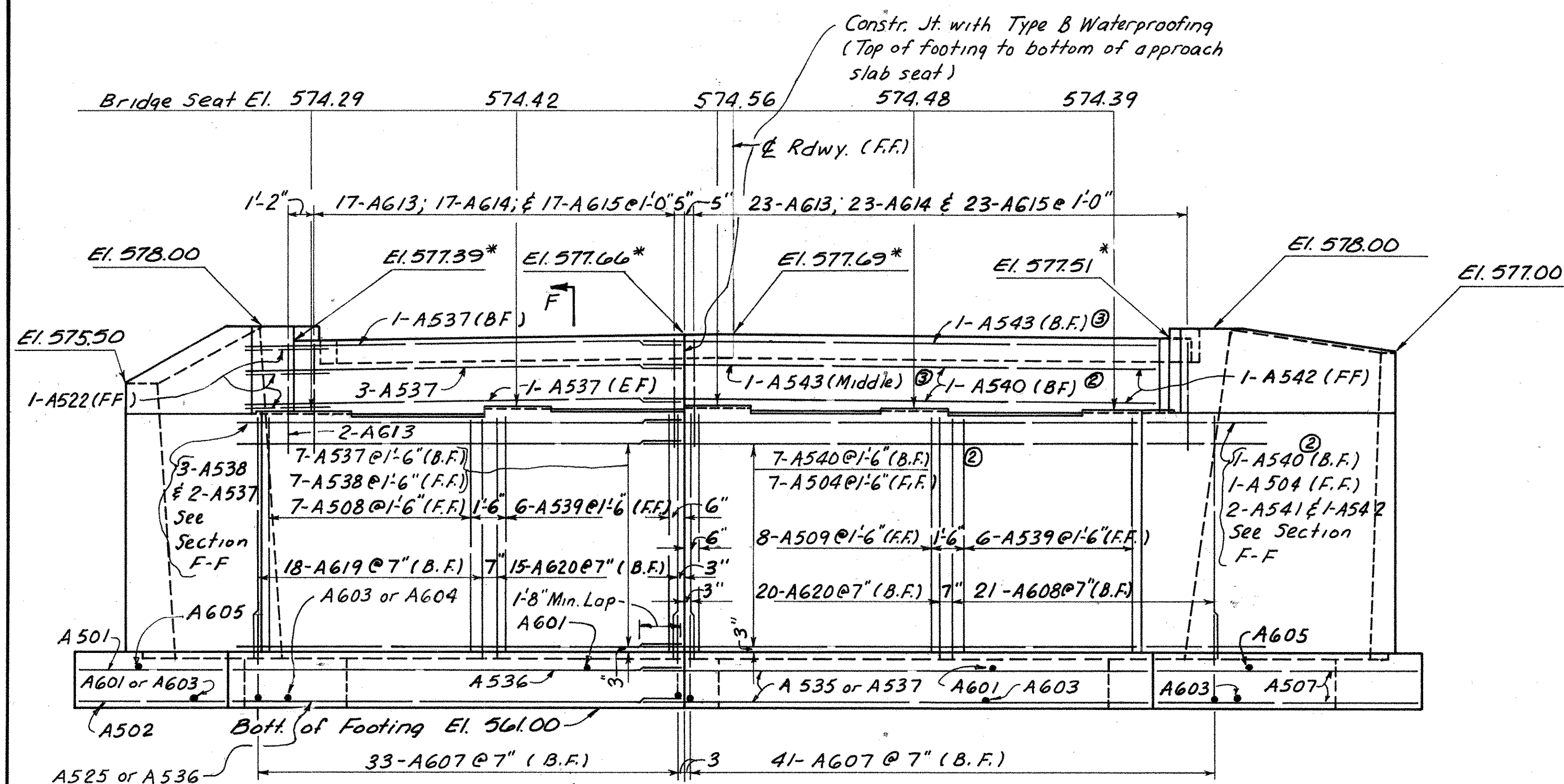
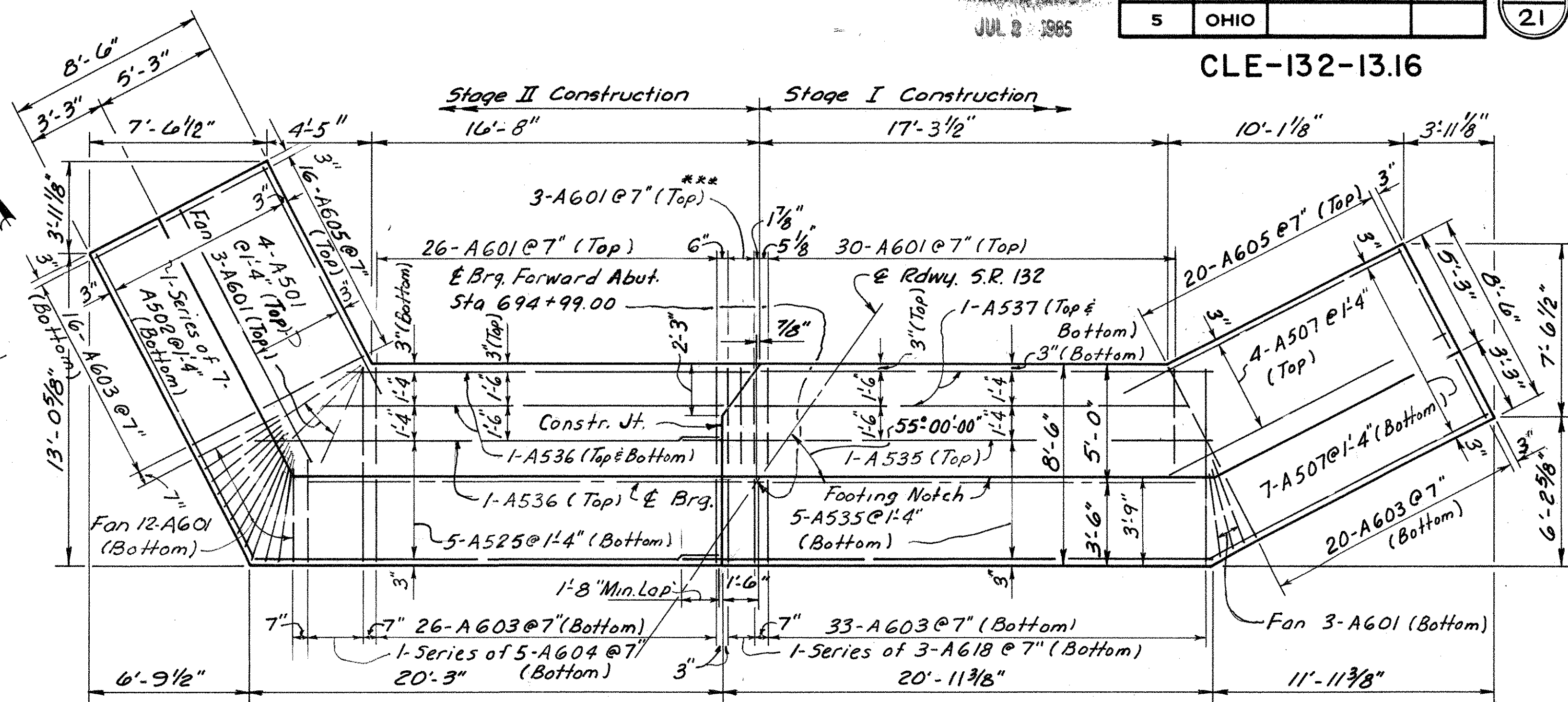
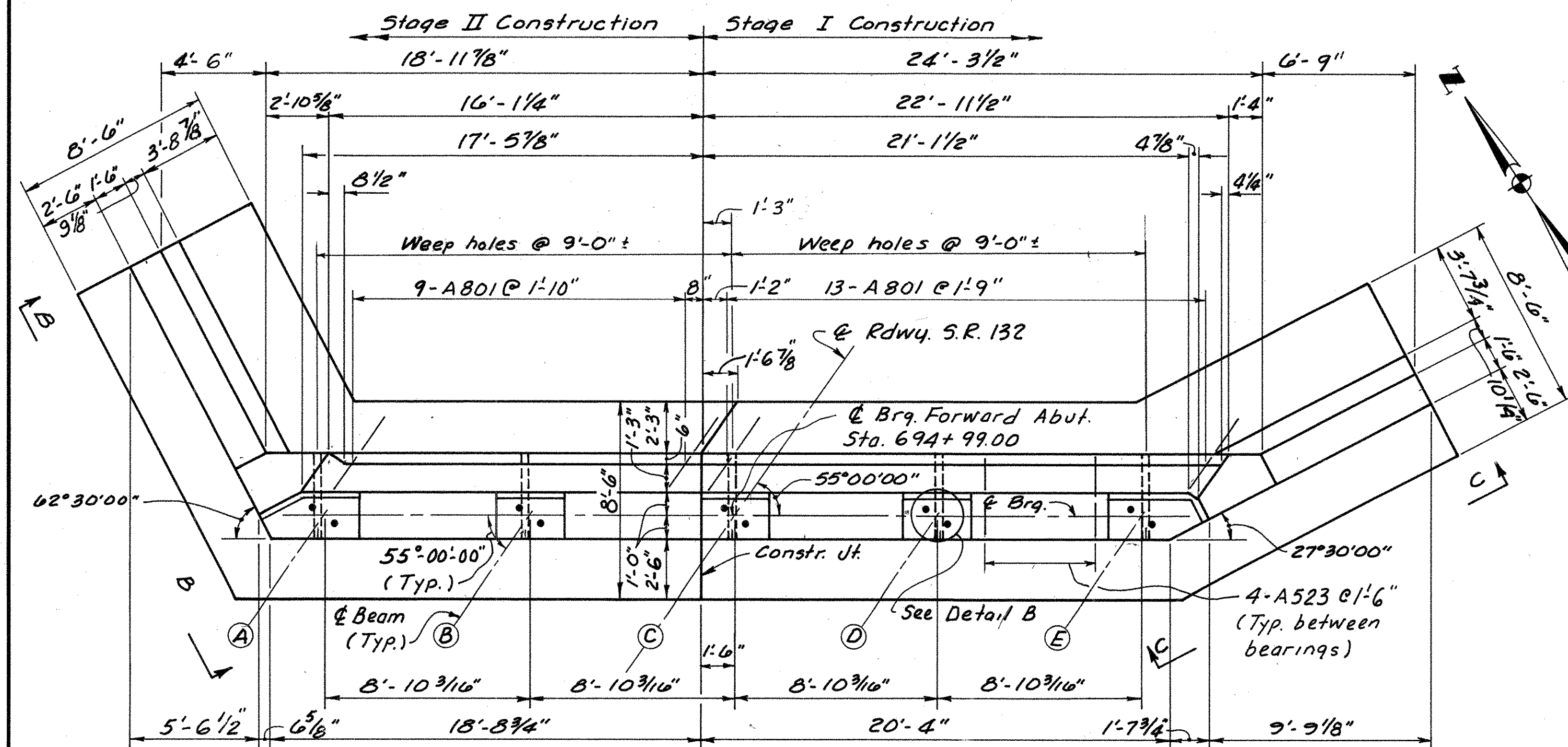
3 / 10

STAGE CONSTRUCTION

BRIDGE NO. CLE-132-1316
OVER BACKBONE CREEK

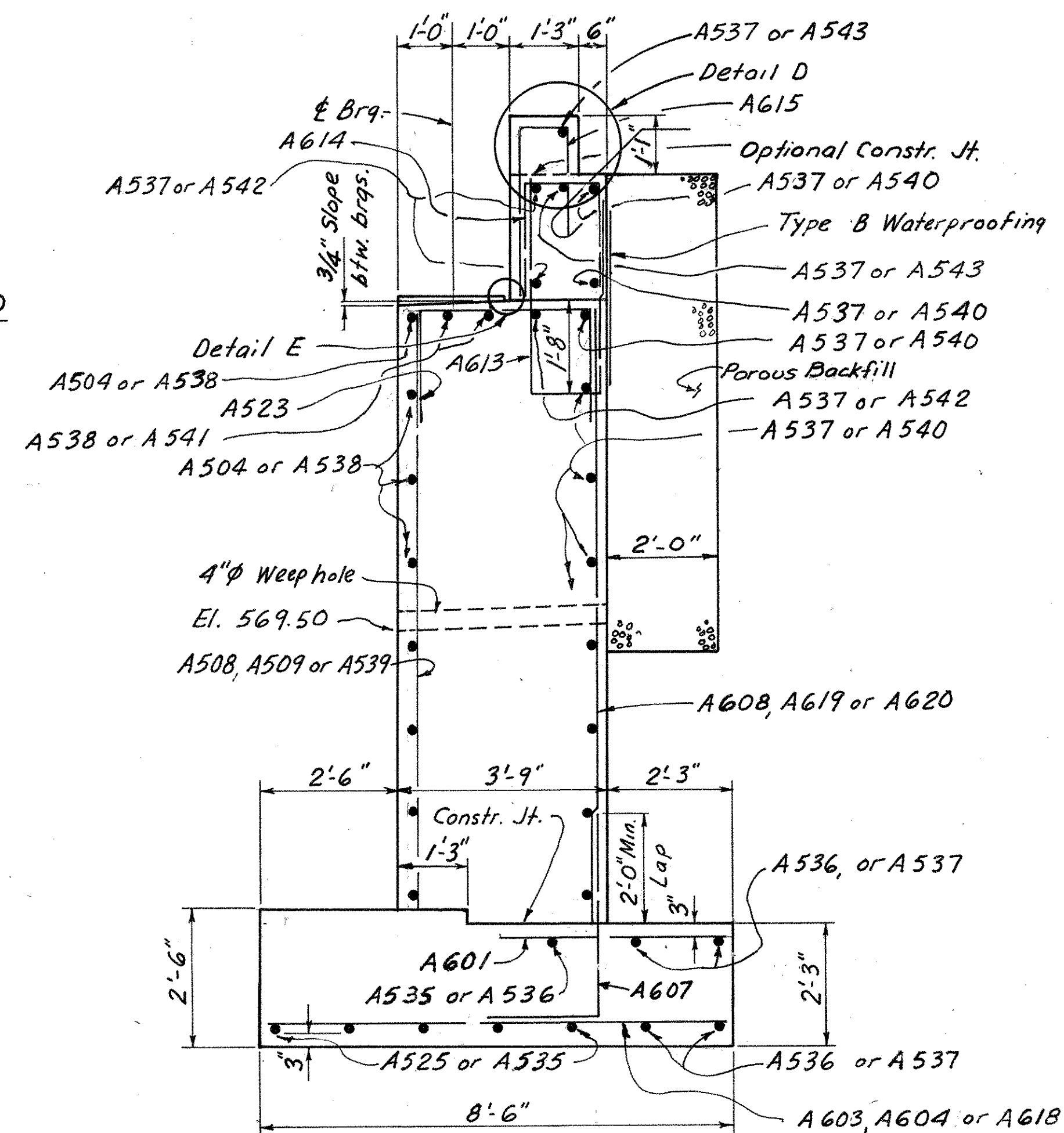
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
	SRV		WEL	JHO 9/24/82	

CLE-132-13.16



Notes:

- B.F denotes Back Face
- FF denotes Front Face
- E.F denotes Each Face
- All concrete shall be Class C Concrete



NOTES

*** Form holes in Stage I Construction footing for A601 bars.
GROUT bars in place during Stage II Construction. Forming and grouting shall be incidental to S11 Class C Concrete Footing.
For Elevation B-B and C-C see sheet 6/10
For Detail B see sheet 6/10
② or ③ see Detail C sheet 6/10
For Detail D see sheet 4/10
For Detail E see sheet 4/10
*Elevations given at Front Face of Backwall.
For other Notes see sheet 4/10

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CINCINNATI, OHIO

5/10

FORWARD ABUTMENT

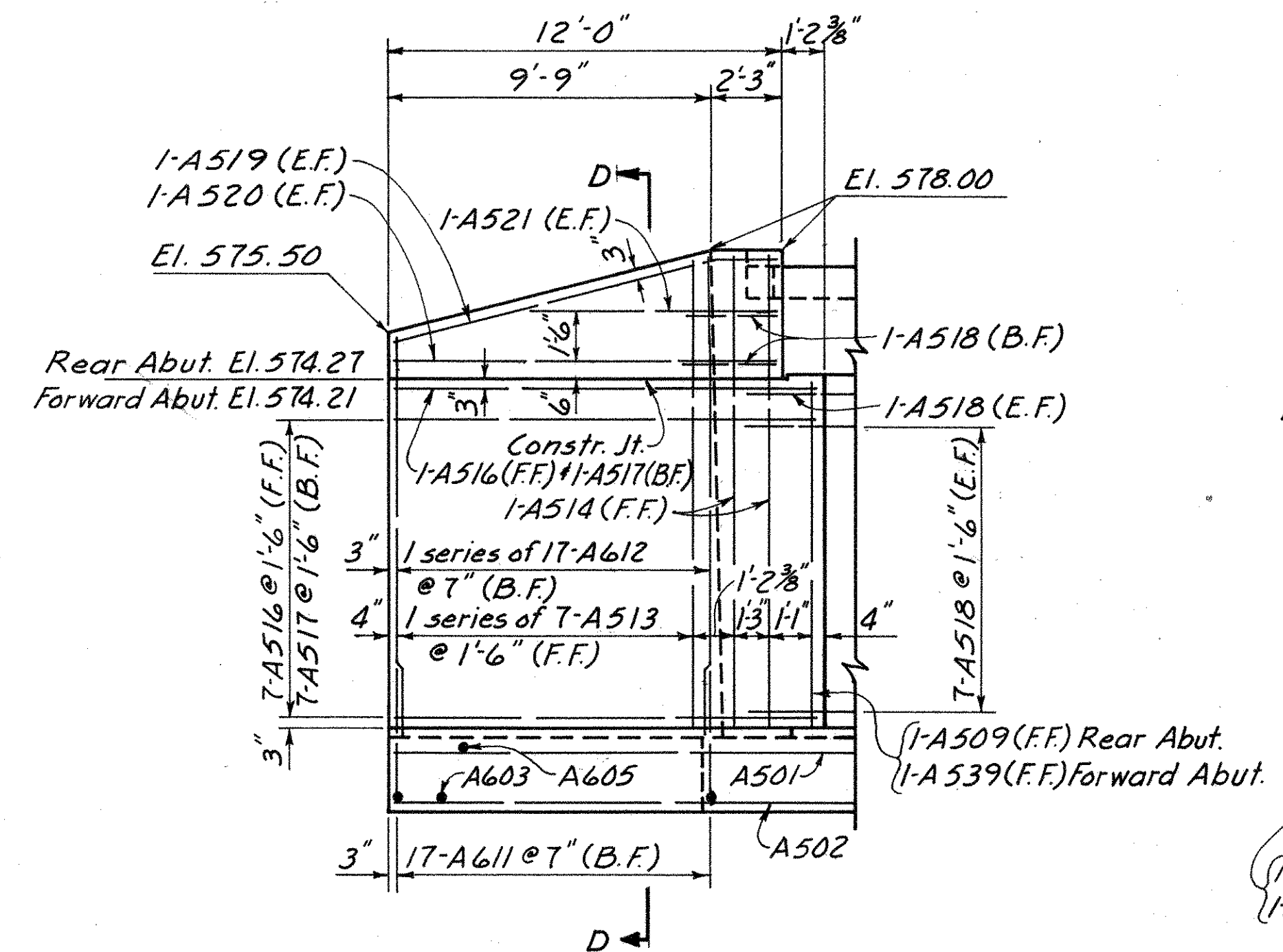
BRIDGE NO. CLE-132-1316
OVER BACKBONE CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
WL	SRJ		WL	JHO 9/24/82	

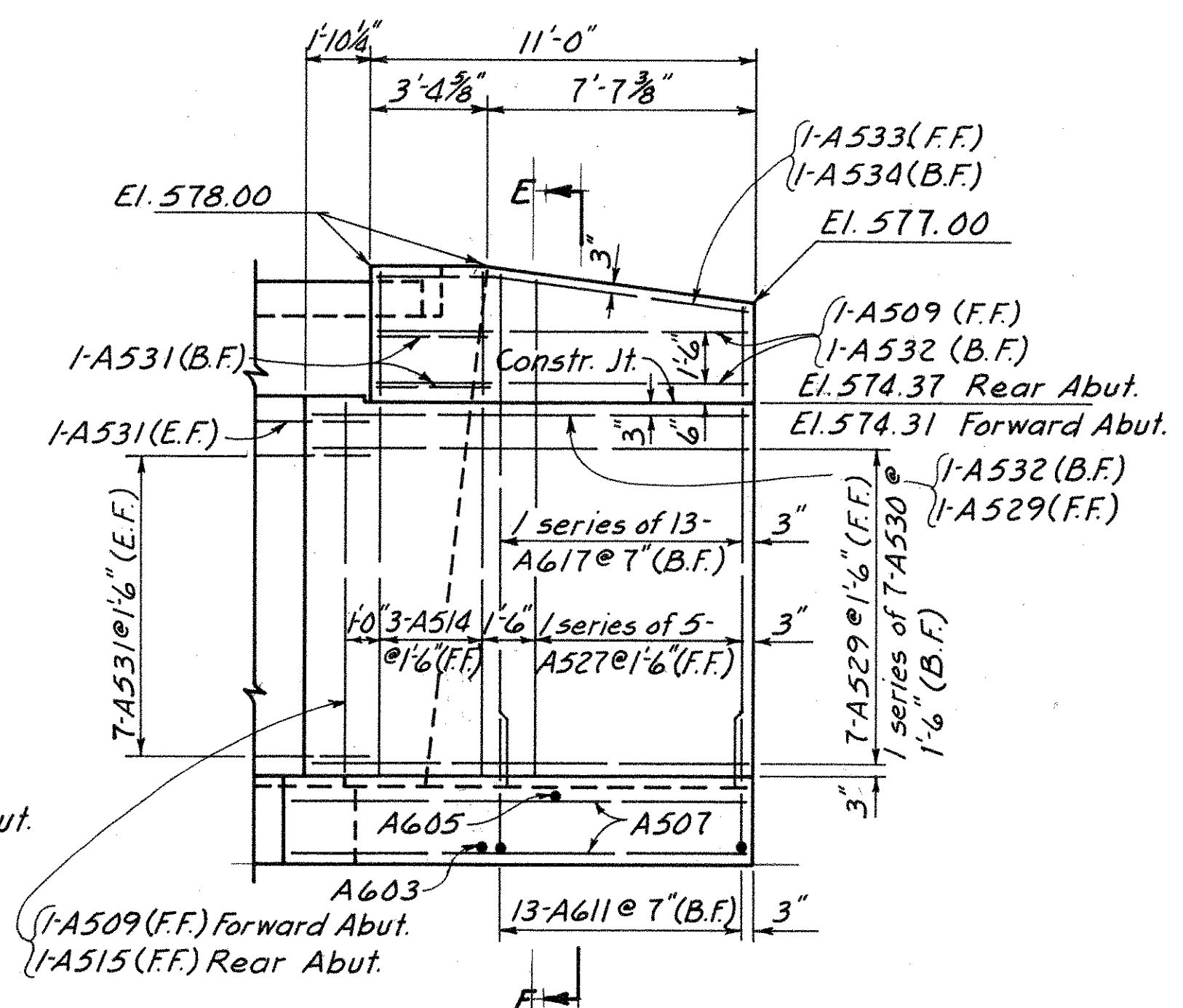
17
21
JUL 2 1985

FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		

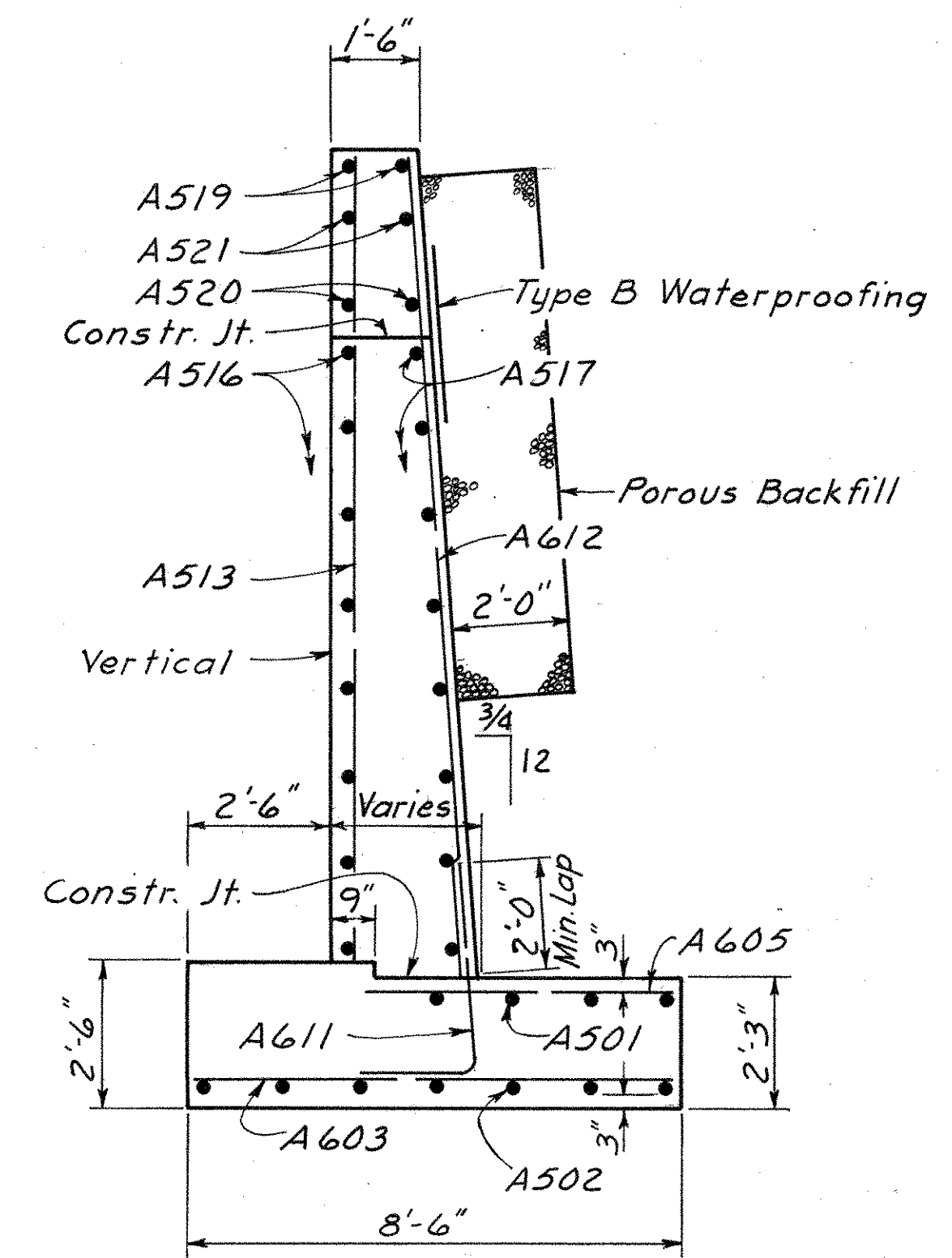
CLE-132-13.16



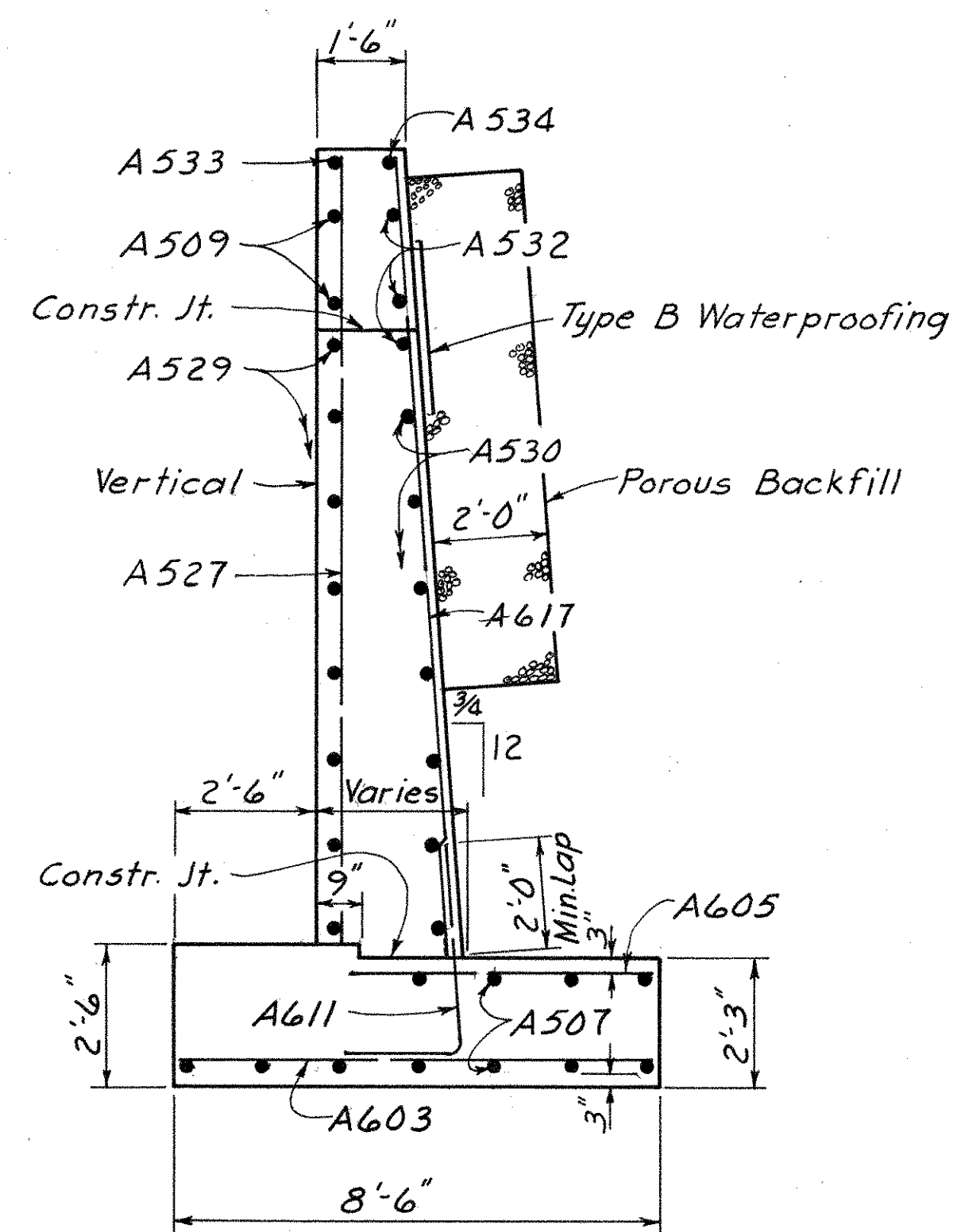
ELEVATION B-B



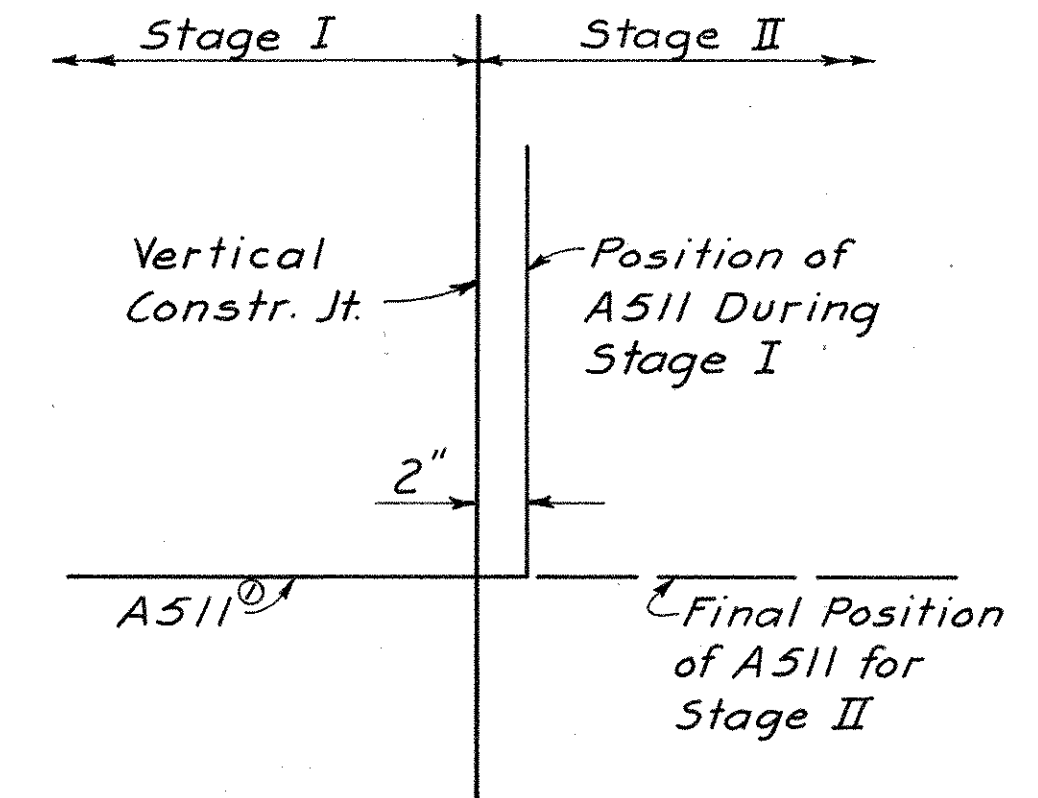
ELEVATION C-C



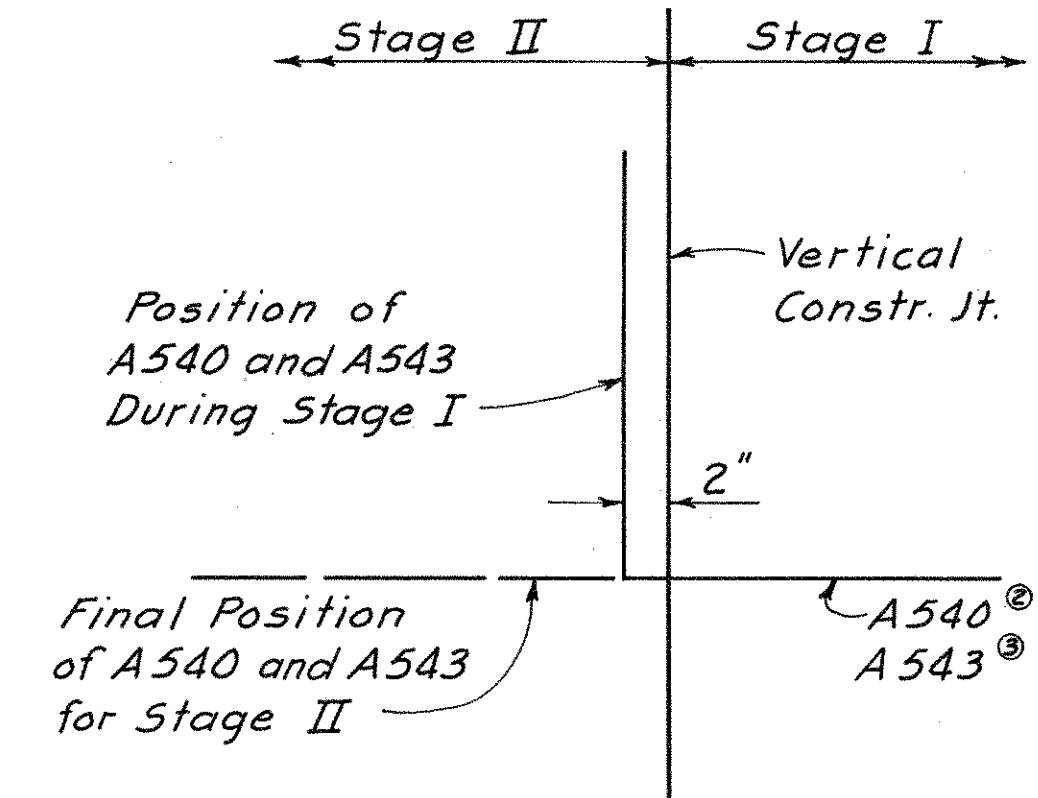
SECTION D-D



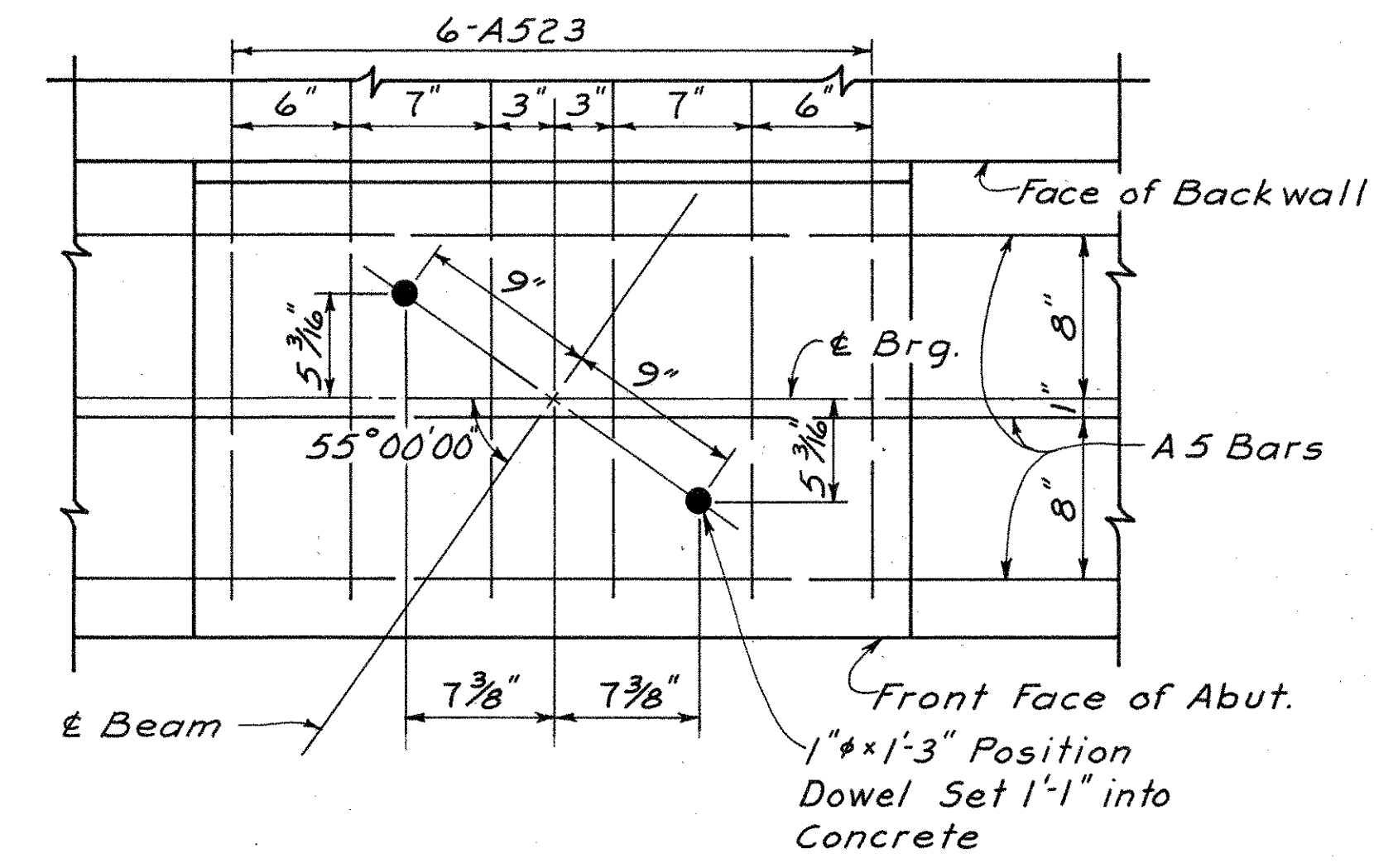
SECTION E-E



DETAIL A



DETAIL C

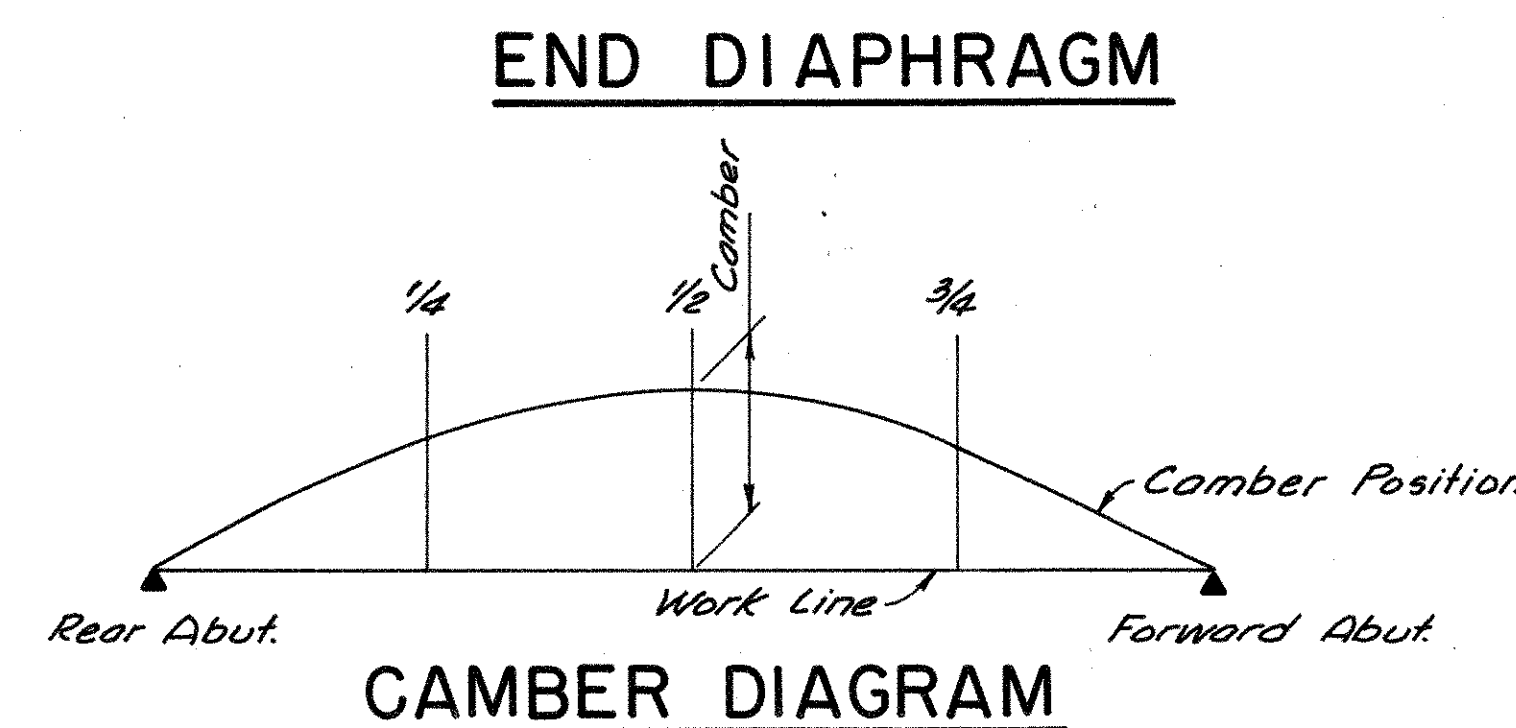
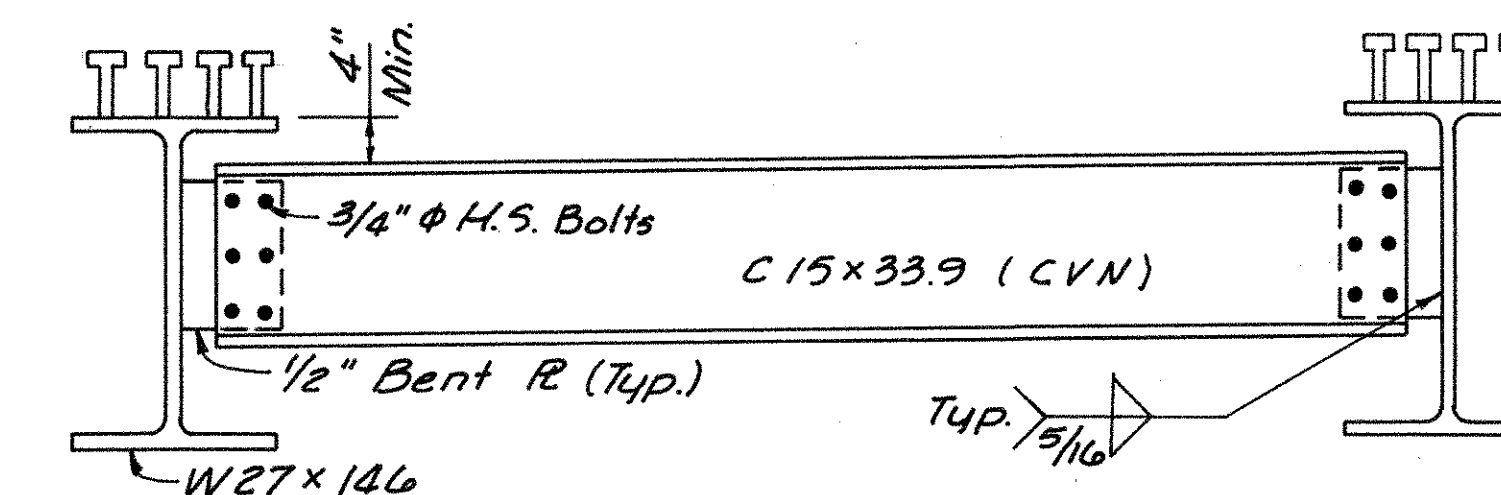
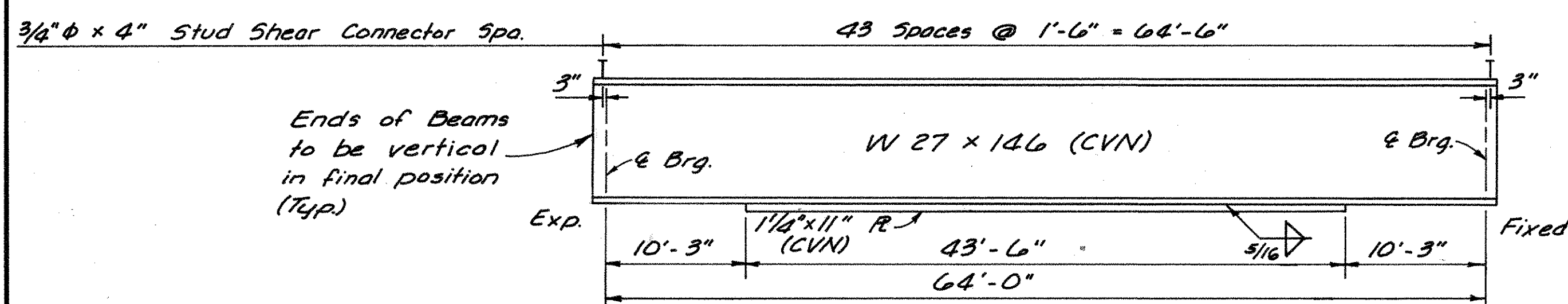
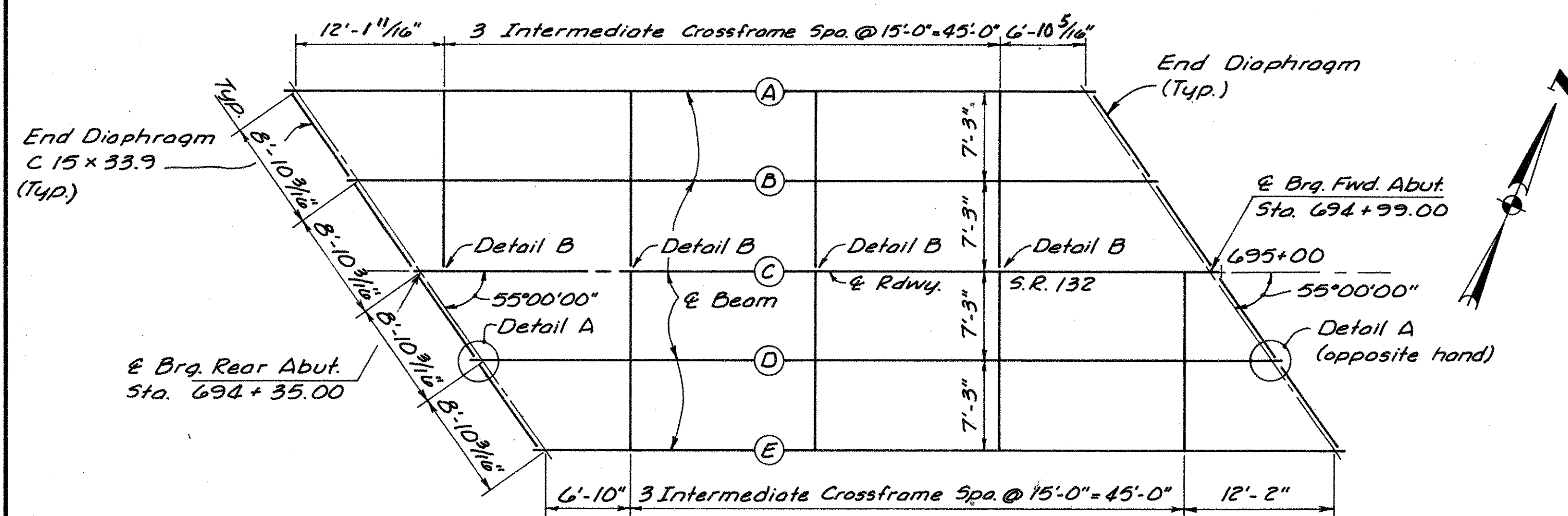


DETAIL B

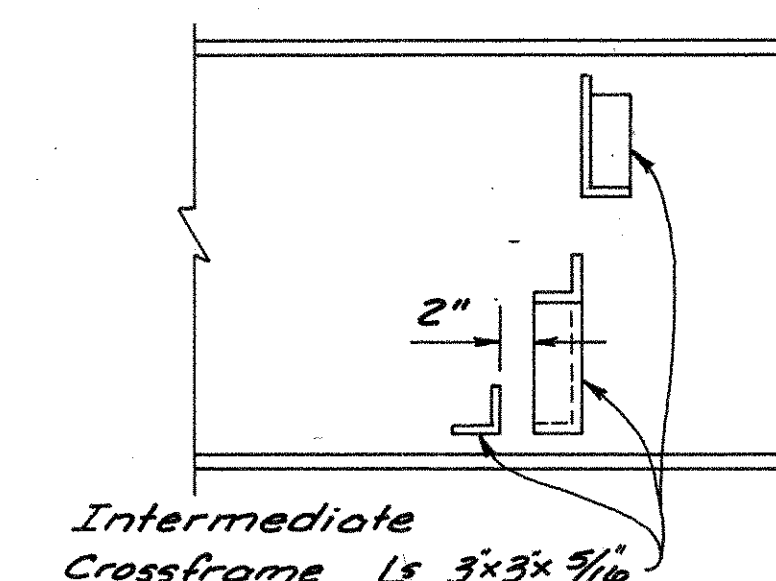
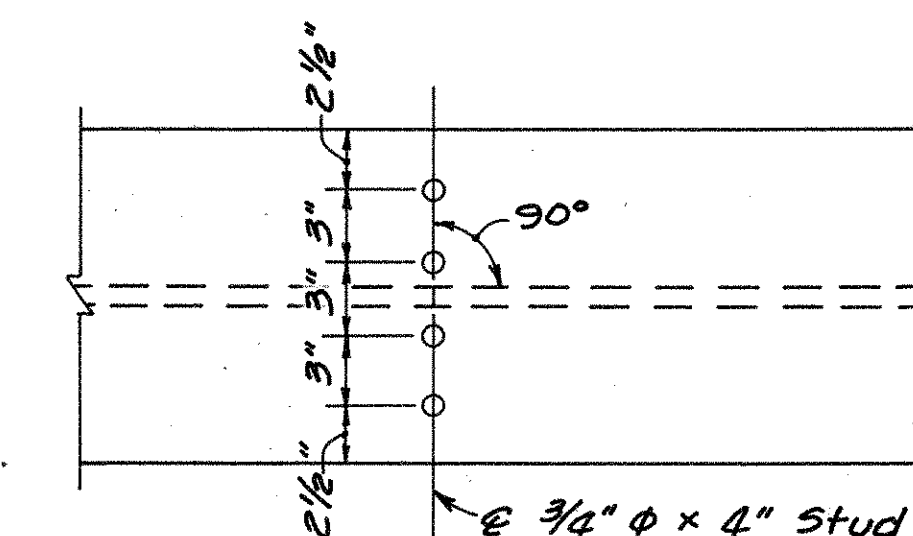
Note:
F.F. denotes Front Face
B.F. denotes Back Face
E.F. denotes Each Face
For other Notes see sheet 4/10
Work this sheet with sheet 4/10 and 5/10

HAZELET & ERDAL CONSULTING ENGINEERS CINCINNATI, OHIO						6/10
ABUTMENT DETAILS						
BRIDGE NO. CLE-132-1316 OVER BACKBONE CREEK						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED	
WL	ALT		WL	JHO 9/24/82		

CLE-132-13.16



CAMBER in inches															
	BEAM A			BEAM B			BEAM C			BEAM D			BEAM E		
	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4	1/4	1/2	3/4
Deflection due to weight of steel	1/4	3/16	1/4	1/4	3/16	1/4	1/4	3/16	1/4	1/4	3/16	1/4	1/4	3/16	1/4
Deflection due to remaining D.L.	7/8	13/16	7/8	7/8	13/16	7/8	7/8	13/16	7/8	7/8	13/16	7/8	7/8	13/16	7/8
Adjustment required for convexity	-3/16	-3/4	-3/8	-3/8	-7/8	-1/16	-1/16	-1	-3/16	-1/16	-1/16	-3/16	-3/4	-1/8	-3/4
Required Shop Camber	3/16	3/4	1/2	1/2	5/8	7/16	7/16	1/2	3/16	7/16	7/16	3/16	3/8	3/8	3/16



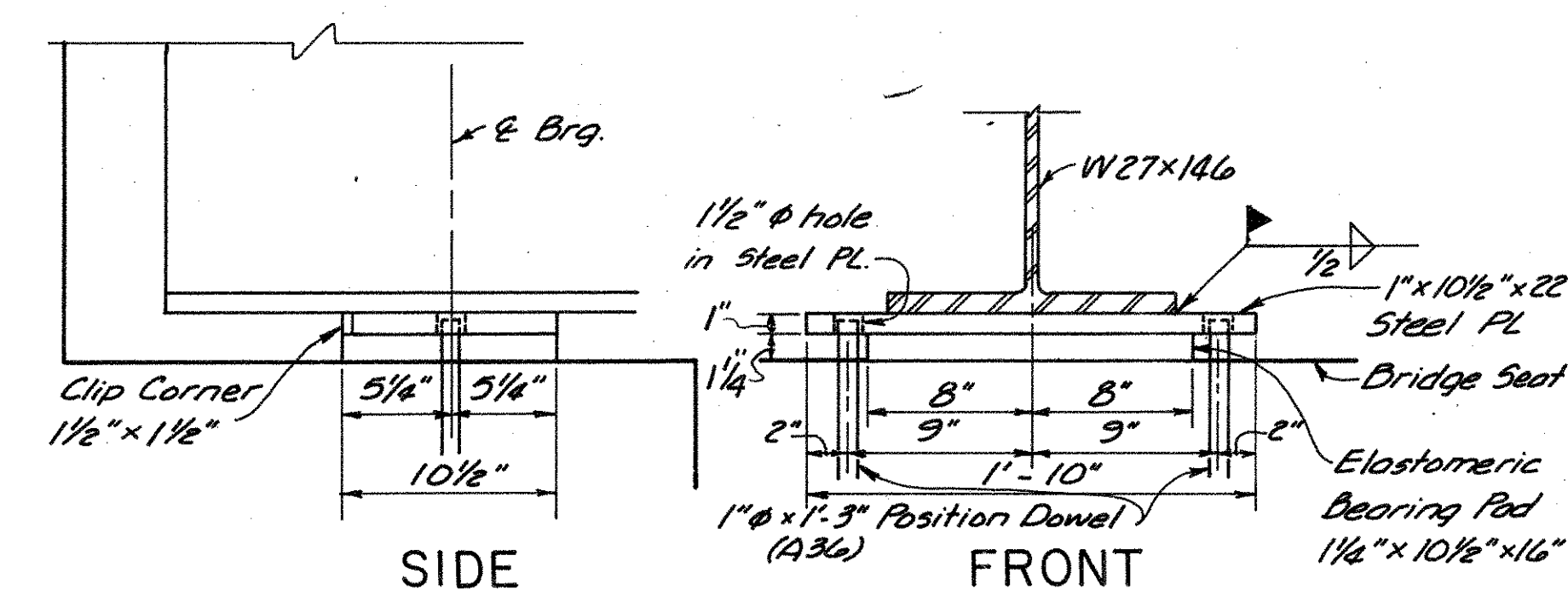
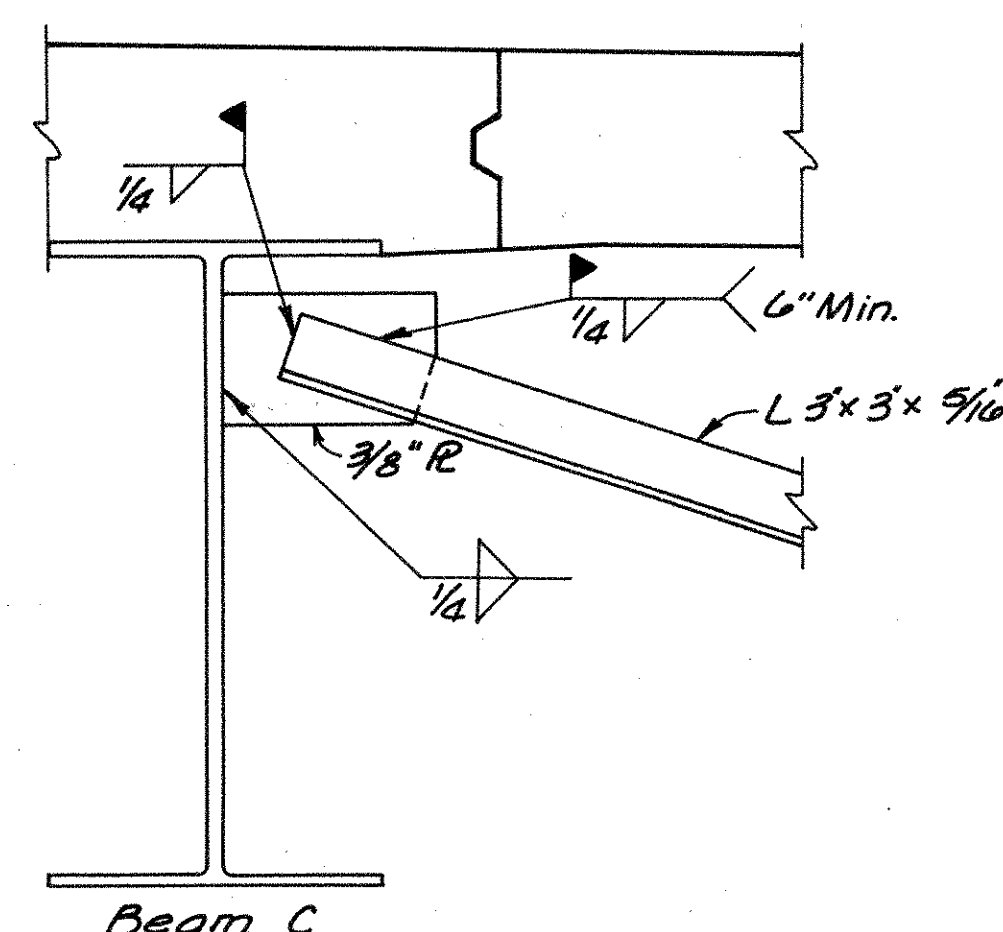
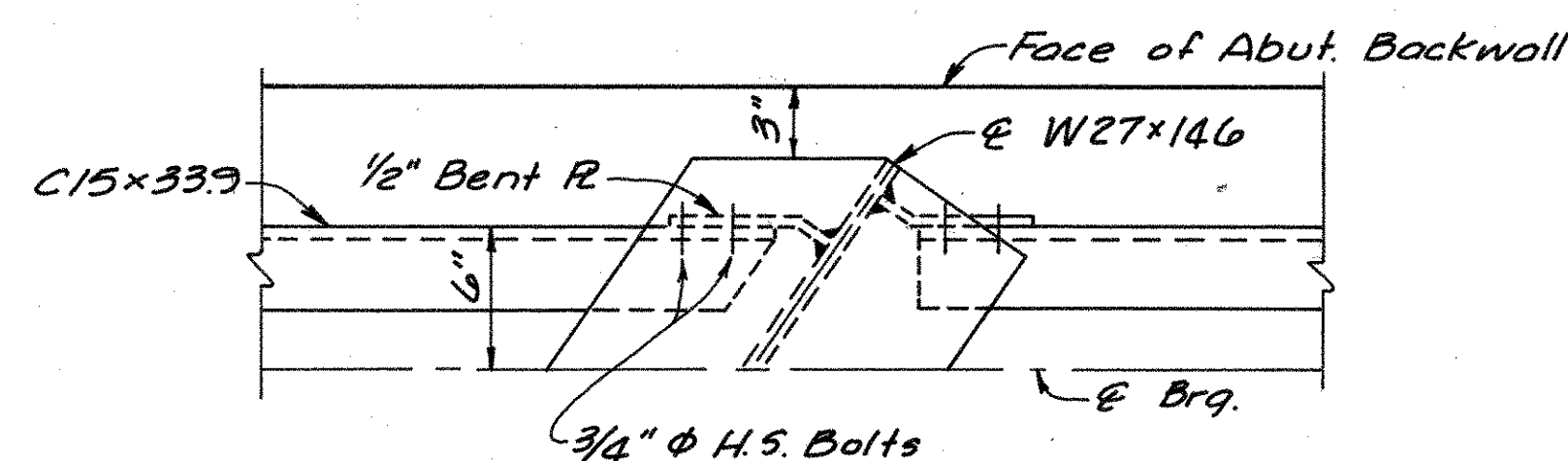
CROSSFRAME DETAIL

NOTES:

For Intermediate Crossframe Details see
sheet 8/10
HIGH STRENGTH BOLTS shall be $\frac{3}{4}$ " ϕ A325
Where a shape or plate is designated (CVN)
the material shall meet specified minimum
notch toughness requirements.

BEARING NOTES:

Elastomeric shall be 70 Durometer Neoprene.
Steel plate shall be ASTM A36 steel.
Elastomeric shall be vulcanized bonded to the steel plate during molding process.
WELDING shall be controlled so that the plate temperature of the elastomer bonded surface does not exceed 300°F as determined by use of pyrometric sticks or other temperature monitoring devices.
The quenching of metal to accelerate cooling shall be prohibited.



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CONSULTING ENGINEERS
CINCINNATI, OHIO

7 / 10

STRUCTURAL STEEL

BRIDGE NO. CLE-132-1316
OVER BACKBONE CREEK

DESIGNED WL	DRAWN SRU	TRACED	CHECKED WZ	REVIEWED DATE JH0 9/24/82	REVISED
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MICROFILMED
JUL 2 1985

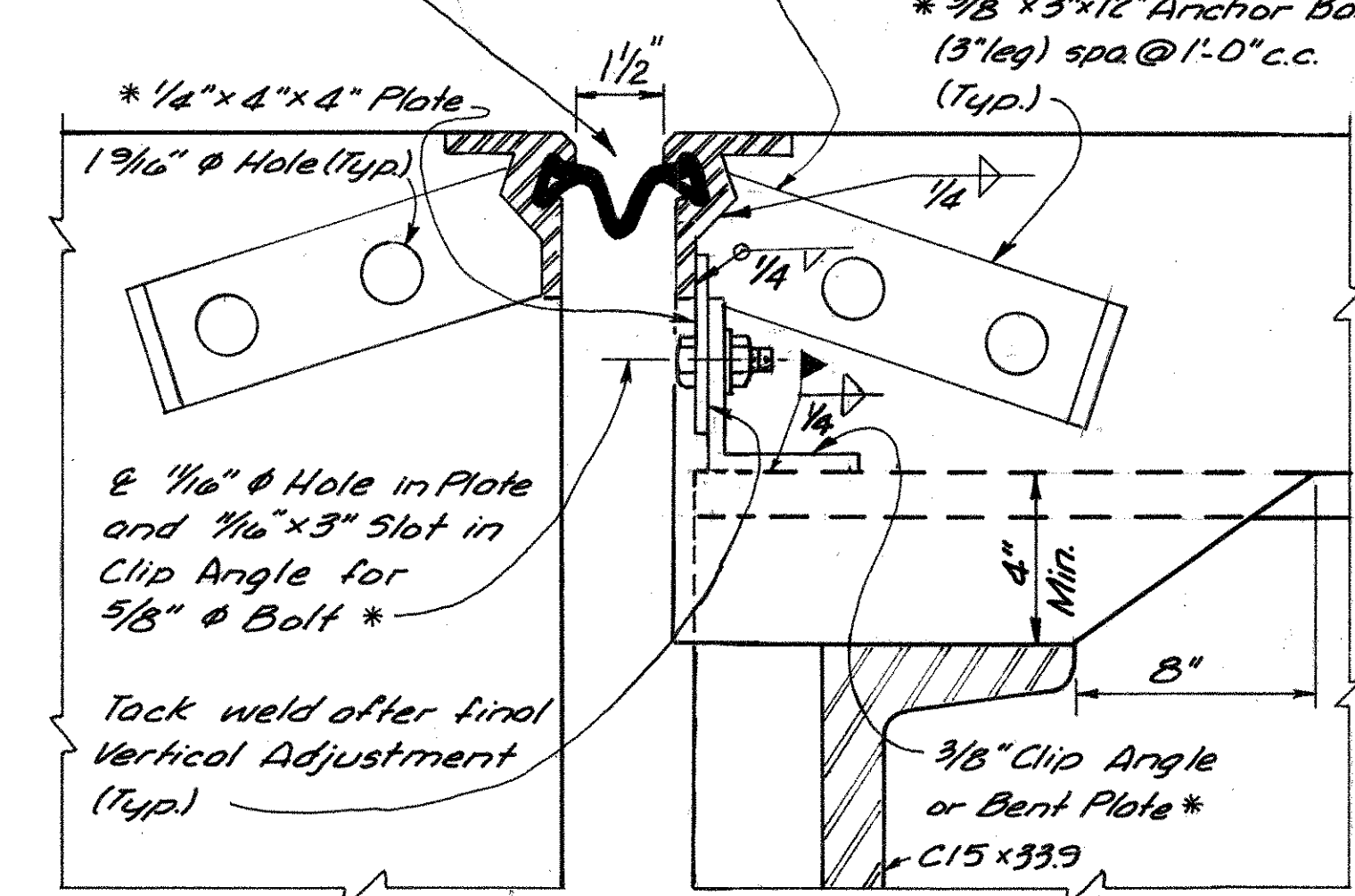
FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		

19
21

CLE-132-13.16

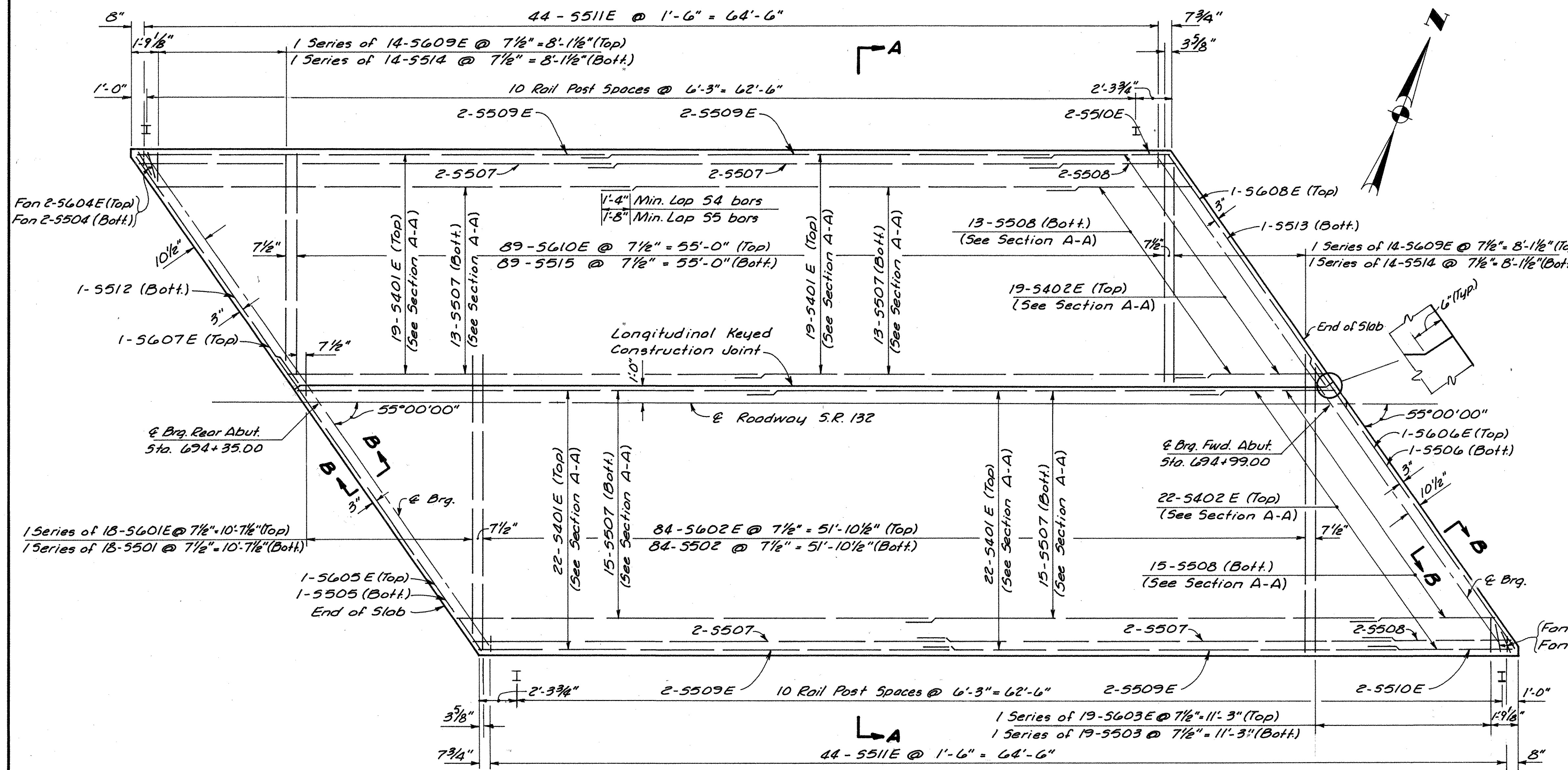
Watson Bowman Wabo Strip Seal
5-200 with Type M Steel Section
ACME Strip Seal AS 200 with
Type C Steel Section or an
approved equal.

Place Anchor Bars parallel
to longitudinal slab reinforcing
steel.

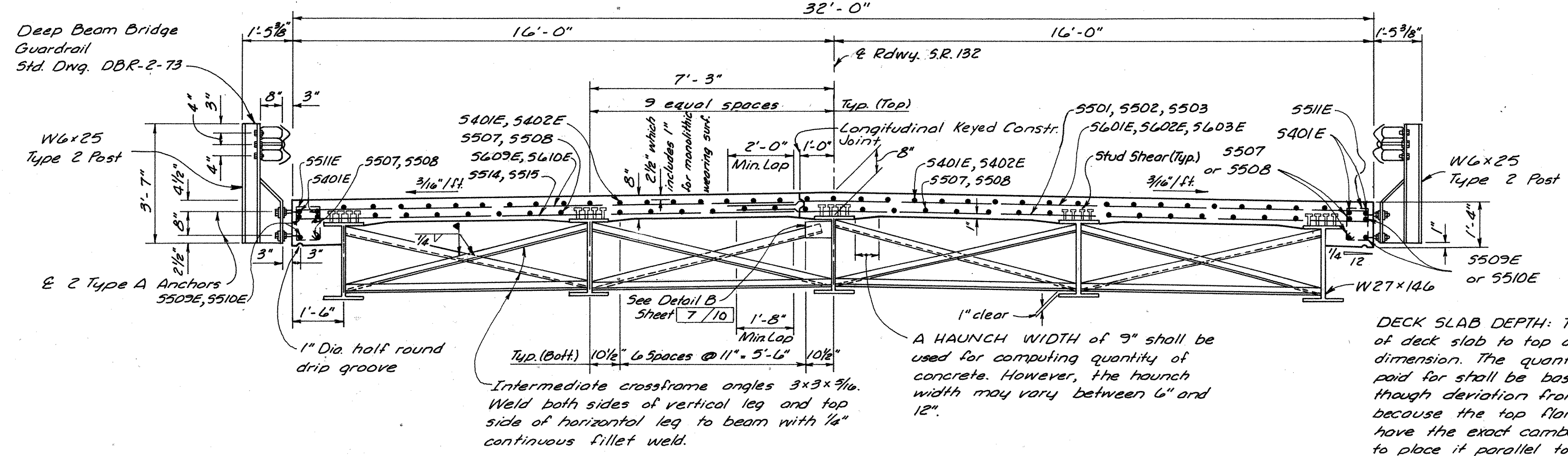


SECTION B-B

* Included with Item 516,
Continuous Seals in Structural
Steel Joint, As Per Plan for
payment.



PLAN



SECTION A-A

DECK SLAB DEPTH: The distance shown from top
of deck slab to top of steel beam is the design
dimension. The quantity of deck concrete to be
paid for shall be based on this dimension, even
though deviation from it may be necessary
because the top flange of the beam may not
have the exact camber or conformation required
to place it parallel to the finished grade.

Note:
For Scribed Elevations
See Sheet 9710

HAZELET & ERDAL CONSULTING ENGINEERS CINCINNATI, OHIO					
8/10					
SUPERSTRUCTURE					
BRIDGE NO. CLE-132-1316 OVER BACKBONE CREEK					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
WL	SRJ		WL	JHO 9/24/82	

MICROFILMED
JUL 2 1985

FEDERAL REGION	STATE	PROJECT	FISCAL YEAR
5	OHIO		

20
21

CLE-132-13.16

GENERAL NOTES

REFERENCE shall be made to Standard Drawings: A5-1-81 sheets 1, 2 and 3 dated 11-27-81, DBR-2-73 dated 4-10-73 and to Supplemental Specifications: 836 dated 3-12-75.

DESIGN SPECIFICATIONS: This structure conforms to "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1977, including the 1978, 1979 and 1980 Interim Specifications and the Ohio "Supplement" to these specifications.

DESIGN DATA:

Design Loading - H520-44 Case II
Concrete Class C - Compressive strength 4,000 p.s.i. for Substructure.
Concrete Class S - Compressive strength 4,500 p.s.i. for Superstructure.
Reinforcing Steel - ASTM A615, A616 or A617, Grade 60, Minimum Yield Strength 60,000 p.s.i.
Structural Steel - ASTM A36 unit stress 20,000 p.s.i.
Deck Protective Method - Epoxy Coated Reinforcing Steel, top mat and fascias only.
Monolithic wearing surface thickness is assumed for design purposes to be 1 inch.

REMOVAL OF EXISTING STRUCTURE: The existing structure shall be removed in stages to maintain traffic and allow for proposed construction. Abutments shall be removed to Elev. 561.00 minimum.

FOUNDATION BEARING PRESSURE: Abutment footings are designed for a maximum bearing pressure of 2.5 tons per square foot.

CONTINUOUS SEALS IN STRUCTURAL STEEL JOINTS, AS PER PLAN:

Description. This item shall be in accordance with 516 and as modified and augmented herein.
Material. Structural Steel components - A36. Seal shall be in accordance with manufacturer's specifications and recommendations.

Fabrication and Installation shall be in accordance with manufacturer's specifications and recommendations.

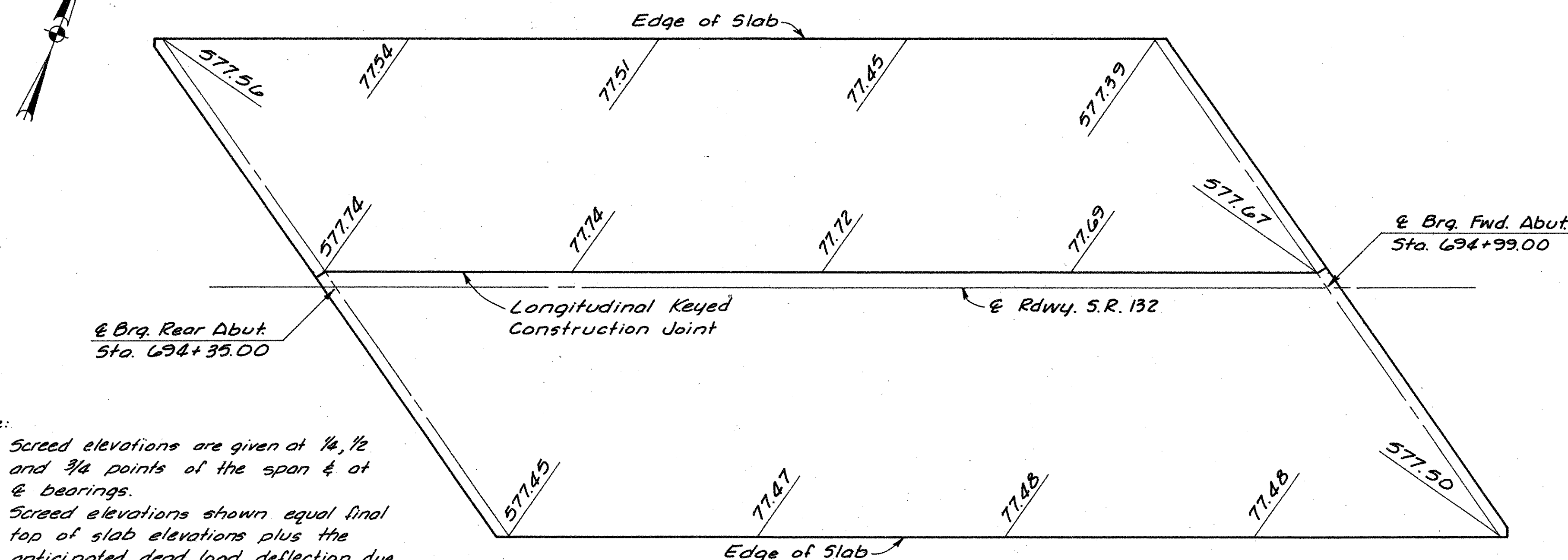
Method of Measurement. Measurement for pay purposes shall be based on the sealed length of joints measured horizontally along the joint centerlines.

Basis of Payment. Payment will be made at contract price for:

Item	Unit	Description
516	Linear Foot	Continuous Seals In Structural Steel Joints, As Per Plan

Note:

Screed elevations are given at $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ points of the span & at & bearings.
Screed elevations shown equal final top of slab elevations plus the anticipated dead load deflection due to weight of deck concrete.



SCREED ELEVATIONS

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	SUPER- STRUCTURE	REAR ABUT.	FORWARD ABUT.	GENERAL	SHT. No. 4	
202	Lump Sum	Lump Sum	Structure Removed				Lump Sum		
503	Lump Sum	Lump Sum	Cofferdams, Cribbs and Sheeting				Lump Sum		
503	532	Cubic Yard	Unclassified Excavation		256	276			
509	25,108	Pound	Reinforcing Steel, Grade 60	6,060	9,560	9,488			
511	92	Cubic Yard	Class C Concrete, Footing		46	46			
511	184	Cubic Yard	Class C Concrete, Abutment and Wingwall above Footing		92	92			
511	58	Cubic Yard	Class S Concrete, Superstructure	58					
512	50	Square Yard	Type B Waterproofing		25	25			
513	63,000	Pound	Structural Steel (AISC Category I)	63,000					
513	880	Each	Welded Stud Shear Connectors	880					
514	63,000	Pound	Field Painting of New Structural Steel, System A	63,000					
516	78	Linear Foot	Continuous Seals in Structural Steel Joints, As Per Plan	78					
516	10	Each	Elastomeric Bearings (11/4"x10 1/2"x16" Elastomeric Pad with 1"x10 1/2"x22" Steel Load Plate)	10					
517	139	Linear Foot	Railing (Deep Beam Rail with Steel Tubular Back Up and Steel Posts and Bolts)	139					
518	68	Cubic Yard	Porous Backfill		36	32			
517	62.5	Lin. Ft.	Temporary Bridge Railing as per plan					62.5	
824	7,950	Pound	Epoxy Coated Reinforcing Steel, Grade 60	7,950					

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GENERAL NOTES
ESTIMATED QUANTITIES
SCREED ELEVATIONS
BRIDGE NO. CLE-132-1316
OVER BACKBONE CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
	SRJ		WJ	JHO 9/24/82	

CLE-132-13.16

ABUTMENTS

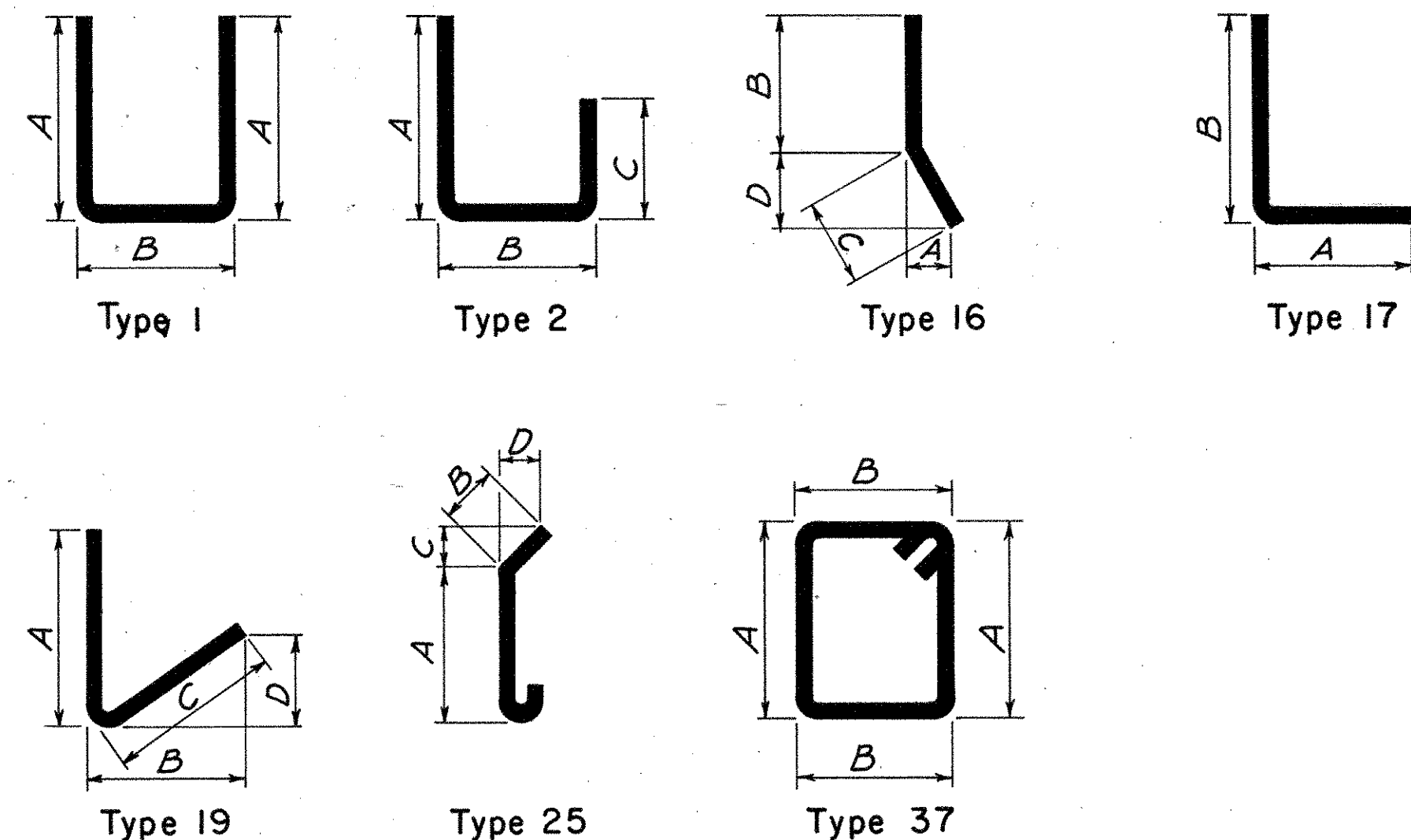
MARK	TYPE	LENGTH	NO. OF BARS		WEIGHT		DIMENSIONS			
			REAR ABUT.	FWD. ABUT.	REAR ABUT.	FWD. ABUT.	A	B	C	D
A501	Str.	11'-0"	4	4	46	46				
A502	Str.	11'-0" to 14'-4"	1 Series of 7	1 Series of 7	92	92				
A503	Str.	24'-0"	8		200					
A504	Str.	22'-1"	10	8	230	184				
A505	Str.	17'-0"	10		177					
A506	Str.	19'-6"	2		41					
A507	Str.	13'-2"	11	11	151	151				
A508	Str.	10'-6"	7	7	77	77				
A509	Str.	10'-8"	15	11	167	122				
A510	Str.	10'-11"	3		34					
A511	17	24'-2"	10		252		1'-8"	22'-7"		
A512	Str.	24'-11"	15		390					
A513	Str.	11'-10" to 14'-3"	1 Series of 7	1 Series of 7	95	95				
A514	Str.	14'-4"	5	5	75	75				
A515	Str.	10'-9"	7		78					
A516	Str.	12'-10"	8	8	107	107				
A517	Str.	10'-11"	8	8	84	84				
A518	16	4'-0"	18	18	75	75	1'-9 1/4"	2'-0"	2'-0"	11"
A519	16	11'-11"	2	2	25	25	6"	9'-10"	2'-1"	2'-0"
A520	Str.	11'-8"	2	2	24	24				
A521	Str.	6'-3"	2	2	13	13				
A522	16	3'-4"	3	3	10	10	8"	1'-8"	1'-8"	1'-6"
A523	1	6'-5"	46	46	308	308	1'-8"	3'-4"		
A524	Str.	16'-5"	8		137					
A525	Str.	20'-1"	3	5	63	105				
A526	Str.	21'-5"	2		45					
A527	Str.	13'-4" to 14'-2"	1 Series of 5	1 Series of 5	72	72				
A528	Str.	23'-4"	2		49					
A529	Str.	12'-6"	8	8	104	104				
A530	Str.	8'-6" to 9'-6"	1 Series of 7	1 Series of 7	66	66				
A531	16	4'-0"	18	18	75	75	11"	2'-0"	2'-0"	1'-9 1/4"
A532	Str.	8'-6"	3	3	27	27				
A533	16	10'-7"	1	1	11	11	4 1/2"	7'-7"	3'-0"	2'-11 1/2"
A534	16	9'-7"	1	1	10	10	3"	7'-7"	2'-0"	1'-11 3/4"
A535	Str.	22'-9"	6		142					
A536	Str.	18'-0"	5		94					
A537	Str.	18'-11"	19		375					
A538	Str.	18'-6"	10		193					
A539	Str.	10'-7"	13		143					
A540	17	27'-8"	10		289		1'-8"	26'-1"		
A541	Str.	23'-2"	2		48					
A542	Str.	25'-10"	3		81					
A543	17	25'-9"	2		54		1'-8"	24'-2"		
A601	Str.	4'-0"	78	77	469	463				
A602	Str.	5'-8"	4		34					
A603	Str.	8'-2"	94	95	1,153	1,165				
A604	Str.	4'-0" to 8'-2"	1 Series of 5	1 Series of 5	46	46				
A605	Str.	5'-3"	36	36	284	284				
A606	Str.	4'-6"	4		27					
A607	17	5'-10"	74	74	648	648	2'-0"	4'-0"		
A608	Str.	10'-10"	18	21	293	342				
A609	Str.	11'-0"	36		595					
A610	Str.	11'-2"	6		101					
A611	19	6'-0"	30	30	270	270	2'-0"	3'-11 3/8"	4'-0"	3"
A612	Str.	12'-1" to 14'-6"	1 Series of 17	1 Series of 17	339	339				
A613	1	8'-3"	42	42	520	520	3'-7"	1'-5"		
A614	1	4'-9"	40	40	285	285	1'-10"	1'-5"		
A615	2	5'-1"	40	40	305	305	2'-11"	11"	1'-7"	
A616	Str.	11'-1"	14		233					
A617	Str.	13'-7" to 14'-6"	1 Series of 13	1 Series of 13	274	274				
A618	Str.	6'-1" to 7'-9"	1 Series of 3	1 Series of 3	31	31				
A619	Str.	10'-9"	18		291					
A620	Str.	10'-11"	35		574					
A801	25	4'-8"	22	22	274	274	2'-4"	1'-5"	1'-0"	1'-0"

Total Weight, Reinforcing Steel, Grade 60 = 9,560 Lbs. Rear Abutment
Total Weight, Reinforcing Steel, Grade 60 = 9,488 Lbs. Forward Abutment

SUPERSTRUCTURE

MARK	TYPE	LENGTH	NO. OF BARS	WEIGHT	DIMENSIONS	
					A	B
S401E	Str.	30'-0"	82	1,643		
S402E	Str.	8'-8"	41	237		
S501	Str.	3'-0" to 18'-2"	1 Series of 18	199		
S502	Str.	18'-8"	84	1,635		
S503	Str.	2'-7" to 18'-8"	1 Series of 19	211		
S504	Str.	2'-0"	4	8		
S505	Str.	22'-10"	1	24		
S506	Str.	22'-7"	1	24		
S507	Str.	30'-0"	64	2,003		
S508	Str.	9'-4"	32	312		
S509E	Str.	30'-0"	8	250		
S510E	Str.	9'-4"	4	39		
S511E	37	3'-8"	88	337	11"	8"
S512	Str.	17'-9"	1	19		
S513	Str.	17'-11"	1	19		
S514	Str.	2'-7" to 14'-2"	2 Series of 14	245		
S515	Str.	14'-8"	89	1,361		
S601E	Str.	3'-4" to 18'-6"	1 Series of 18	295		
S602E	Str.	19'-0"	84	2,397		
S603E	Str.	2'-7" to 18'-8"	1 Series of 19	303		
S604E	Str.	2'-0"	4	12		
S605E	Str.	23'-3"	1	35		
S606E	Str.	23'-0"	1	35		
S607E	Str.	17'-9"	1	27		
S608E	Str.	17'-11"	1	27		
S609E	Str.	2'-7" to 14'-2"	2 Series of 14	352		
S610E	Str.	14'-8"	89	1,961		

Total Weight, Reinforcing Steel, Grade 60 = 6,060 Lbs. Superstructure
Total Weight, Epoxy Coated Reinf Steel, Grade 60 = 7,950 Lbs. Superstructure



BAR BENDING DIAGRAM

NOTE:

Bars shall be carefully shaped to the pertinent dimensions shown in the table of Standard Bends, Section 509.05 of the State of Ohio Construction and Material Specifications.

REINFORCING STEEL SAMPLES:

Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structure by the additional steel, spliced in accordance with 509.08.

Bar marks ending with (E) are epoxy coated. For example S401E.

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REINFORCING STEEL LIST

BRIDGE NO. CLE-132-1316
OVER BACKBONE CREEK

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED DATE	REVISED
	GP		WZ	JHO 9/24/82	

GEOLOGY OF THE SITE

THE STRUCTURE SITE IS LOCATED IN THE DISSECTED GLACIATED PORTION OF THE LEXINGTON PENEPLAIN REGION, ON THE BROAD FLOODPLAIN OF EAST FORK LITTLE MIAMI RIVER AND OVER BACKBONE CREEK, IN AN AREA WHERE THIN GLACIAL AND VALLEY DEPOSITS OVERLIE INTERBEDDED SHALE AND LIMESTONE BEDROCK, OF ORDOVICIAN AGE.

EXPLORATION

THE EXPLORATION CONSISTED OF ONE DRIVE SAMPLE BORING AND ONE DRIVE SAMPLE-CORE BORING MADE BY MEANS OF A MECHANICALLY-POWERED HOLLOW STEM AUGER MOUNTED ON A MOBILE PLATFORM, PERFORMED ON MARCH 16, 1982.

INVESTIGATIONAL FINDINGS AND OBSERVATIONS

THE BORINGS DISCLOSED THAT INTERVALS OF LOOSE TO EXTREMELY DENSE UNSTRATIFIED BASIC SILTS, CLAYS AND GRAVEL MODIFIED WITH SAND AND VARYING AMOUNTS OF EACH OTHER THAT GRADUALLY INCREASE (ERRATIC AT TIMES) IN DENSITY WITH INCREASE IN DEPTH OVERLIE GENTLY SLOPING BEDROCK SURFACE. BORING B-1 (IN THE GENERAL VICINITY OF THE REAR ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 12.5-FOOT DEPTH, ELEVATION 564.5 FEET AND WAS TERMINATED AT 18.0-FOOT DEPTH, ELEVATION 559.0 FEET, AFTER PENETRATING 5.5 FEET BELOW BEDROCK SURFACE. BORING B-2 (IN THE GENERAL VICINITY OF THE FORWARD ABUTMENT) ENCOUNTERED BEDROCK SURFACE AT 16.0-FOOT DEPTH, ELEVATION 561.0 FEET AND WAS TERMINATED UPON CONTACT WITH SAME.

FREE WATER WAS OBSERVED AND MEASURED IN BORING B-2 AT 13.0-FOOT DEPTH, ELEVATION 564.0 FEET.

- Auger Boring Location - Plan View.
- Press and / or Drive Sample and / or Core Boring Location - Plan View.
- Drive Rod Penetration Resistance Sounding Location - Plan View.
- Capped Pile
- Footing
- Footing on Pile
- Top of Rock

- Coal
- Weathered Mudstone or Claystone
- Mudstone or Claystone
- Weathered Shale
- Shale
- Weathered Siltstone
- Siltstone

LEGEND

- Horizontal Bar on Boring Log Indicates the Depth the Sample Was Taken.
- Figures Beside the Boring Log in Profile Indicate the Number of Blows for Standard Penetration Test.
X = Number of Blows for First 6 inches.
Y = Number of Blows for Second 6 inches.
Z = Number of Blows for Third 6 inches.
- Drive Rod Penetration Resistance Sounding Log - Profile
- Casing
- Resistance "R" < 10,000 lbs.
- Resistance "R" > 10,000 lbs.
- Indicates Final Measurement of Penetration, in Inches.
- Indicates Free Water Elevation.
- Indicates Static Water Elevation.

SYMBOLS OF ROCK TYPES

- Weathered Sandstone
- Sandstone
- Leached Dolomite
- Dolomite
- Leached Limestone
- Limestone
- Boulders or Cobbles

GENERAL INFORMATION

Drive Rod Penetration Sounding Tests

Drive rod penetration resistance tests constitute driving a 1.315-inch diameter steel rod, with a 45° cone point, into the ground, using a 122-pound drop-hammer with a free fall of five feet. At one or two-foot depth intervals, a measurement is taken to determine the amount of penetration achieved in three hammer drops. This reading is converted to an empirical value for capacity "R", in thousands of pounds (which is a measure of both the point resistance and frictional resistance on the rod), by using charts prepared by the Ohio Department of Highways, Bureau of Bridges, on the basis of correlation study of rod penetration with past performance of pile driving. For interpretation, a graph is prepared by plotting the value "R" against the depth at which the reading was taken, and connecting the plotted points. The curve so obtained reflects the density of subsurface materials in a manner that can be readily compared with data from similar tests at other locations on the structure site. From this comparison, the overall uniformity of subsurface condition may be evaluated.

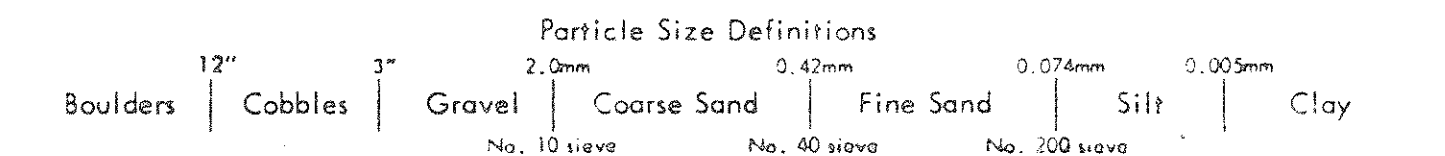
Drive Sample Borings - Drive-Press Sample Borings

Drive sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. sampler, at 2-1/2 and / or 5-foot depth intervals, driven by means of a 140 - pound drop-hammer with a free fall of 30 inches. The number of blows required to drive the sampler 18 inches is considered the standard penetration test.

Drive-press sample borings are made by means of a rotary-type drill rig, employing a 2" O.D., 1-3/8" I.D. drive sampler, and 3" O.D. thin-wall press sampler. The press sampler is advanced by continuous uniform pressure, applied by the drill rig.

The boring log sheets show a graphic plot of the information obtained, including depth and elevation of the sample, number of blows for the standard penetration tests in three 6-inch increments, depth of press samples, field sample number, sample description - based on laboratory tests and the Casagrande AC classification system - and gradation, plasticity, and moisture content determinations. Results of strength and consolidation testing, if performed, appear on separate enclosures.

At depths where materials are bouldery or gravelly to the extent that the sampler can not be driven, a wash sample is procured for visual classification, in order to determine the general character of the material. These samples are not considered sufficiently representative to warrant laboratory testing.



LOG OF BORING																	
Date Started		3-16-82		Sampler Type		SS		Dia.		1 3/8"		Water Elev.					
Date Completed		3-16-82		Casing Length				Dia.									
Boring No.		B-1		Station B Offset		99+34.18' LT. (REAR ABUTMENT)		Surface Elev.		577.0'							
Elev.	Depth	Std. Pen. (N)	Rec. Loss %	Description				Sample No.	Physical Characteristics					SMTL Class.			
577.0'									% App.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	W.C.	
574.5'				BROWN WITH GRAY GRAVELLY SANDY CLAY				1	16	6	12	31	35	31	11	16	A-6A
572.0'	3/2 1/5			BROWN SANDY SILT				2	6	3	36	26	29	28	7	24	A-4A
569.5'	2/3 1/4			BROWN SANDY CLAY				3	8	8	40	14	30	27	11	17	A-6A
567.0'	7/5 1/7			GRAY WITH BROWN SANDY SILT				4	7	5	40	20	28	19	5	16	A-4A
564.5'	9/6 1/8			TOP OF ROCK													
562.0'				INTERBEDDED LIMESTONE AND CLAY SHALE													VISUAL
561.5'	32(0.5')			GRAY CLAY SHALE AND LIMESTONE				5	33	7	4	23	3	32	10	6	A-7S08
559.0'		1.0	1.5	LIMESTONE, GRAY, HARD, DENSE, FOSSILIFEROUS WITH GRAY, MEDIUM-FIRM CLAY SHALE (0.1 TO 0.2' THICK) (COMPRISING 21% OF THE INTERVAL) AND SCATTERED THIN CLAY SEAMS THROUGHOUT. BROKEN. CORE LOSS 60%.													
Z BOTTOM OF BORING																	

LOG OF BORING																							
Date Started		3-16-82		Sampler Type		SS		Dia.		1 3/8"		Water Elev.		564.0'									
Date Completed		3-16-82		Casing Length				Dia.															
Boring No.		B-2		Station & Offset		100+54.15' RT. (FORWARD ABUTMENT)						Surface Elev.		577.0'									
Elev.	Depth	Std. Pen. (N)	Rec. ft.	Loss ft.	Description								Sample No.	Physical Characteristics					SMTL Class.				
577.0'	0													% Agg.	% C.S.	% F.S.	% Silt	% Clay	L.L.	P.I.	U.C.		
574.5'	2																						
572.0'	4	5/7/9			BROWN SILTY SANDY GRAVEL								1	55	15	12	7	11	21	6	7	A-1-B	
569.5'	6	5/3/2			BROWN SILTY SANDY GRAVEL								2	44	18	14	10	14	23	8	14	A-2-4	
567.0'	10	10/5/8			BROWN WITH GRAY SANDY CLAY								3	0	4	37	30	29	25	12	15	A-6A	
564.5'	12	7/7/8			GRAY SANDY SILT								4	0	1	34	36	29	22	7	16	A-4A	
562.0'	14	30(0.5')			GRAY SANDY SILT								5	4	1	41	24	30	20	6	15	A-4A	
561.0'	16				TOP OF ROCK (INTERBEDDED LIMESTONE AND CLAY SHALE)								6	38	12	13	23	22	27	10	9	A-4A	
561.0'	18	30/50			GRAY WITH BROWN SANDY SILT WITH STONE FRAGMENTS								7										
														Z BOTTOM OF BORING									

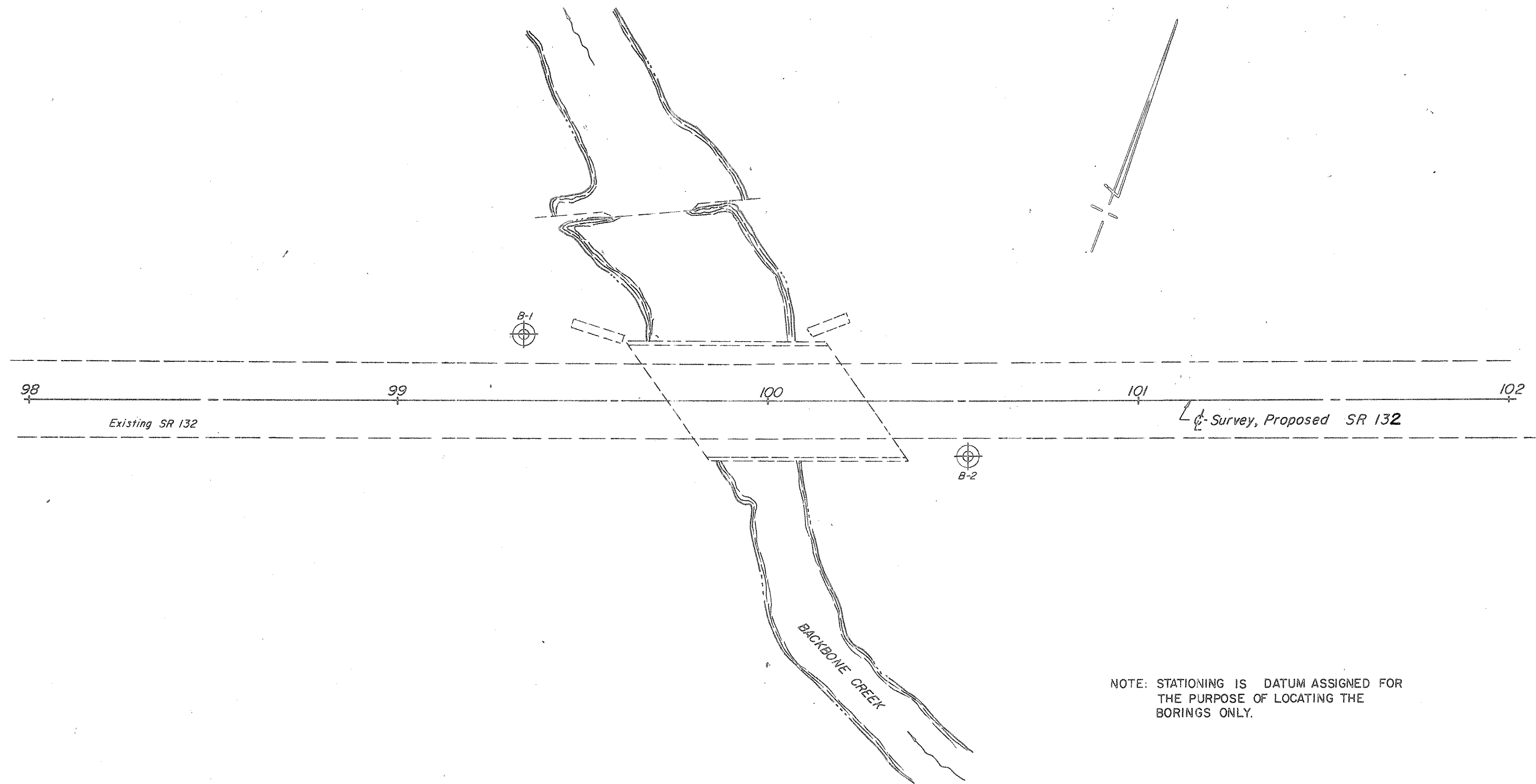
NOTE - ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE STRUCTURE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATIONS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET.

NOTE - Information shown by this subsurface investigation was obtained solely for the use in establishing design controls for the project. The State of Ohio does not guarantee the accuracy of this data and it is not to be construed as a part of the plans governing construction of the project.

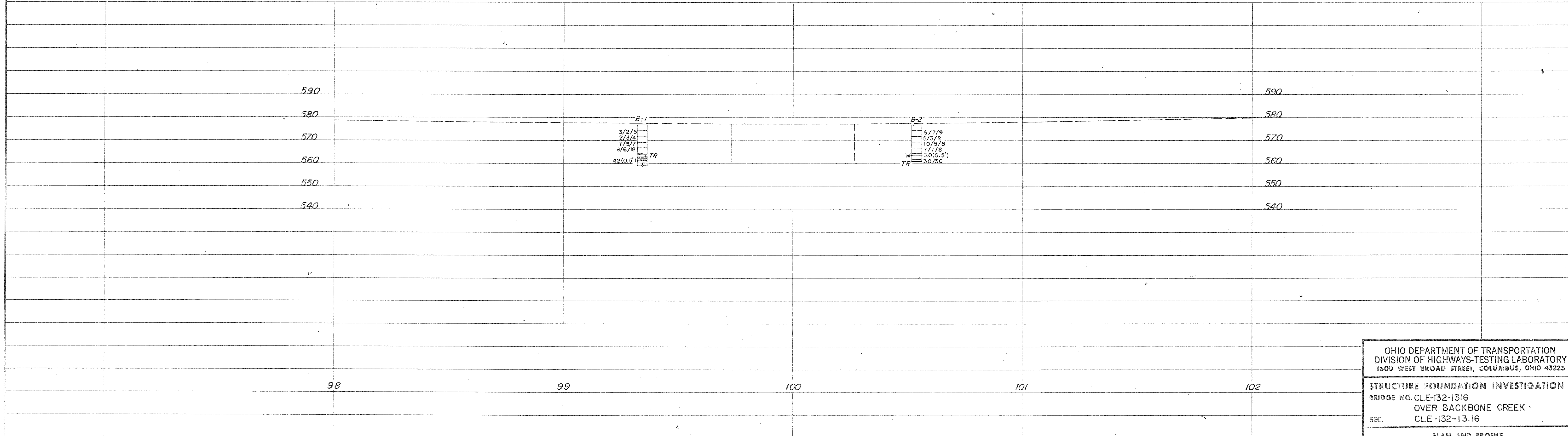
OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - TESTING LABORATORY
1600 WEST BROAD STREET, COLUMBUS, OHIO 43223

STRUCTURE FOUNDATION INVESTIGATION
BRIDGE NO. CLE-132-1316
OVER BACKBONE CREEK
SEC. CLE-132-13.16

CHECKED BY L. N. L. REVIEWED BY R. D. R. DATE 8/19/82



NOTE: STATIONING IS DATUM ASSIGNED FOR THE PURPOSE OF LOCATING THE BORINGS ONLY.



OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS-TESTING LABORATORY 1600 WEST BROAD STREET, COLUMBUS, OHIO 43223			
STRUCTURE FOUNDATION INVESTIGATION			
BRIDGE NO. CLE-132-1316 OVER BACKBONE CREEK			
SEC. CLE-132-13.16			
PLAN AND PROFILE			
DRAWN BY A. F.	CHECKED BY L. N. L.	REVIEWED BY R. D. R.	DATE 8/19/82

SCALE: 1" = 20'