

DESIGN DESIGNATION	
Current A.D.T.	3770
Design Year A.D.T.	8192
D.H.V.	1229
D.	60%
T.	4%
V.	30MPH

MICROFILMED  
OCT 27 1987

STATE OF OHIO  
DEPARTMENT OF TRANSPORTATION

**CAR-9-13.54**  
**CENTER TOWNSHIP**  
**CARROLL COUNTY**

OHIO	1
FHWA REGION 5	27
FEDERAL PROJECT	

BRF-58 (23)  
CAR-9-13.54

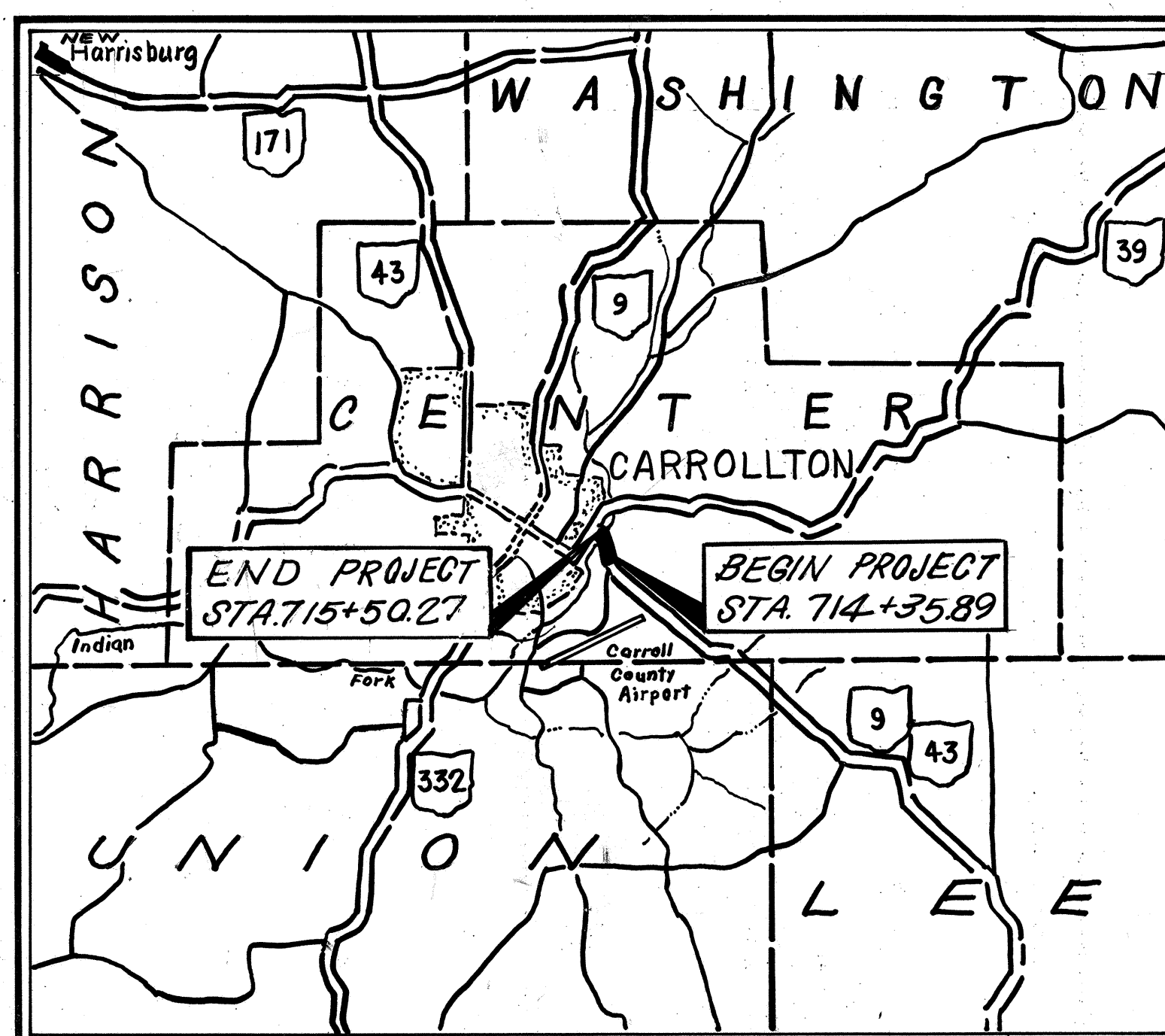
BRF-58 (23)

CONVENTIONAL SIGNS

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

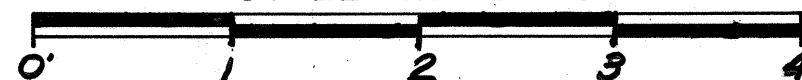
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LOCATION MAP

SCALE IN MILES



Portion to be improved: \_\_\_\_\_  
State & Federal Routes: \_\_\_\_\_  
Other Roads: \_\_\_\_\_

SCALES

Plan: \_\_\_\_\_  
Profile: Horizontal \_\_\_\_\_ Vertical \_\_\_\_\_  
Cross Section: Horizontal \_\_\_\_\_ Vertical \_\_\_\_\_

SUPPLEMENTAL SPECIFICATIONS	
824	10-8-82
836	11-12-85
847	10-17-83
947	10-17-83
861	9-9-83
961	9-9-83

LINE DATA

Begin Project: 714+35.89  
End Project: 715+50.27  
Net Length of Project: 114.38 Lin. Ft. or 0.022 mi.

Begin Work: 713+50.00  
End Work: 716+34.40  
Net Length of Work: 284.40 Lin. Ft. or 0.054 mi.

UNDERGROUND UTILITIES  
TWO WORKING DAYS  
**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	1-11-85				
GR-1	1-11-85				
GR-2B	2-5-82				
GR-3	1-21-85				
GR-4	2-5-82				
MC-9A	1-11-85				
GR-4A	1-30-84				
AS-1-81	11-27-81				
DBR-2-73	4-10-73				
A-1-69	6-12-69				

Approved: \_\_\_\_\_  
Date 12-13-85 District Deputy Director of Transportation

Approved: \_\_\_\_\_  
Date 1-3-86 Engineer, Bureau of Bridges and Structural Design

Approved: \_\_\_\_\_  
Date 3-20-86 Chief Engineer, Planning and Design

Approved: \_\_\_\_\_  
Date 3-20-86 Director, Department of Transportation

Plan Prepared By:

District No. 11  
OHIO DEPARTMENT  
OF TRANSPORTATION

SEAL

Project: CAR-9-13.54

Date of Letting: 19\_\_\_\_ Contract No. \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: \_\_\_\_\_  
DIVISION ADMINISTRATOR DATE

# TYPICAL SECTION

TYPE 404 on 301

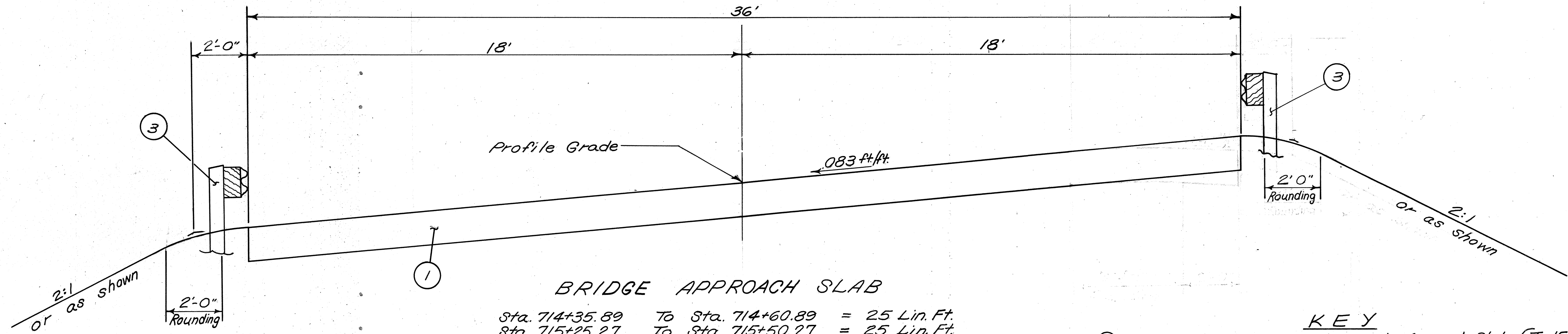
Scale In Feet:

QUANTITIES	
Calc. Date	Chk'd Date
ALF 3/5/85	JNM 3/8/85

FHWA REGION	STATE	PROJECT
5	OHIO	

2  
27

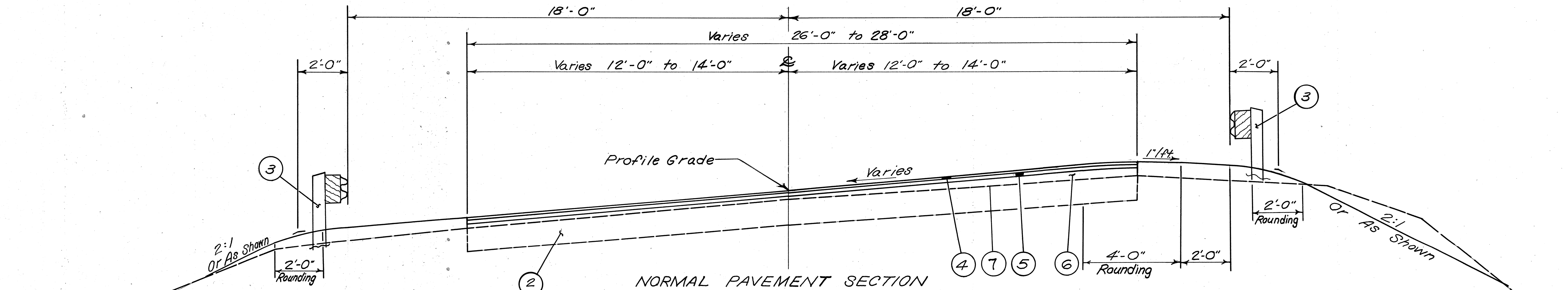
CAR-9-13.54



## BRIDGE APPROACH SLAB

Sta. 714+35.89 To Sta. 714+60.89 = 25 Lin. Ft.  
 Sta. 715+25.27 To Sta. 715+50.27 = 25 Lin. Ft.  
 = 50 Lin. Ft.

- KEY**
- ① Item 611 Reinforced Concrete Approach Slabs (T=15")
  - ② Existing Asphalt Concrete Pavement
  - ③ Item 606 Guardrail Type 5
  - ④ Item 404 1 1/2" Asphalt Concrete AC-20
  - ⑤ Item 402 1 3/4" Asphalt Concrete AC-20
  - ⑥ Item 301 Bituminous Aggregate Base, AC-20, RT11 or RT-12
  - ⑦ Item 407 Tack Coat and Cover Aggregate



## NORMAL PAVEMENT SECTION

Sta. 714+00 To Sta. 714+35.89 = 35.89 Lin. Ft.  
 Sta. 715+50.27 To Sta. 716+00 = 49.73 Lin. Ft.  
 = 85.62 Lin. Ft.

For specific variations in pavement courses, slope, and typical section, see Sheet N<sup>o</sup> 9.



# GENERAL NOTES

QUANTITIES		FHWA REGION	STATE	PROJECT
Calc. Date	Chkd. Date	5	OHIO	
JNM 4/8/85	ALF 4/10/85			

3  
27

CAR-9-13.54

## FIELD OFFICE:

The Contractor shall provide a suitable field office having a minimum of 150 sq ft of floor space. Payment shall be at the lump sum price bid for Item 619, Field Office.

## DATUM:

All elevations are based on U.S.G.S. Datums

## SEEDING:

Quantities for seeding are calculated for the soil areas between the work limits as shown on the cross sections.

## ROUNDING OF CORNERS SHOWN ON CROSS SECTIONS:

The rounded corners shown on the Typical Section apply to all cross sections even though otherwise shown on these plans

## 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 made a matter of record by incorporation into the final change order governing completion of this project.

## LOCATIONS 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.

## CLEARING AND GRUBBING:

Although there are no trees and/or stumps specifically marked for removal within the limits of this project, a lump sum quantity has been included in the General Summary for Item 201 Clearing and Grubbing. All provisions as set forth in the specifications under this item shall be followed and all costs shall be included in the lump sum price bid for Item 201 Clearing and Grubbing.

## PERMANENT SIGNS AND PAVEMENT MARKING:

All necessary permanent signs and pavement marking will be furnished and installed by the Ohio Department of Transportation, District 11.

## WATERING PERMANENT SEEDER AREAS:

The following estimated quantity is to be used as directed by the Engineer to promote growth and to care for the permanent seeded areas as per 659.09  
659 Water 5 M. Gal.

**ITEM 622- TEMPORARY PRECAST CONCRETE BARRIER,** as per plan has been provided for Maintaining Traffic and is shown on Sheet N<sup>o</sup> 5. The quantity shown is for one phase of Maintaining Traffic only. The Contractor shall utilize the same barrier in both phases of the reconstruction. Movement of the barrier between phases shall be accomplished in one (1) working day. Flagmen shall be utilized for protection of vehicular traffic until movement of the barrier is complete and traffic is maintained as per phase 2. All cost involved in moving and placing the barrier will be included in the unit price bid for Item 622 Temporary Precast Concrete Barrier, as per plan.

## UTILITY OWNERSHIP

Following is a list of the owners of utilities known to be within the area of this project.

Village of Carrollton  
Second Street, South West  
Carrollton, Ohio  
Phone 216/627/2411

## 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 O.R.C.

## EROSION CONTROL:

Item 601 is provided in the plans for erosion control. Rock of a stable nature will not be removed in order to place any of this item. The Engineer shall check and non-perform quantities or adjust locations and quantities for this item where indicated by field conditions during construction.

## ITEM 614 - MAINTAINING TRAFFIC:

The Contractor shall maintain traffic at all times in accordance with the requirements of Item 614 by reconstructing the bridge in 2 stages as shown on Sheet 5. One way traffic shall be maintained by use of temporary signals as shown on sheets 6-8.

Shoulder areas used for maintaining traffic during Phase 1 shall be surfaced with 410 aggregate and stabilized with 616 Calcium Chloride. During Phase 2 shoulder areas utilized for maintaining traffic shall be surfaced with 615 Temporary Pavement, Class B.

All signs, drums, barricades, flagmen, and lane closures shall be utilized in conformance with the Ohio Manual of Uniform Traffic Control Devices for Streets and Highways, current edition, latest revisions.

The following estimated quantities have been carried to the General Summary to be used as required for the purpose of Maintaining Traffic.

Item 410	Traffic Compacted Surface, Type A or B	20 Cu. Yd.
Item 615	Temporary Pavement, Class B	62 Sq. Yd.
Item 616	Calcium Chloride	1 Ton
Item 616	Water	5 M- Gal.
Item 622	Temporary Precast Concrete Barrier, As Per Plan	280 Lin. Ft.

Payment for all of the above except Items 410, 615, 616, and 622 shall be included in the price bid for Item 614 Maintaining Traffic.

## CONSTRUCTION SEQUENCE:

### Phase 1:

Before starting any bridge reconstruction which requires closing existing pavement to traffic, all signs signals and temporary concrete barrier shown for phase 1 shall be furnished and erected by the Contractor.

### During Phase 1:

- 1) The existing superstructure and substructure, as shown in the detail for Phase 1, are to be removed.
- 2) The portions of the proposed substructure units outside the limits of the remaining structure are to be constructed.
- 3) The portion of the proposed superstructure shown in the detail for phase 1 is to be constructed.
- 4) The portions of the approach slabs outside the area used for Maintaining Traffic are to be constructed.

Prior to placing the temporary pavement for Phase 2, all earthwork on the side used for maintaining traffic for Phase 2 shall be completed. All permanent guardrail and all temporary concrete barrier shown for Phase 2 shall be furnished and erected by the Contractor prior to maintaining traffic as per Phase 2.

### During Phase 2:

- 1) The remaining portions of the existing superstructure and substructure are to be removed.
- 2) The remaining portions of the proposed substructure units are to be constructed.
- 3) The remaining portion of the proposed superstructure is to be constructed.
- 4) The approach slabs are to be completed.

In addition all remaining earthwork is to be completed and all remaining permanent guardrail shall be furnished and erected by the Contractor prior to removing temporary concrete barrier, signs, and signals.



# 614 WORK ZONE PAVEMENT MARKINGS

GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND WHEN NECESSARY, REMOVE WORK ZONE 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 TO PROVIDE DAY AND NIGHT VISIBILITY. THE MARKINGS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER TO MAINTAIN REQUIRED VISUAL EFFECTIVENESS AND NIGHT VISIBILITY AT NO ADDITIONAL COST TO THE STATE.

THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING OMTCD FULL PATTERN STANDARD DIMENSION EDGE LINE OR CENTER LINE MARKINGS, ERECT A "NO EDGE LINES" (OW-167) SIGN OR "UNMARKED NO PASSING ZONES" (OW-168) SIGN OR BOTH AS MAY BE APPROPRIATE. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL BE REPEATED EVERY 1 TO 2 MILES AND AT OTHER LOCATIONS AS NECESSARY. THESE SIGNS SHALL BE REMOVED WHEN THEY NO LONGER APPLY. THE COST FOR FURNISHING AND ERECTING AND SUBSEQUENTLY REMOVING THESE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC, UNLESS SPECIFICALLY ITEMIZED.

TEMPORARY PAVEMENT MARKING MATERIALS

UNLESS OTHERWISE INDICATED ON THE PLANS, TEMPORARY PAVEMENT MARKINGS MAY BE EITHER 621.02 PAINT OR 947.03 TYPE B OR C PREFORMED MATERIAL. WHERE PAVEMENT MARKING ARE NOT LIABLE TO BE TRACKED, EITHER CONVENTIONAL OR FAST-DRYING PAINT MAY BE USED FOR 621.02.

PAINTED MARKINGS SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT THE INCREASE OF 25 PERCENT IN THE APPLICATION RATE FOR NEW BITUMINOUS PAVEMENT AND PARAGRAPH 621.14 SHALL NOT APPLY.

TYPE B AND TYPE C PREFORMED MATERIAL

PREFORMED MATERIAL SHALL COMPLY WITH 947.03 EXCEPT THAT NO PREFORMED MATERIAL CONTAINING METAL SHALL BE PLACED ON ANY SURFACE UNLESS IT WILL BE REMOVED LATER BY THE CONTRACTOR. TEMPORARY PAVEMENT MARKINGS OF 947.03 PREFORMED MATERIAL SHALL BE REMOVED PRIOR TO PLACEMENT OF 621 OR 847 SURFACE COURSE MARKINGS AT THAT LOCATION. PREFORMED MATERIAL SHALL BE APPLIED IN ACCORDANCE WITH 847 EXCEPT AS MODIFIED HEREIN.

PLACEMENT

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT PRIOR TO EXPOSING IT TO TRAFFIC. WHEN TEMPORARY MARKINGS CONFLICT WITH THE TRAFFIC PATTERN, THEY SHALL BE REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH 621.134.

TEMPORARY MARKING CLASSES

CLASS I MARKINGS

CLASS I MARKINGS SHALL BE APPLIED TO THE FULL DIMENSIONS AS DEFINED IN 621 WITH THE FOLLOWING ADDITIONS OR EXCEPTIONS:

- 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.

CLASS II MARKINGS

CLASS II MARKINGS (ABBREVIATED) SHALL BE DEFINED AS FOLLOWS:

CENTER LINES SHALL CONSIST OF SINGLE, YELLOW 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

LANE LINES SHALL CONSIST OF WHITE 4-INCH WIDE BY A MINIMUM OF 48-INCH LONG DASHES SPACED AT A MAXIMUM OF 40-FOOT INTERVALS.

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

THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 1.6 GALLONS PER MILE FOR LANE LINE AND CENTER LINE AND 16 GALLONS PER MILE FOR GORE MARKINGS.

CONFLICTING EXISTING MARKINGS

THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL CONFLICTING EXISTING 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 INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SPECIFICALLY ITEMIZED.

THE CONTRACTOR SHALL ALSO REMOVE THE PRISMATIC RETRO-REFLECTOR WITHIN ANY RAISED PAVEMENT MARKER (RPM) WHICH IS IN CONFLICT WITH THE TEMPORARY PAVEMENT MARKINGS. WHEN THE TEMPORARY PAVEMENT MARKINGS ARE REMOVED AND THE RPM IS NO LONGER IN CONFLICT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE RECESSED REFLECTOR ATTACHMENT AREA OF THE CASTING AND INSTALL A NEW PRISMATIC RETRO-REFLECTOR OF THE SAME KIND AND COLOR. THE COST FOR THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS.

INTERIM MARKINGS

WITHIN 21 CALENDAR DAYS AFTER OPENING ANY LENGTH OF PAVEMENT TO TRAFFIC, THE 621 OR 847 PAVEMENT MARKINGS CALLED FOR IN THE PLANS OR EQUIVALENT 614 CLASS I, PAINT MARKINGS SHALL BE APPLIED. THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT, AND MATERIAL NECESSARY TO PLACE AND MAINTAIN 614 CLASS I PAINT MARKINGS AS PART OF THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC.

FOR EACH CALENDAR DAY BEYOND 21 DAYS THAT THIS WORK SHALL REMAIN UNCOMPLETED, THE PROVISIONS OF 108.07 WILL BE INVOKED, EXCEPT THAT BETWEEN NOVEMBER 15 AND APRIL 15 WEATHER CONDITIONS SHALL NOT BE AN ACCEPTABLE REASON FOR EXTENSION.

METHOD OF MEASUREMENT

TEMPORARY PAVEMENT MARKINGS WILL BE MEASURED COMPLETE IN PLACE, BY CLASS AND MATERIAL, IN THE UNITS DESIGNATED. 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 0.06	MILES	TEMPORARY CENTER LINES, CLASS I, *
614 0.04	MILES	TEMPORARY CENTER LINES, CLASS II, *
614	LIN. FT.	TEMPORARY CHANNELIZING LINES, CLASS I, *
614	MILES	TEMPORARY EDGE LINES, CLASS I, *
614	LIN. FT.	TEMPORARY GORE MARKINGS, CLASS II, *
614 24	LIN. FT.	TEMPORARY STOP LINES, CLASS I, *
614	LIN. FT.	TEMPORARY CROSSWALK LINES, CLASS I, *
614	EACH	TEMPORARY LANE ARROWS, CLASS I, *
614	EACH	TEMPORARY RAILROAD SYMBOL MARKINGS, CLASS I, *
614	EACH	TEMPORARY WORD "ONLY" ON PAVEMENT, 72-INCH, CLASS I, *
614	LIN. FT.	TEMPORARY TRANSVERSE LINES, CLASS I, *
614	LIN. FT.	TEMPORARY DOTTED LINES, CLASS I, *
*621 PAINT, 947.03 TYPE B OR 947.03 TYPE C		
fh4		

*Quantities carried to Sheet N<sup>o</sup> 10*

PERMANENT PAVEMENT MARKINGS SHALL BE INSTALLED BY ODOT, THE DISTRICT II TRAFFIC ENGINEER SHALL BE NOTIFIED AT LEAST 5 WORKING DAYS PRIOR TO OPENING THE ROAD TO ALLOW FOR SCHEDULING OF THE PAVEMENT MARKING INSTALLATION.

THE ROAD SHALL NOT BE OPENED TO TRAFFIC WITHOUT EITHER THE PERMANENT OR TEMPORARY PAVEMENT MARKINGS IN PLACE.

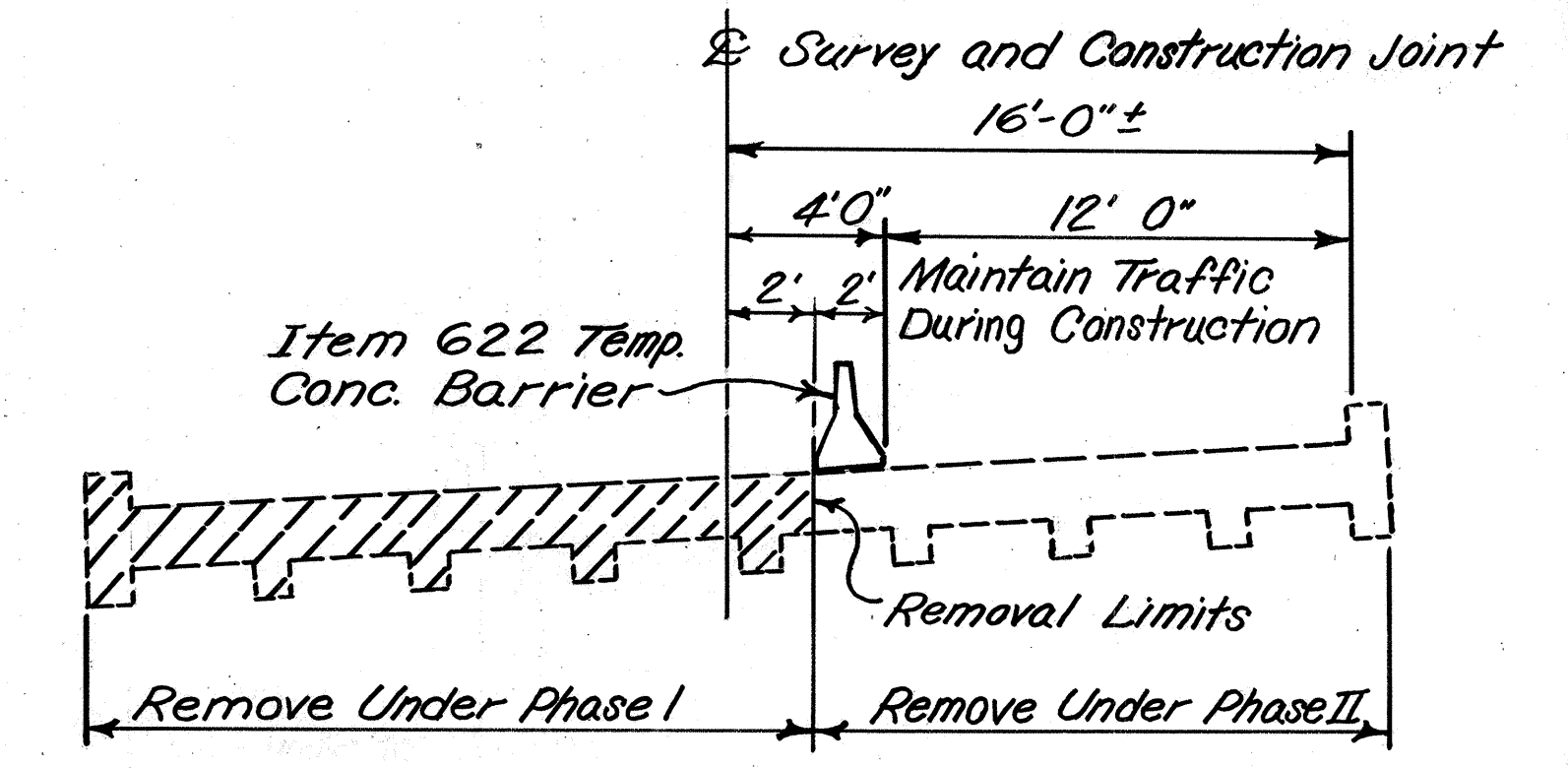
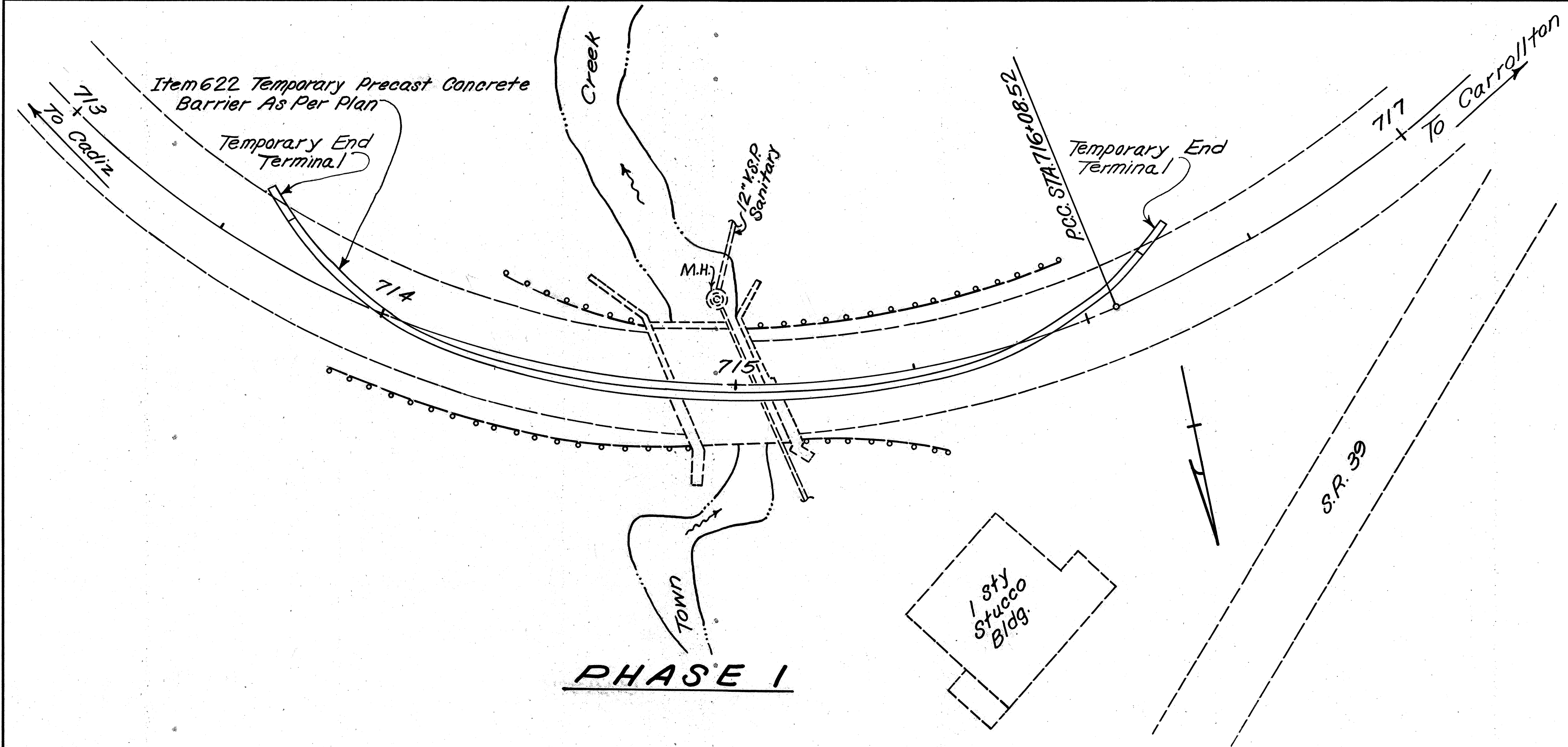


QUANTITIES	
Calc. Date	Chkd. Date
JNM 4/4/85	ALF 4/8/85

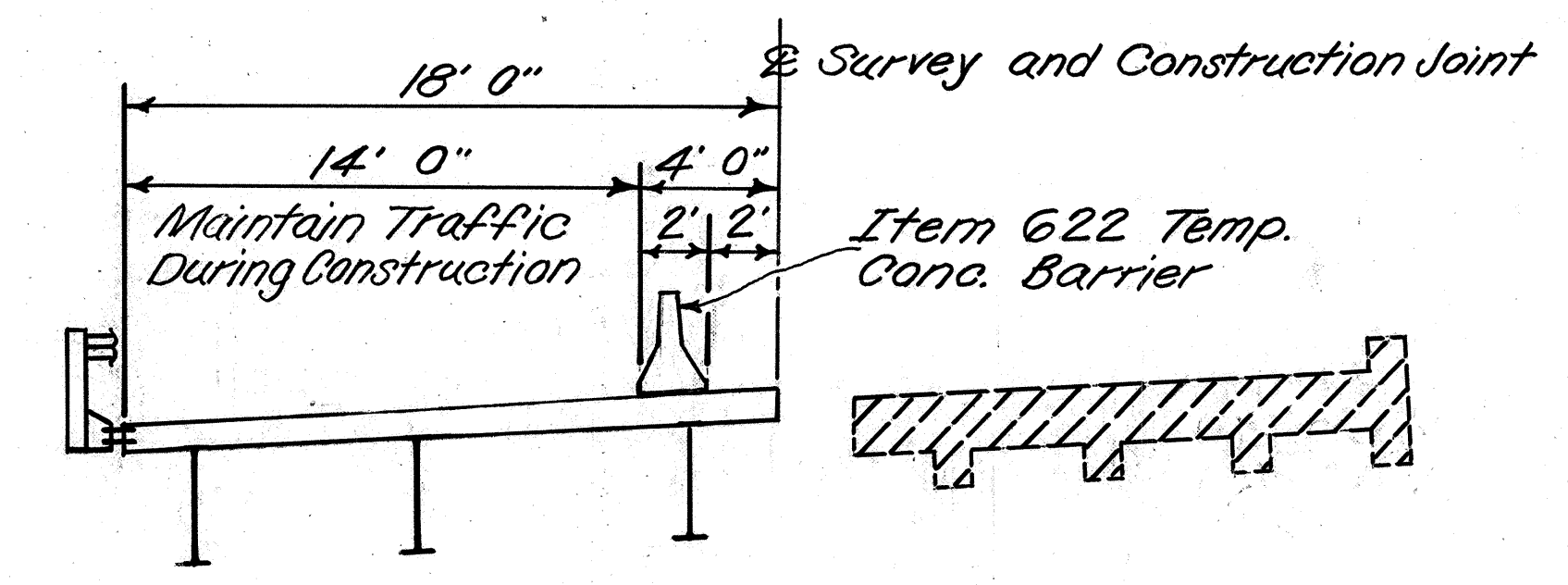
FHWA REGION	STATE	PROJECT
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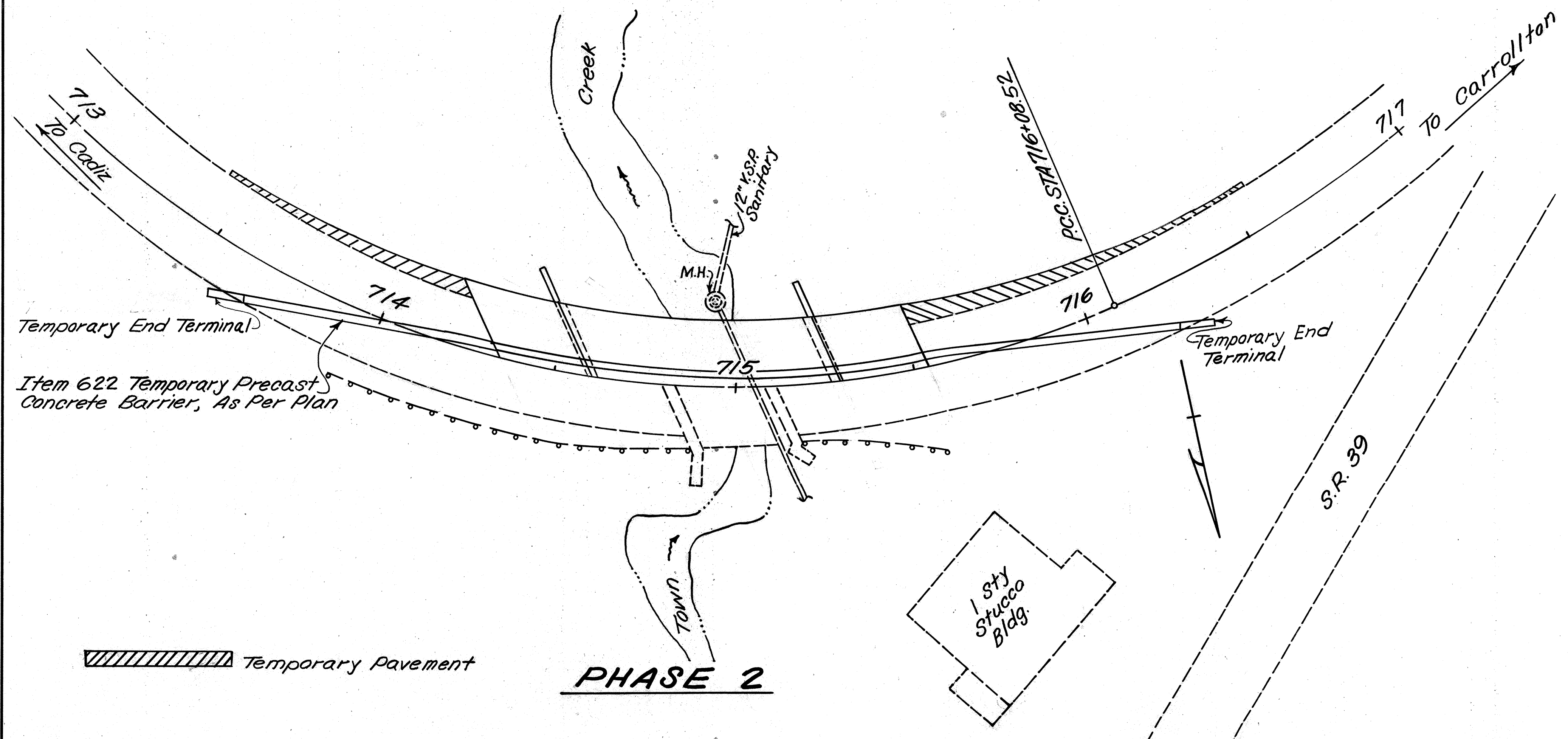
CAR-9-13.54



PHASE 1



PHASE 2



Temporary Pavement

PHASE 2

**614 MAINTAINING TRAFFIC**  
The Contractor shall use the west bound lane of bridge Car-9-1354 for maintaining traffic during phase I.

The following quantities have been carried to sheet N° 3 for maintaining traffic.

- Item 622 Temp. Precast Concrete Barrier As Per Plan 280 Lin. Ft.
- Item 615 Temporary Pavement, Class B 62 Sq. Yd.
- Item 410 Traffic Compacted Surface, Type A or B 20 Cu. Yd.

For maintenance of traffic details not shown, See Sheets 3 & 6-8

**CALCULATIONS**

Item 615 Temporary Pavement, Class B  
Sta. 713+45 to Sta. 714+20 Lt.  
 $75' \times \left(\frac{4'+1'}{2}\right) \div 9 = 20.8 \text{ Sq. Yd.}$

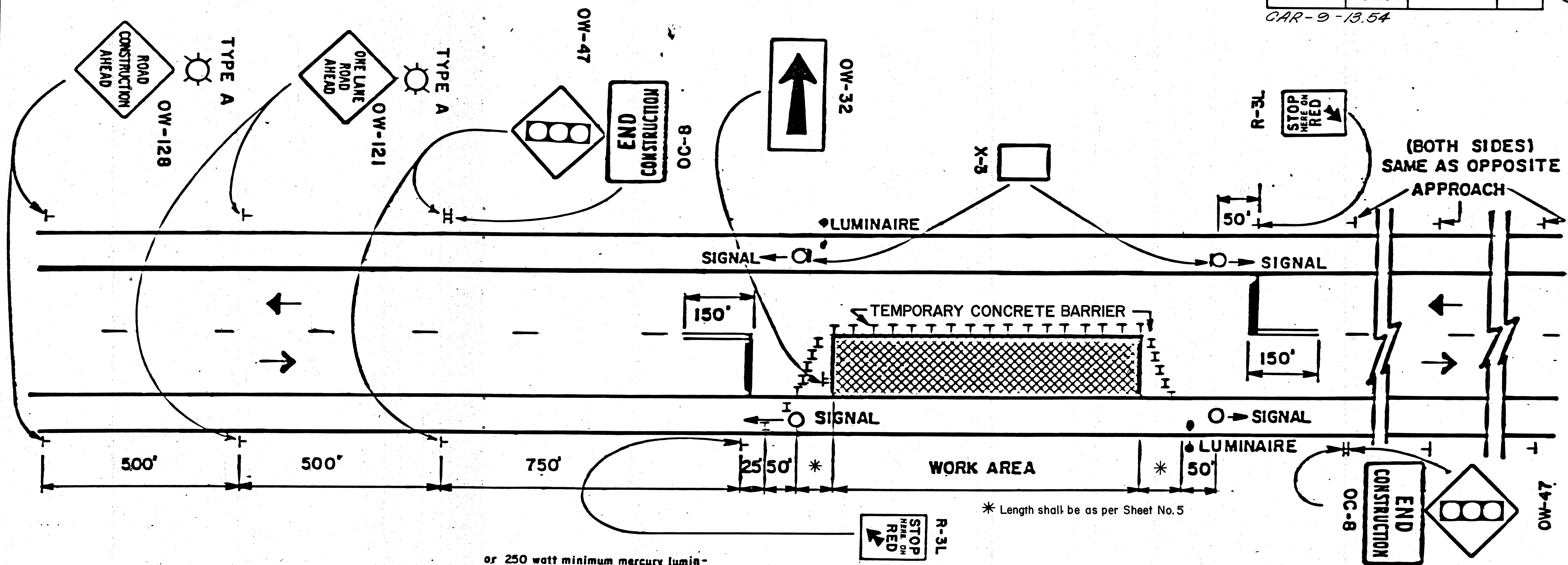
Sta. 715+51 to Sta. 716+56 Lt.  
 $105' \times \left(\frac{6'+1'}{2}\right) \div 9 = 40.8 \text{ Sq. Yd.}$

$20.8 + 40.8 = 61.6 \text{ Sq. Yds. Use: 62 Sq. Yd.}$

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

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27

CAR-9-13.54



**GENERAL NOTES.**

1. The maximum length of work area for one way traffic signal control shall be as shown on sheet no. 5.
2. Signals shall be installed and operated in accordance with the requirements of Part 6 of the Ohio Manual of Uniform Traffic Control Devices.
3. Drums or barricades shall be spaced at 50' to 60' center to center within the work area. Drums or barricades on the advance and return tapers shall be spaced at 10' center to center.
4. Adequate area illumination to clearly identify both ends of the work area at night for long term operations shall be provided by using 150 watt minimum high pressure sodium luminaires

or 250 watt minimum mercury luminaires. Luminaires shall be located adjacent to one signal for each direction of traffic. The mounting height for temporary luminaires shall be a minimum of 27 feet above the pavement and the overhead conductor clearance shall be a minimum of 15 feet above the pavement. Lighting material shall comply with Specification 625.

5. Twenty-four (24) inch stop lines shall be installed and where no passing lines are not already in place they shall be added. Removable pavement markings may be used. Existing conflicting pavement markings and raised pavement marker reflectors between the work area and the stop line shall be removed. After completion of the work the stop lines and added no passing lines shall be removed in accordance with 621.134 and the raised pavement marker reflectors shall be replaced in kind.

6. The Type A flashing barricade warning lights shown on the "Road Construction Ahead" and the "One Lane Road Ahead" signs are required whenever a night lane closure is necessary.
7. Type C steady burning barricade warning lights shall be erected on Temp. Concrete Barrier for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 3.
8. The horizontal or vertical alignment of the roadway may require adjustments in the location of the advance warning signs (the distances shown for advance warning sign spacings are minimums). The vertical alignment of the roadway may require adjustments in the height of the signal heads within the range specified in the Typical Pole Supported Signal Detail.

9. All traffic signals and equipment used in this traffic signal installation, such as a signal cable and signal heads, shall be in conformance with Specifications 632 and 732. However, the performance test provision noted in Specification 632.27, paragraph 6 and the working drawing requirements of 632.03 are waived. The controller, flashers, load switches, conflict monitor and other controller accessories shall comply with Supplemental Specifications 861 and 961, except that the requirements of 861.03 and 861.05 are waived, as well as the requirements of 961.01 for expandible three dial units and twelve circuits for pretimed controllers. Used equipment meeting current ODOT Specifications is acceptable.

10. When the signal is changed to a flash condition either manually or automatically, red shall be flashed to both approaches.

Conflict monitors shall be furnished at all locations unless an electromechanical pretimed controller with cam shaft is provided.

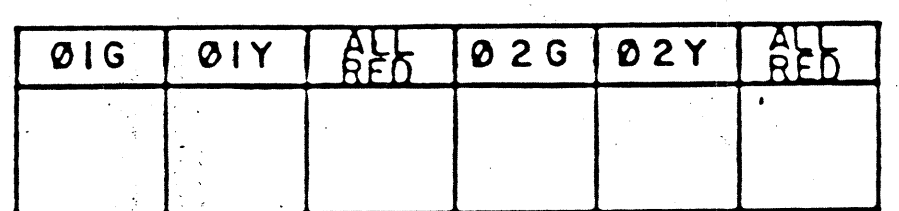
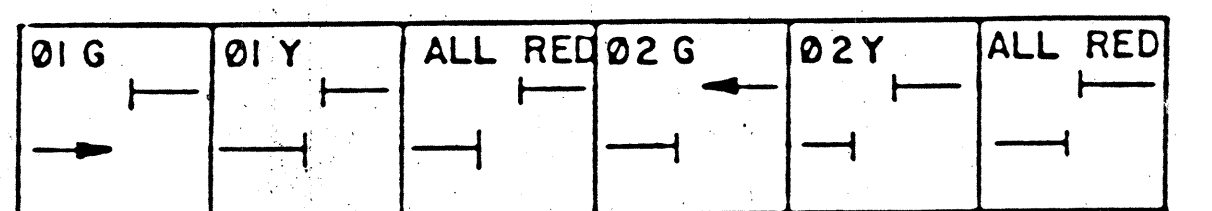
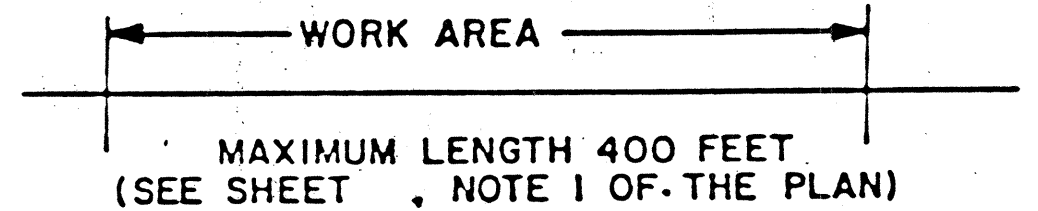
OHIO DEPARTMENT OF TRANSPORTATION	
SIGNALIZED CLOSING 1 LANE OF A 2 LANE HIGHWAY	DATE 12/82 3/84 4/85
OR.	CK.



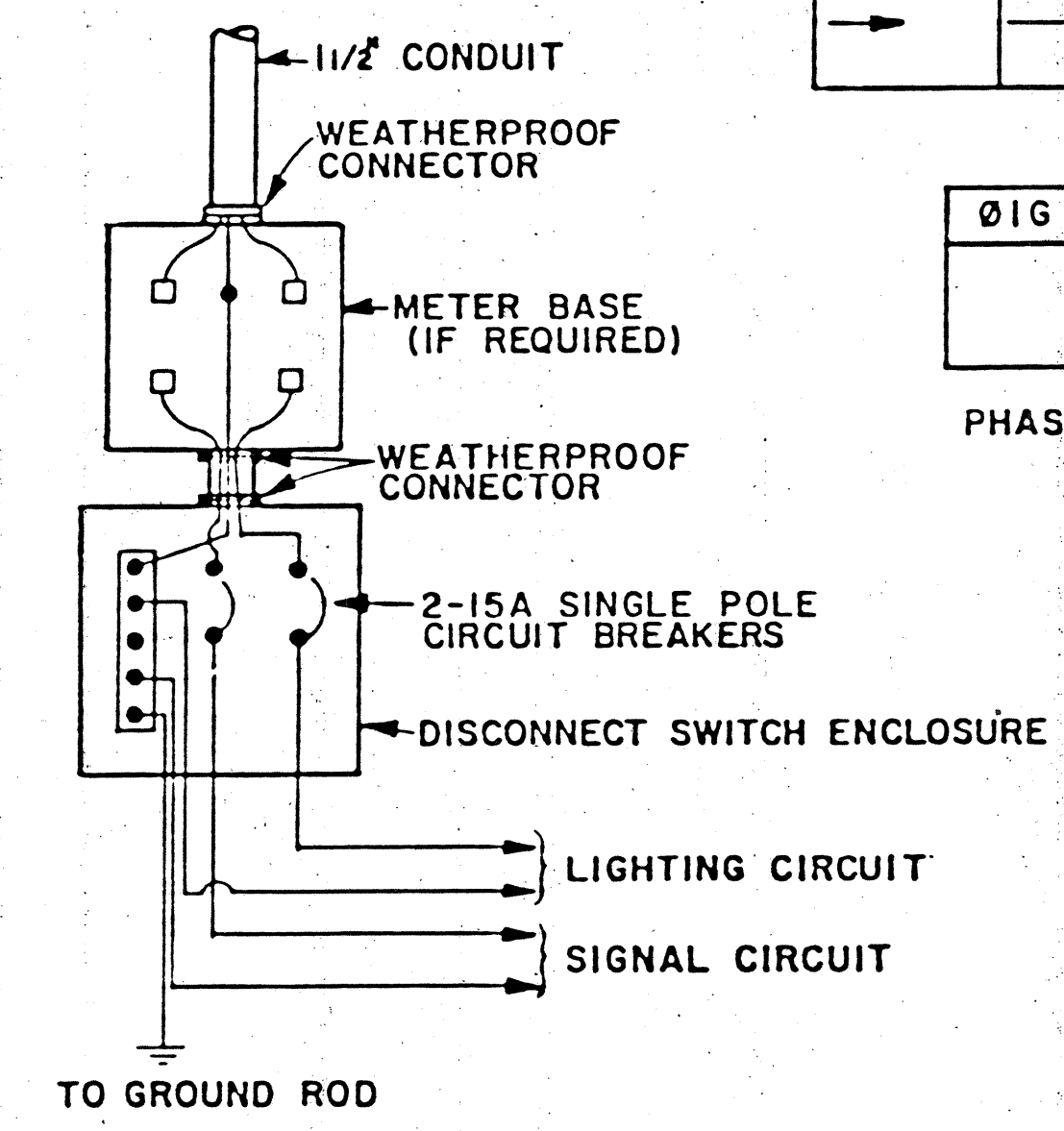
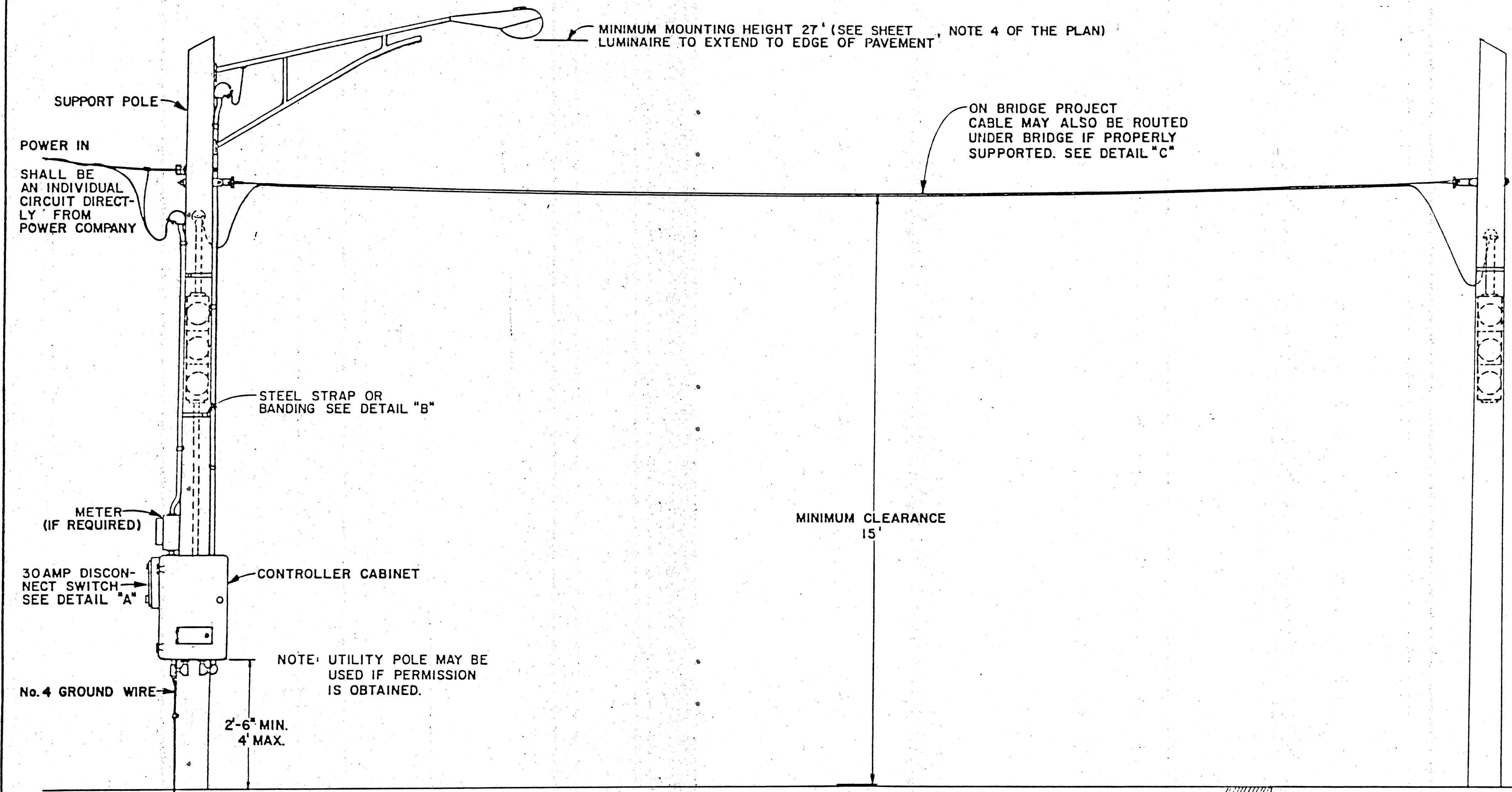
FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

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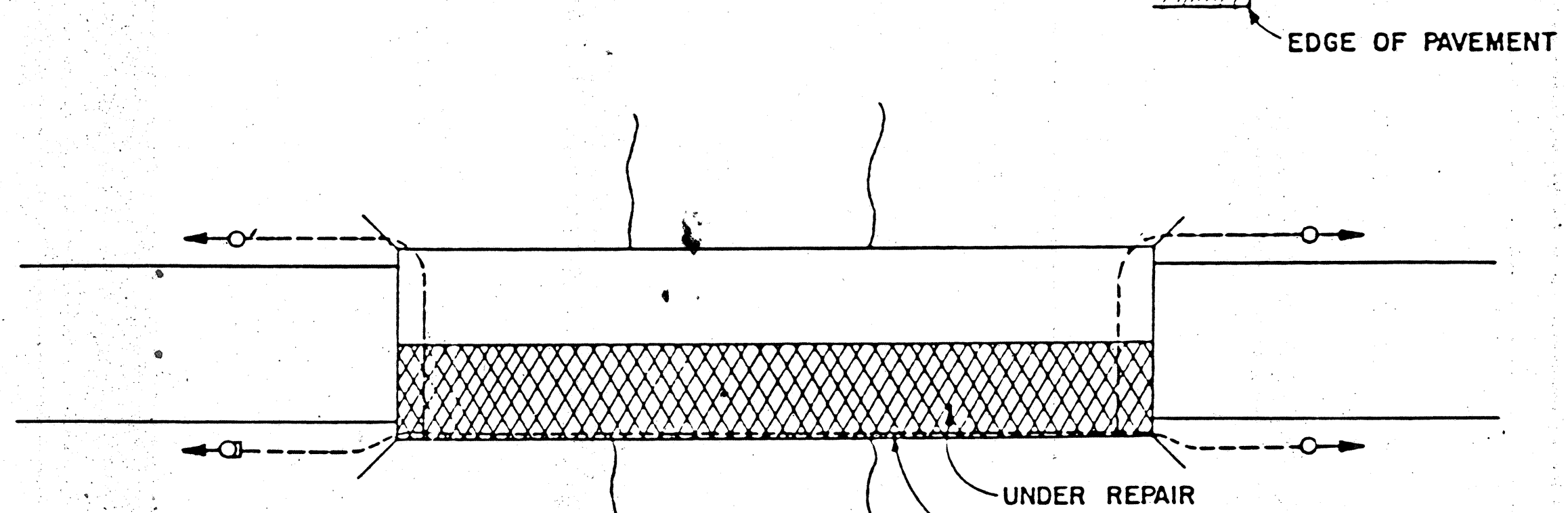
CAR-9-13.54



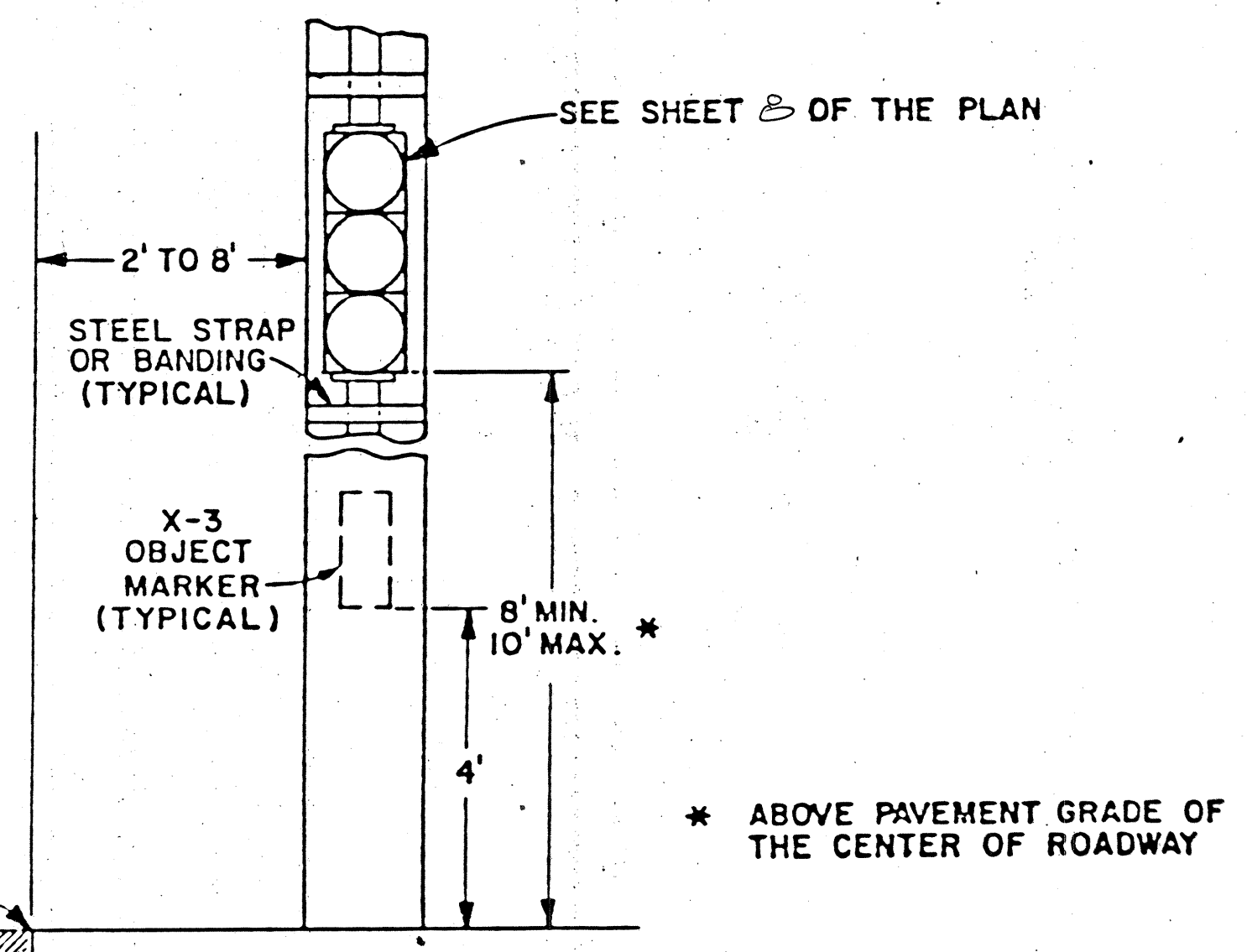
PHASING AND INITIAL TIMING SETTINGS



DETAIL "A"



CABLE RUNS WITHOUT CONDUIT SHALL BE SUPPORTED BY INSULATOR SPACED NOT MORE THAN 10' APART.



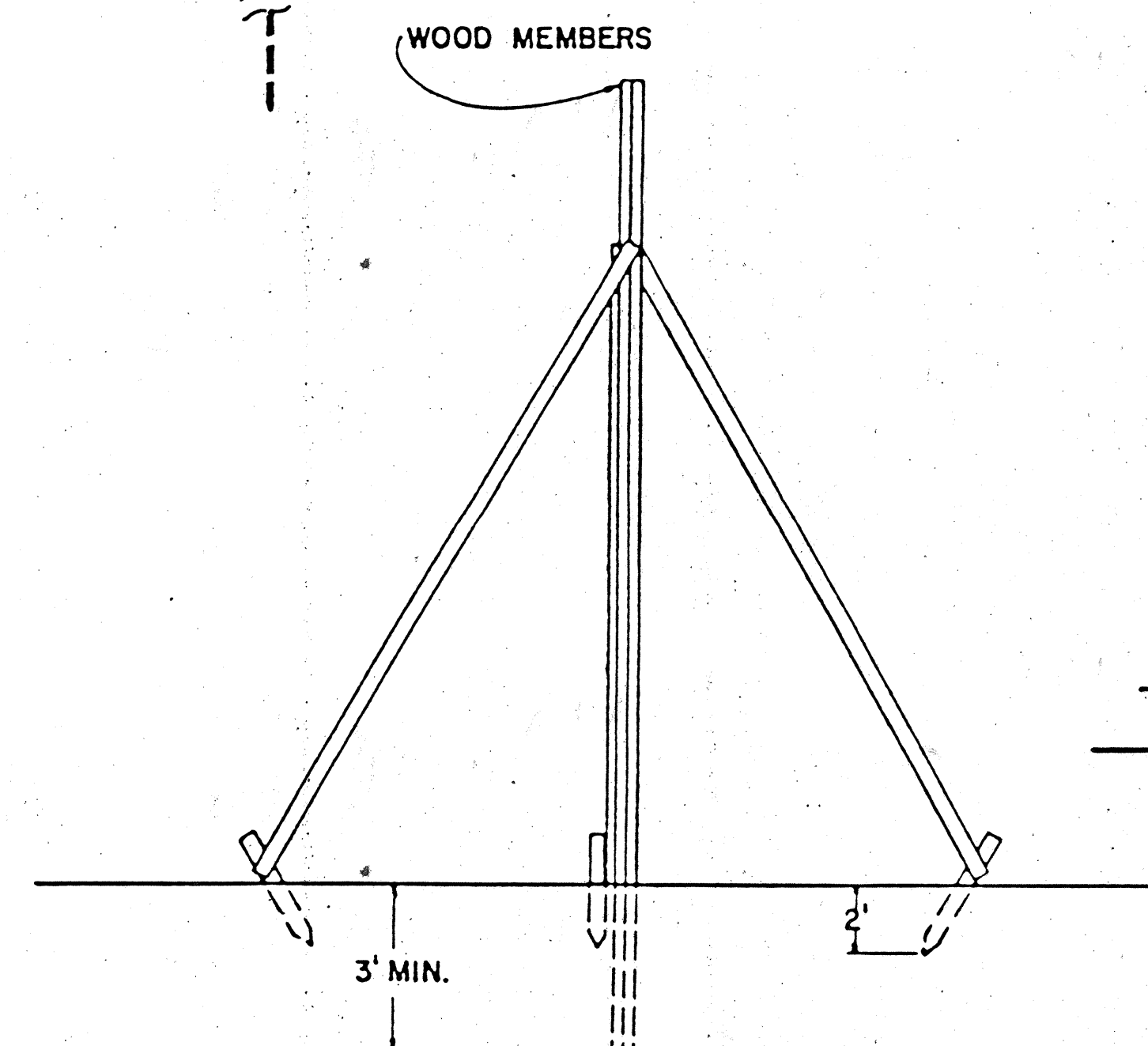
DETAIL "B"

\* ABOVE PAVEMENT GRADE OF THE CENTER OF ROADWAY

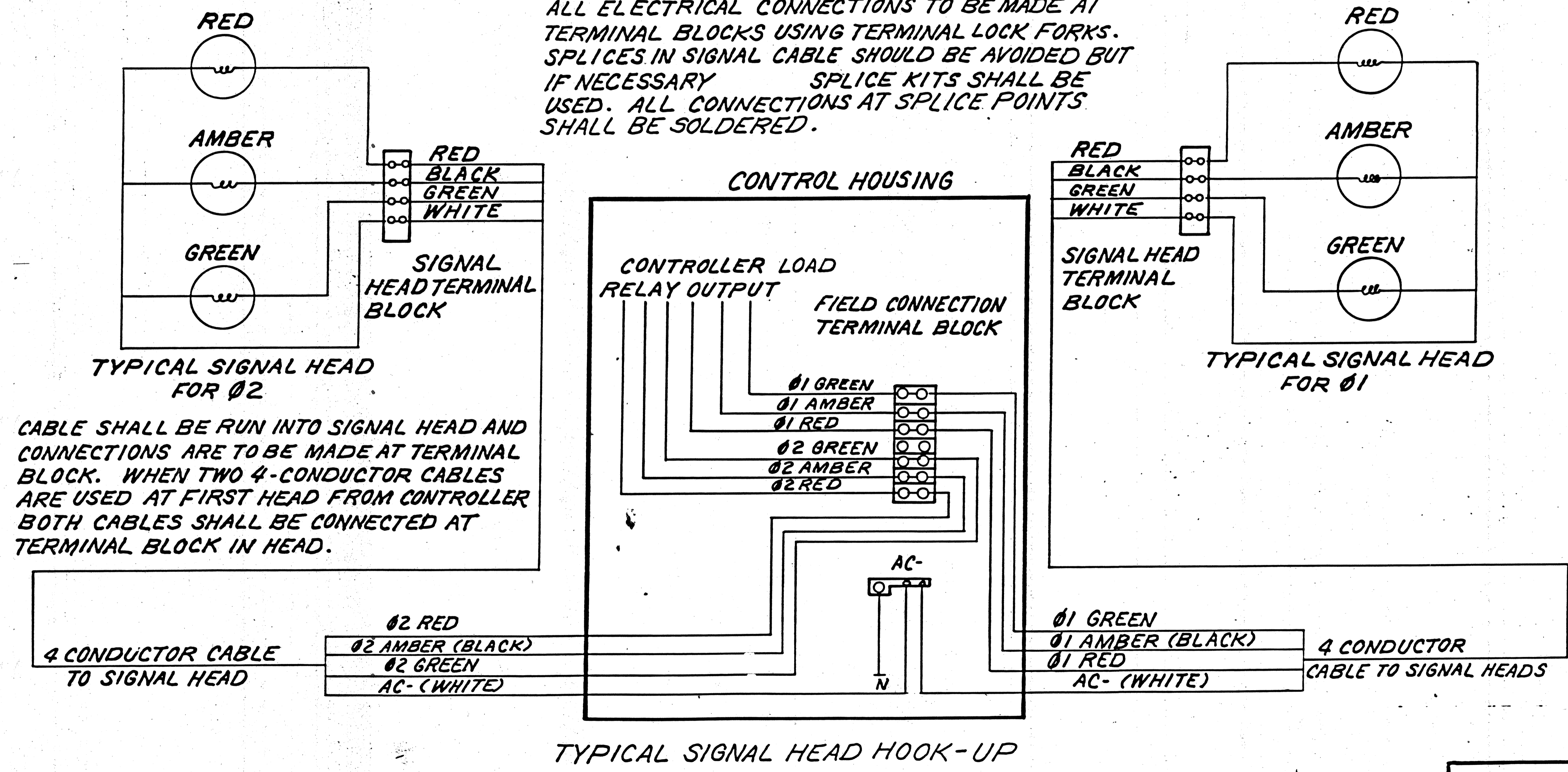
TYPICAL SERVICE, LUMINAIRE, SIGNAL HEAD AND CONTROLLER CABINET INSTALLATION

OHIO DEPARTMENT OF TRANSPORTATION	
SIGNALIZED CLOSING 1 LANE OF A 2 LANE HIGHWAY	DATE 4/85
DR.	CK.

ALTERNATE SUPPORT POLE METHOD



CABLE SHALL BE 4-CONDUCTOR No. 14 COPPER SIGNAL CABLE, COLOR CODED AND STRANDED. ALL ELECTRICAL CONNECTIONS TO BE MADE AT TERMINAL BLOCKS USING TERMINAL LOCK FORKS. SPLICES IN SIGNAL CABLE SHOULD BE AVOIDED BUT IF NECESSARY SPLICE KITS SHALL BE USED. ALL CONNECTIONS AT SPLICE POINTS SHALL BE SOLDERED.



CABLE SHALL BE RUN INTO SIGNAL HEAD AND CONNECTIONS ARE TO BE MADE AT TERMINAL BLOCK. WHEN TWO 4-CONDUCTOR CABLES ARE USED AT FIRST HEAD FROM CONTROLLER BOTH CABLES SHALL BE CONNECTED AT TERMINAL BLOCK IN HEAD.

TYPICAL SIGNAL HEAD HOOK-UP

OHIO DEPARTMENT OF TRANSPORTATION	
SIGNALIZED CLOSING 1 LANE OF A 2 LANE HIGHWAY	DATE 4/85
DR.	CK.



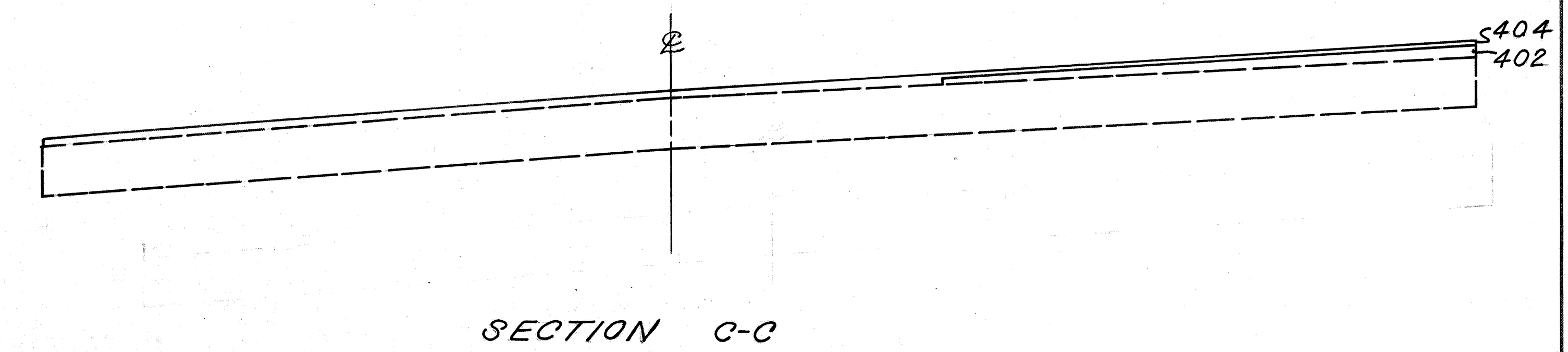
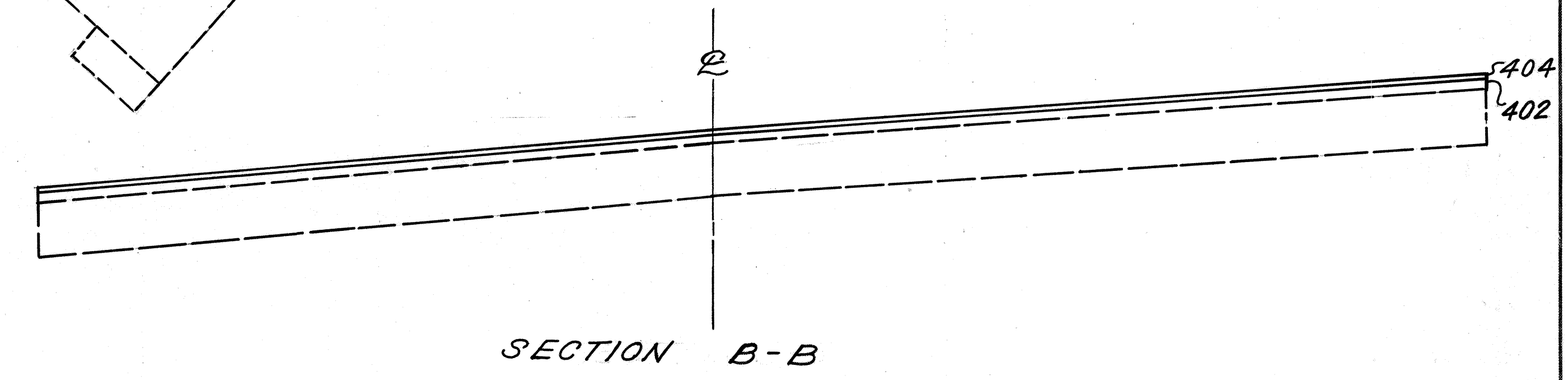
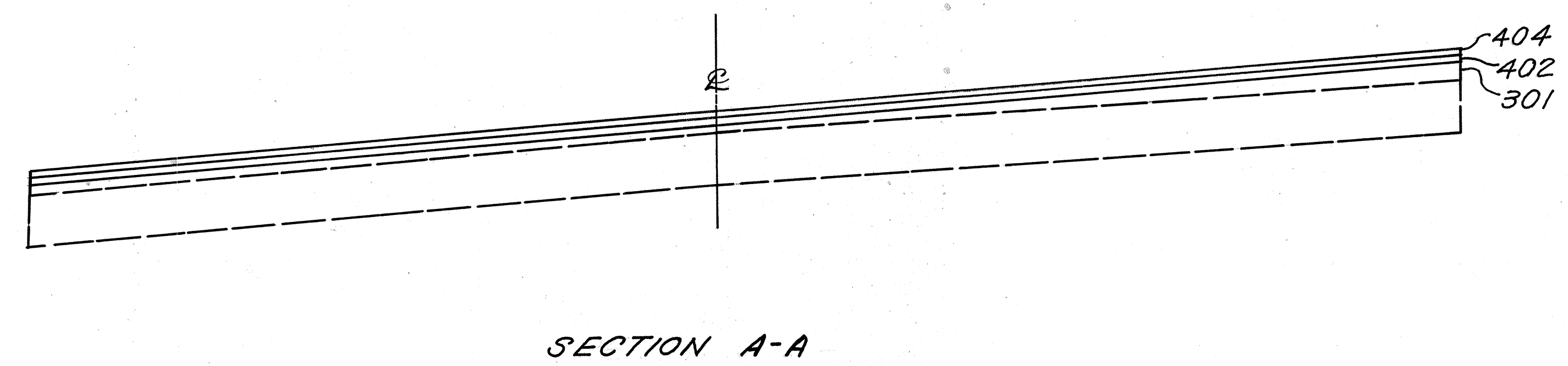
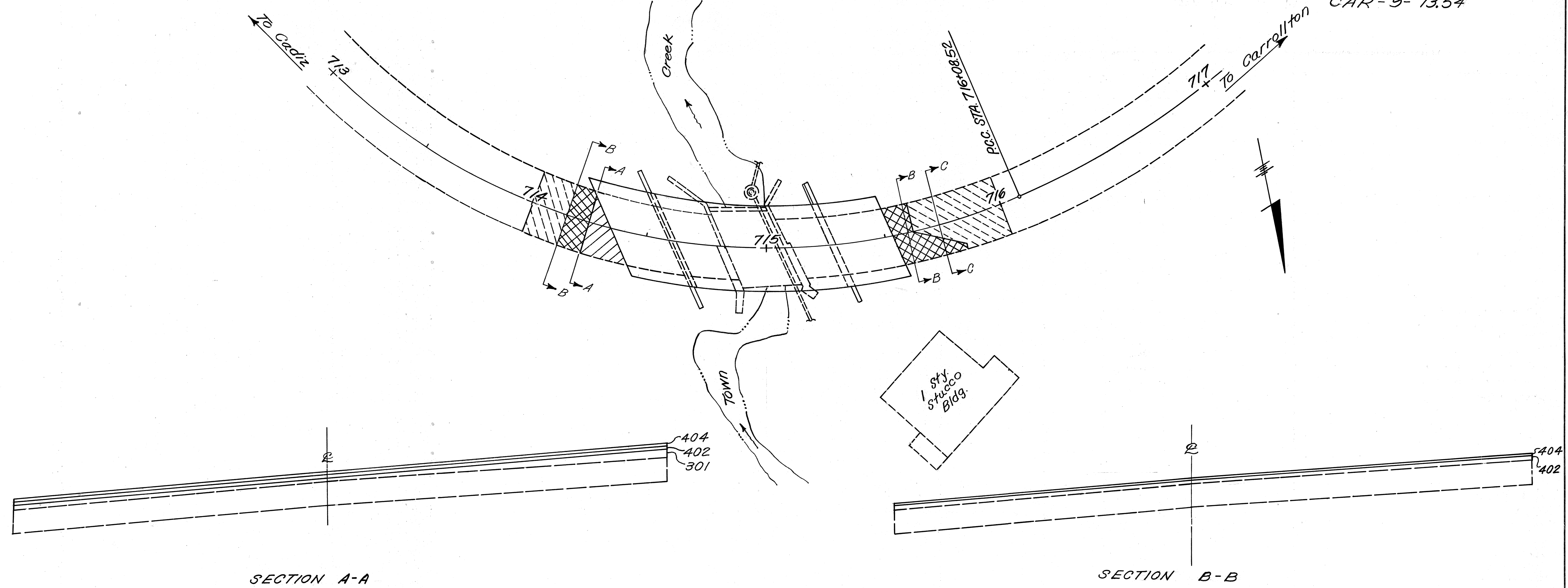
# PAVEMENT DETAILS

QUANTITIES	
Calc. Date	Chk'd. Date
JNM 7/16/85	ALF 4/18/85

FHWA REGION	STATE	PROJECT
5	OHIO	

9  
27

CAR-9-13.54



PAVEMENT ELEVATIONS					
Lt. Edge Elevation	Width	Survey Station	Profile Elev. @ Pavement	Width	Rt. Edge Elevation
Meet Exist.	12'	714+00	1032.10	12'	Meet Exist.
1029.96	}	714+25	1030.96	}	1031.96
1029.60		714+35.89	1030.60		1031.60
1030.78	}	715+50.27	1031.78	}	1032.68
1032.22		715+75	1033.22		1034.02
Meet Exist.	12'	716+00	1034.89	12'	Meet Exist.

Pavement edge elevations have been calculated using a 24' pavement width. Where the existing pavement width exceeds 24', the pavement slope shall be projected to the edge of the existing pavement.

- Crown Correction using 301 & 402 Surfaced with 404 See Section A-A
- Crown correction using 402 Surfaced with 404 (See Section B-B & C-C)
- 404 Surface Course



# CALCULATIONS & GENERAL SUMMARY

Item 404 ASPHALT CONCRETE  
Sta. 714+00 To Sta. 714+35.89  
 $35.89' \times 28' \times \frac{11\frac{1}{2}}{12} \div 27 = 39 \text{ Cu. Yds.}$

Sta. 715+50.27 To Sta. 716+00  
 $49.73' \times 26' \times \frac{11\frac{1}{2}}{12} \div 27 = 5.0 \text{ Cu. Yds.}$

Total Item 404 USE 9 Cu. Yds.

Item 402 ASPHALT CONCRETE  
Sta. 714+15 To Sta. 714+25  
 $(\frac{23\frac{1}{4}}{12} \text{ Ave Thick}) \times \text{Planimetered Area } 264 \text{ S.F.} \div 27 = 2.2 \text{ Cu. Yds.}$

Sta. 714+25 To Sta. 714+35.89  
 $10.89' \times 28' \times \frac{11\frac{1}{2}}{12} \div 27 = 1.6 \text{ Cu. Yds.}$

Sta. 715+50.27 To Sta. 715+80  
 $(\frac{21\frac{1}{2}}{12} \text{ Ave Thick}) \times \text{Planimetered Area } 380 \text{ S.F.} \div 27 = 2.6 \text{ Cu. Yds.}$

Total Item 402 USE 6.4 Cu. Yds.

Item 301 Bituminous Aggregate Base  
Sta. 714+25 To Sta. 714+35.89  
 $(\frac{37\frac{1}{2}}{12} \text{ Ave Thick}) \times \text{Planimetered Area } 278 \text{ S.F.} \div 27 = 3.2 \text{ Cu. Yds.}$

USE 4 Cu. Yds.

Item 407 Tack Coat  
Sta. 714+00 To Sta. 714+35.89  
 $35.89' \times 28' \div 9 = 111.7 \text{ Sq. Yd.}$

Sta. 715+50.27 To Sta. 716+00  
 $49.73' \times 26' \div 9 = 143.7 \text{ Sq. Yd.}$

USE 255.4 Sq. Yd.

256 Sq. Yd. x 0.1 Gal. = 25.6 Gal.

USE 26 Gal.

Cover Aggregate  
256 Sq. Yd. x 7 ÷ 2000 = 0.9 Ton

USE 1 Ton

Item 611 Reinforced Concrete Approach Slabs  
Sta. 714+35.89 To Sta. 714+60.89  
 $25' \times 36' \div 9 = 100 \text{ Sq. Yd.}$

Sta. 715+25.27 To Sta. 715+50.27  
 $25' \times 36' \div 9 = 100 \text{ Sq. Yd.}$

Total Item 611 200 Sq. Yd.

Item 203 Subgrade Compaction From Approach Slabs 200 Sq. Yds.

ITEM 203-EARTHWORK				
ITEM 659-SEEDING				
Sheet No.	Station	Excavation Cu. Yds.	Embankment Cu. Yds.	Seeding Sq. Yds.
12	713+50 to 714+88	313	49	337
13	715+12 to 715+75	263	2	104
14	1+15 to 1+80	54	54	156
	TOTAL	630	105	597

Item 659 COMMERCIAL FERTILIZER  
From seeding 597 Sq. Yd. x 9 ÷ 1000 x 20 ÷ 2000 = 0.05 Tons

Item 659 Agricultural Liming  
From seeding 597 Sq. Yd. x 9 ÷ 1000 x 100 ÷ 2000 = 0.27 Tons

GENERAL SUMMARY										
Sheet Number				Item	Quantity	Unit	DESCRIPTION			
3	4	10	11				ROADWAY			
				Lump	201	Lump	Clearing and Grubbing			
			305	202	305	Lin. Ft.	Guardrail Removed			
		630		203	630	Cu. Yd.	Excavation not including Embankment Construction			
		105		203	105	Cu. Yd.	Embankment			
		200		203	200	Sq. Yd.	Subgrade Compaction			
20				410	20	Cu. Yd.	Traffic Compacted Surface Type A or B			
1				616	1	Ton	Calcium Chloride			
5				616	5	M-Gal.	Water			
				28750	606	28750	Lin. Ft.	Guardrail, Type 5		
				2	606	2	Each	Anchor Assembly, Standard Type A		
				4	606	4	Each	Bridge Terminal Assembly, Standard Type B		
				1	606	1	Each	Anchor Assembly, Standard Type T		
280				622	280	Lin. Ft.	Temporary Precast Concrete Barrier, As Per Plan			
62				615	62	Sq. Yd.	Temporary Pavement Class B			
	0.04			614	0.04	Mile	Temporary Center Lines, Class II			
	0.06			614	0.06	Mile	Temporary Center Lines, Class I			
	24			614	24	Lin. Ft.	Temporary Stop Lines, Class I			
PAVEMENT										
				9	404	9	Cu. Yd.	Asphalt Concrete, AC-20		
				7	402	7	Cu. Yd.	Asphalt Concrete AC-20		
				4	301	4	Cu. Yd.	Bituminous Aggregate Base, AC-20, Rt-11 or Rt-12		
				26	407	26	Gal.	Tack Coat		
				1	407	1	Ton	Cover Aggregate		
				200	611	200	Sq. Yd.	Reinforced Concrete Approach Slab (T=15)		
EROSION CONTROL										
				196	601	196	Cu. Yd.	Rock Channel Protection, Type B without filter		
				50	601	50	Cu. Yd.	Rock Channel Protection, Type C with filter		
				597	659	597	Sq. Yd.	Seeding and Mulching		
5				659	5	M-Gal.	Water			
				0.05	659	0.05	Ton	Commercial Fertilizer		
				0.27	659	0.27	Ton	Agricultural Liming		
For Bridge Quantities See Sheet N° 16										
				Lump	614	Lump	Maintaining Traffic			
				Lump	619	Lump	Field Office			
					623	Lump	Construction Layout Stakes			
					624	Lump	Mobilization			

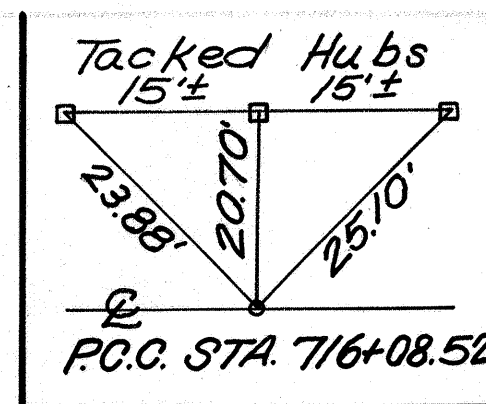
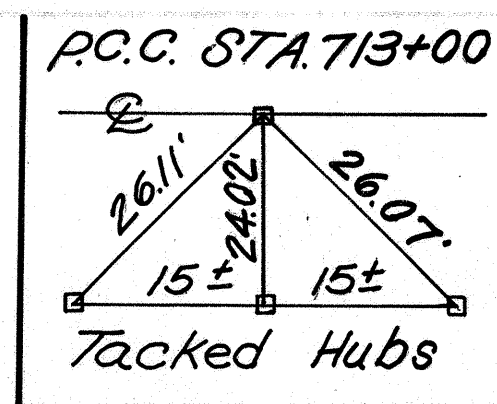


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**QUANTITIES**  
Calc. Date Chkd. Date  
JNM 4/23/85 ALF 4/25/85

FHWA REGION 5 OHIO PROJECT CAR-9-13.54  
11 27

**CURVE DATA**  
P.I. STA. 717+06.92  
 $\Delta = 32^\circ 33' 06''$   
 $D = 17'$   
 $T = 98.40'$   
 $R = 337.03'$   
 $L = 191.48'$   
 $E = 14.07'$



**CURVE DATA**  
P.I. STA. 714+75.25  
 $\Delta = 67^\circ 52' 23''$   
 $D = 22^\circ 00'$   
 $T = 1175.225'$   
 $R = 260.441'$   
 $L = 308.52'$   
 $E = 53.477'$

**EXISTING STRUCTURE**  
Type: Conc. Beam  
Span: 24'-6" Clear  
Roadway: 31'-8"  
Skew: 25° Rt. Fwd.  
Alignment: 22° L.C.  
To Be Removed

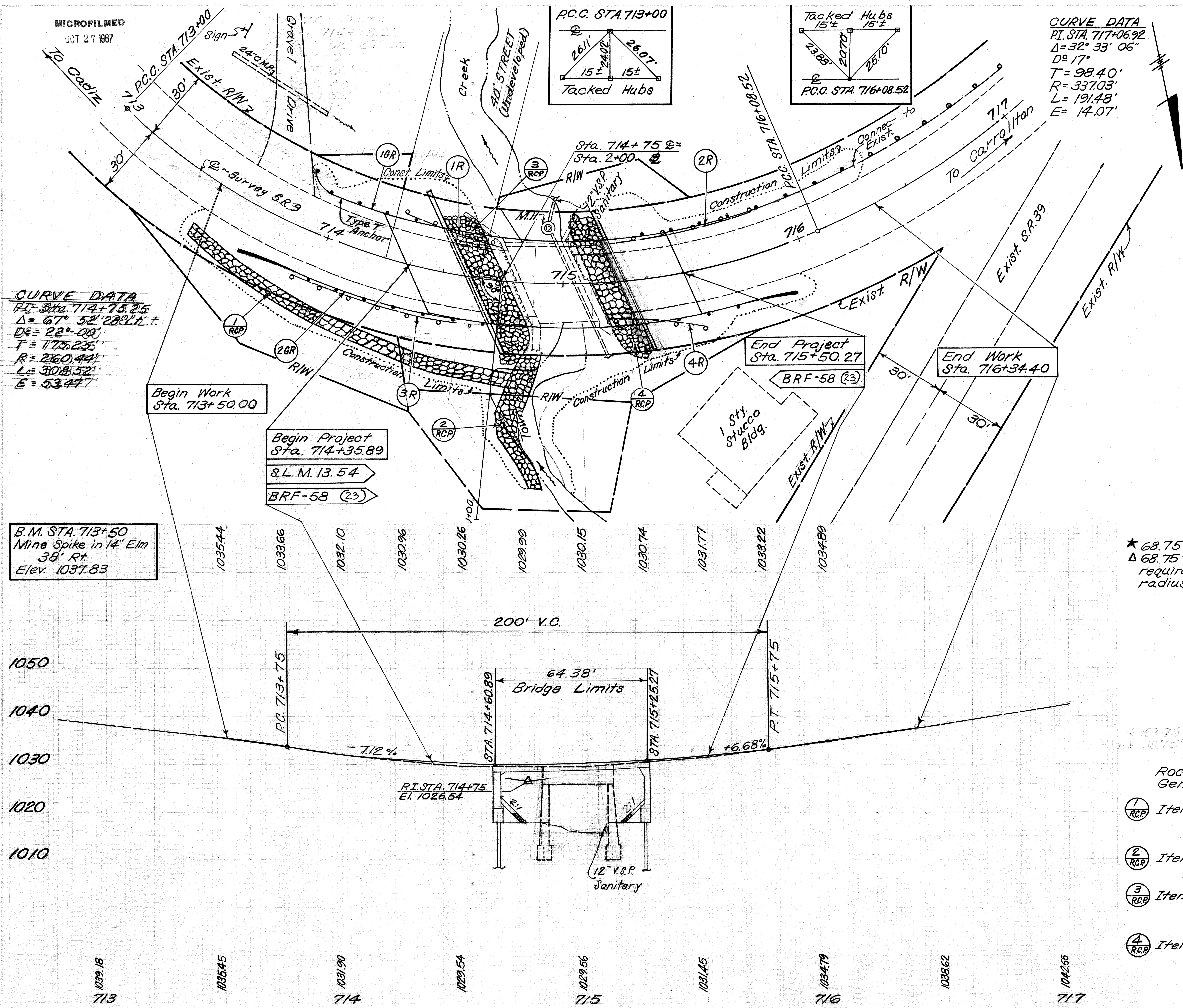
**PROPOSED STRUCTURE**  
Composite Steel Beam Bridge w/Rain-Forced  
Type: Concrete Substructure (Integral Abutment)  
Spans: 62'-0" 9/8 brgs.  
Roadway: 36'-0" A/P Guard Rail  
Skew: 25° R.F. (From Reference Chord)  
Design Loading: HS-20-44 Alter. Military Loading  
Approach Slabs: 25'-0" long, AS-1-81 (CASE II)  
Alignment: 22°-00' Left Curve  
Superelevation: 0.0833%/ft.  
Wearing Surface: Monolithic Concrete  
Average Daily Traffic: 8192 (2004)

\* 68.75' is bridge rail  
 $\Delta$  68.75' is bridge rail  
requires 12.5' of 10'  
radius curved sections.

ITEM 606 GUARDRAIL							ITEM 202		
Ref. No.	Anchor Assembly Type T	STATION		Side	Type 5	Bridge Terminal Assembly Type B	Anchor Assembly Type A	Guardrail Removed	
		From	To						Lin. Ft.
1GR	1	713+39.42	716+34.40	Lt.	168.75	2		32	
2GR	2	713+69.50	715+91.64	Rt.	118.75	2	2		
1R		714+28	714+74	Lt.				46	
2R		715+03	716+00	Lt.				97	
3R		713+94	714+88	Rt.				94	
4R		715+17	715+53	Rt.				36	
					TOTAL	287.50	4	2	305

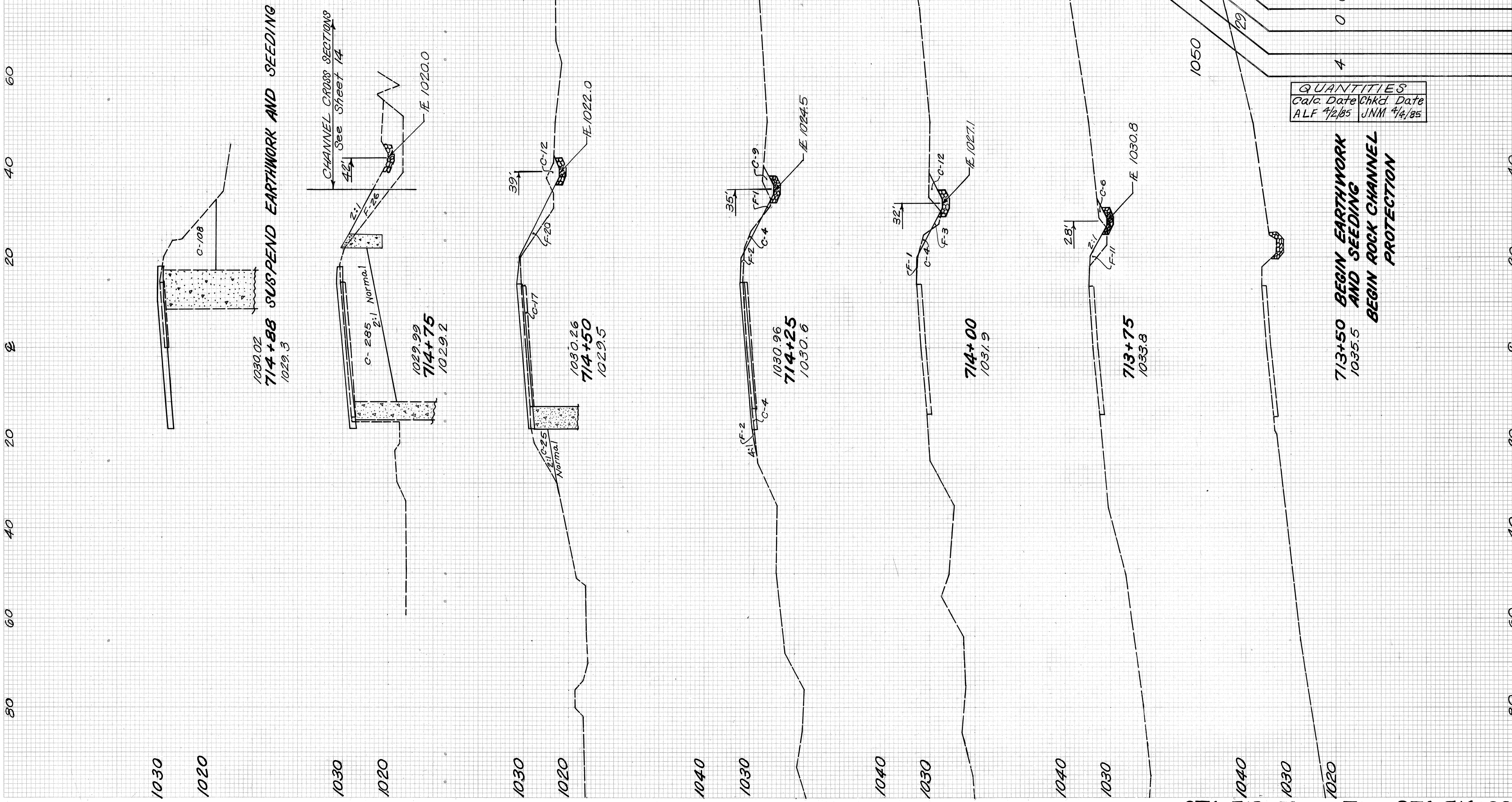
Rock Channel Protection Quantities Carried to General Summary Sheet No. 10.

- ① RCP Item 601 Rock Channel Protection, Type C with Filter Sta. 713+50 to Sta. 714+80 Rt.  $150' \times 6' \times (\frac{18''}{12}) \div 27 = 50$  Cu. Yd.
  - ② RCP Item 601 Rock Channel Protection Type B without Filter Quantity from Sheet No. 12. 4.5 Cu. Yd.
  - ③ RCP Item 601 Rock Channel Protection, Type B, without Filter Rear Abutment  $12' \times 65' \times 2.5' \div 27 = 72.2$  Cu. Yd.
  - ④ RCP Item 601 Rock Channel Protection, Type B, without Filter Forward Abutment  $13' \times 65' \times 2.5' \div 27 = 78.2$  Cu. Yd.
- Total R.C.P. Type B w/o Filter = 196 Cu. Yd.





Seeding Width Sq Yd	Cut	Fill	Exc.	Emb.	End Area Cu. Yd.	
					Cut	Fill
18	108	0			95	0
22						
13	285	26			157	21
69						
37	54	20			33	1/2
92						
29	17	5			15	4
71						
22	16	4			10	7
54						
17	6	11			3	5
29						
4	0	0			0	0



QUANTITIES			
Calc. Date	Chkd. Date		
ALF 4/2/85	JNM 4/4/85		

**713+50 BEGIN EARTHWORK AND SEEDING**  
**713+50 BEGIN ROCK CHANNEL PROTECTION**

STA. 713+50 TO STA. 714+88





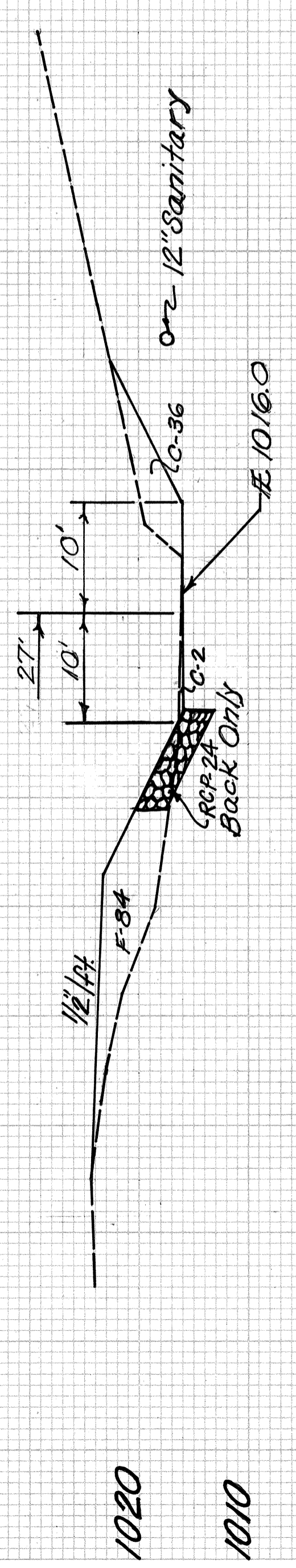


Rock Channel Protection Area (Cu. Yd.)	Seeding Width (Cu. Yd.)	End Area (Cu. Yd.)	Exc. Emb.
24	4	0	0
48	11	23	
24	54	38	84
10	41	12	23
30	20	28	42
11	20	8	8
28	16	16	0
9	18	9	0
18	16	32	0
6	18	10	0
16	10	21	0
5	11	4	0
10	4	0	0
10	4	0	0
4	0	0	0

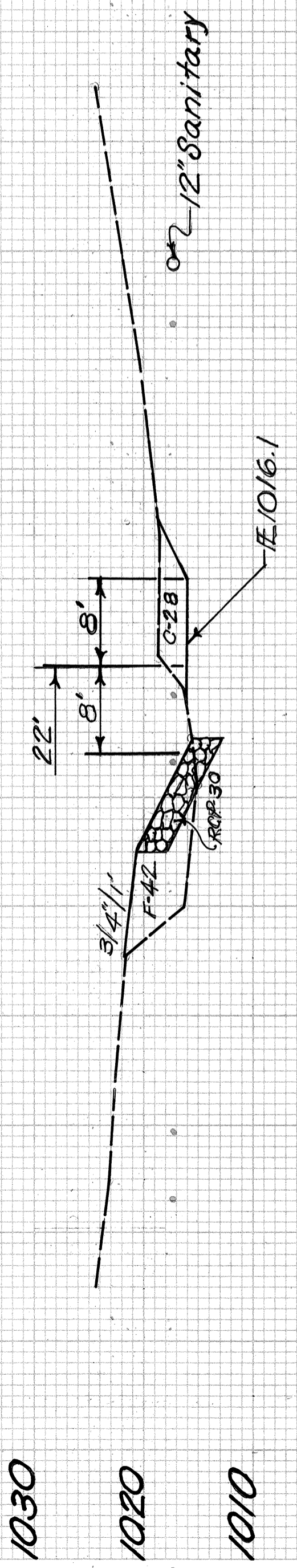
**QUANTITIES**  
 Calc. Date: ALF 4/9/85  
 Chkd. Date: JNM 4/12/85

**1+80 END EARTHWORK AND SEEDING**

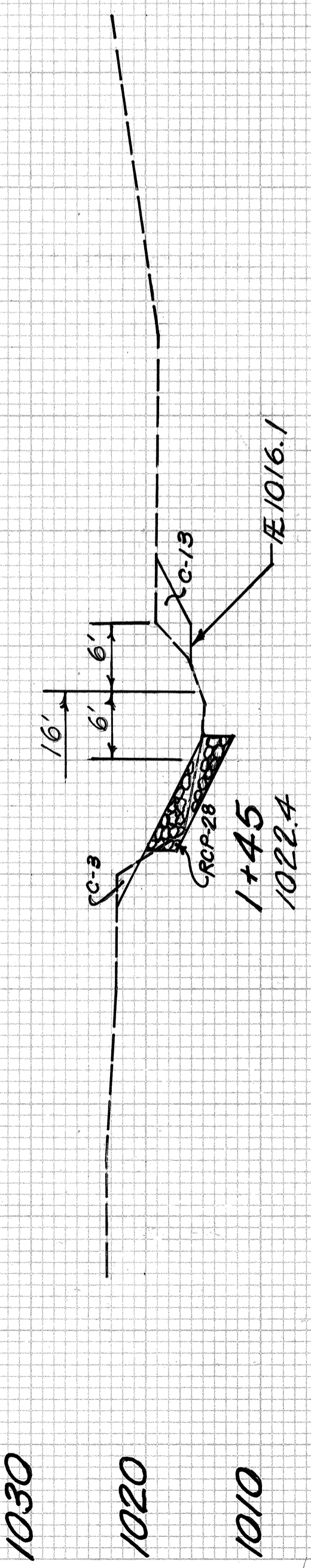
**1+70 END ROCK CHANNEL PROTECTION**



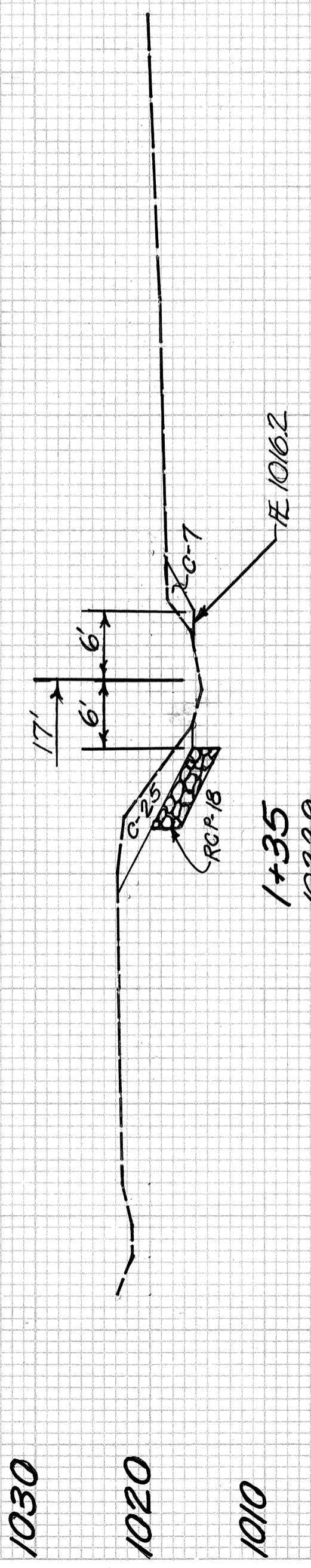
1+65  
1018.6



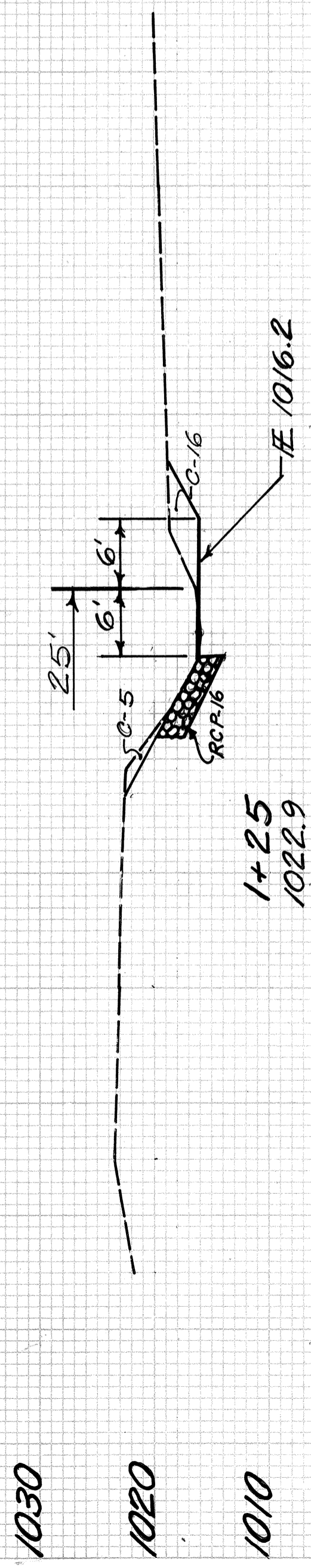
1+55  
1016.2



1+35  
1022.9



1+25  
1022.9



1+15 BEGIN EARTHWORK AND SEEDING  
1022.8  
1+05 BEGIN ROCK CHANNEL PROTECTION

1+05  
1022.8







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OCT 27 1987

REGION	STATE	PROJECT	
5	OHIO		

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CAR-9-13.54  
CARROLL COUNTY

**GENERAL NOTES**

**DESIGN DATA:** DESIGN LOADING - CASE II; HS20-44 AND THE ALTERNATE MILITARY LOADING.

**REINFORCING STEEL:** ASTM A615, A616 OR A617 GRADE 60 MINIMUM YIELD STRENGTH 60,000 P.S.I. FOR SUBSTRUCTURE.

**REINFORCING STEEL SPLICES:** ALL REINFORCING STEEL SPLICES SHALL BE IN ACCORDANCE WITH ITEM 509.08 (ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS, 1985) UNLESS OTHERWISE SHOWN.

**CONCRETE CLASS C:** COMPRESSIVE STRENGTH 4,000 P.S.I. FOR SUBSTRUCTURE.

**CONCRETE CLASS S:** COMPRESSIVE STRENGTH 4,500 P.S.I. FOR SUPERSTRUCTURE.

**STRUCTURAL STEEL:** ASTM A-588 - YIELD STRENGTH 50,000 P.S.I. - STEEL IS TO BE LEFT UNPAINTED. SEE CMS 513.221 FOR CLEANING REQUIREMENTS.

**DESIGN SPECIFICATIONS:** THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS, 1983, INCLUDING THE 1984 INTERIM SPECIFICATIONS, AND THE OHIO SUPPLEMENT TO THESE SPECIFICATIONS.

**REFERENCE SHALL BE MADE TO STANDARD DRAWING:**

AS-1-81	SHEET 1, 2 AND 3	DATED 11-27-81
DBR-2-73		DATED 4-10-73
GR-3		DATED 2-05-82
A-1-69	SHEET 3	DATED 6-12-69

**AND TO SUPPLEMENT SPECIFICATIONS:**

824		DATED 10-08-82
836		DATED 3-12-75

**DECK PROTECTION METHOD:** EPOXY COATING ON TOP AND BOTTOM REINFORCING STEEL AND LIQUID SEALANT FOR DECK PROTECTION.

**PILES:** THE DESIGN LOADING FOR EACH PILE IS 57 TONS PER PILE FOR THE ABUTMENTS. PILES SHALL BE DRIVEN TO REFUSAL ON BEDROCK. REFUSAL SHALL BE CONSIDERED AS OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES WITH A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR REFUSAL SHALL BE CONSIDERED AS OBTAINED AFTER THE PILE HAS CONTACTED HARD BEDROCK AND THE PILE HAS THEN RECEIVED AT LEAST 20 BLOWS.

THE PILE HAMMER USED TO INSTALL THE STEEL "H" BEARING PILES SHALL HAVE A STATE'S ENERGY RATING OF NOT LESS THAN 14,000 FOOT-POUNDS. THIS REQUIREMENT DOES NOT RELIEVE THE CONTRACTOR FROM 108.05 WHICH STATES THAT THE CONTRACTOR IS TO PROVIDE SUFFICIENT EQUIPMENT FOR PROSECUTING THE REQUIRED WORK. REFER TO "ODOT'S MANUAL OF PROCEDURES FOR STRUCTURES" TO OBTAIN THE STATE'S ENERGY RATING."

**UTILITY LINES:** ALL EXPENSE INVOLVED IN RELOCATING (INSTALLING), THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER(S). THE CONTRACTOR AND OWNER(S) ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

**WELDED ATTACHMENTS OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE** MAY BE MADE TO THE FASCIA STRINGER TOP FLANGE, WHICH IS IN "COMPRESSION". FILLET WELTS TO COMPRESSION FLANGES SHALL BE NOT CLOSER THAN 1" FROM EDGE OF FLANGE, BE NOT MORE THAN 2" LONG, AND BE NOT SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.

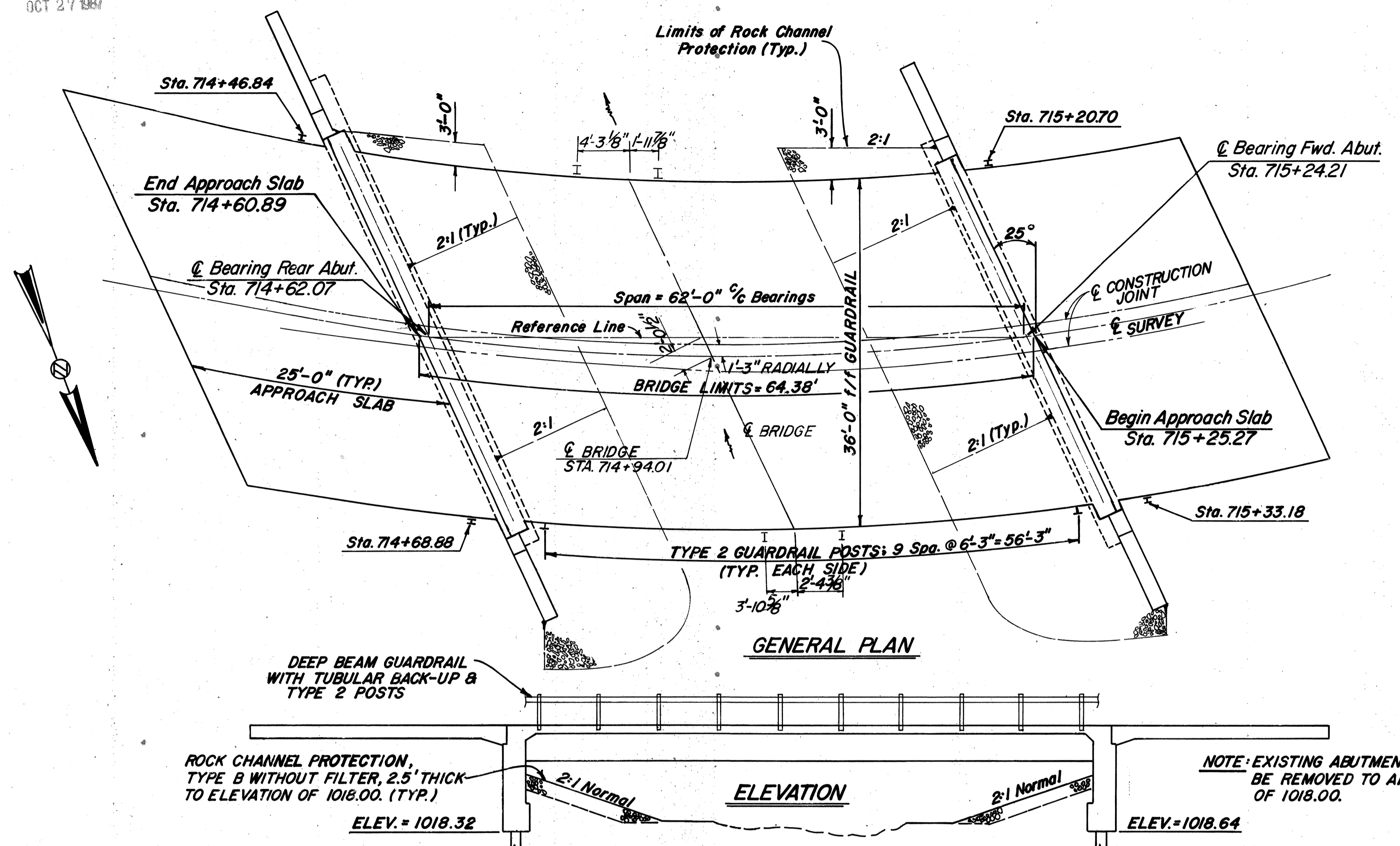
**MONOLITHIC WEARING SURFACE** IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

**MAINTAINING TRAFFIC:** A MINIMUM OF 1 (ONE) TRAFFIC LANE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

**REMOVAL OF EXISTING STRUCTURE (CONCRETE BEAM):** SEE SHEET 9 OF 11 FOR CONSTRUCTION PHASES ONE AND TWO.

**REMOVAL OF EXISTING STRUCTURE:** WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING SUBSTRUCTURE SHALL BE REMOVED TO AN ELEVATION OF 1018.00 ±, AS PER PLAN.

**EXISTING 12" V.S.P. SANITARY SEWER LINE,** AT THE FACE OF THE EXISTING FORWARD ABUTMENT, SHALL NOT BE DISTURBED.



ESTIMATED QUANTITIES						
ITEM	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUT.	GENERAL
202	LUMP	SUM	STRUCTURE REMOVED, AS PER PLAN			LUMP
503	LUMP	SUM	COFFERDAMS, CRIBS & SHEETING			LUMP
503	LUMP	SUM	UNCLASSIFIED EXCAVATION		LUMP	
505	LUMP	SUM	PILE DRIVING EQUIPMENT MOBILIZATION		LUMP	
507	228	L. FT.	STEEL PILES, HP 12 x 53, AS PER PLAN		228	
509	8,942	LB.	REINFORCING STEEL, GRADE 60		8,942	
511	34	CU.YD.	CLASS "C" CONCRETE, FOOTING		34	
511	58	CU.YD.	CLASS "C" CONCRETE, ABUTMENT ABOVE FOOTINGS		58	
511	94	CU.YD.	CLASS "S" CONCRETE, SUPERSTRUCTURE	94		
512	16	SQ.YD.	TYPE "A" WATERPROOFING		16	
512	8	SQ.YD.	TYPE "B" WATERPROOFING		8	
513	57,414	LB.	STRUCTURAL STEEL, ASTM A588 (AISC CATEGORY I)	57,414		
513	738	EA.	WELDED STUD SHEAR CONNECTORS (7/8" x 4")	738		
516	82	SQ.FT.	1/4" PREFORMED EXPANSION JOINT FILLER		82	
516	80	SQ.FT.	1" PREFORMED EXPANSION JOINT FILLER		80	
516	100	L. FT.	6" PVC WATERSTOP AS PER PLAN		100	
517	137.50	L. FT.	RAILING (DEEP BEAM RAIL W/STEEL TUBULAR BACK-UP, STEEL POSTS AND ACCESSORIES)	137.50		
518	60	L. FT.	6" NON-PERFORATED HELICAL CMP (707.01) INCLUDING SPECIALS		60	
518	132	L. FT.	6" PERFORATED HELICAL CMP (707.01)		132	
518	59	CU.YD.	POROUS BACKFILL		59	
824	18,239	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60	17,962		
SPECIAL	48	SQ.YD.	SEALING OF CONCRETE SURFACES	48		

CALC'D BY: A.J.B. CHK'D BY: Q.E.F.  
DATE: 6-84 DATE: 6-84

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**THOMAS FOK & ASSOCIATES, LIMITED**  
CONSULTING ENGINEER, SURVEYOR & PLANNER  
3896 MAHONING AVE. YOUNGSTOWN, OHIO

**GENERAL PLAN & QUANTITIES**  
BR. No. CAR-9-13.54  
OVER  
TOWN CREEK  
CARROLL COUNTY

S.R. 9

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB	AJB	QEF	T.F.	
	June 84	June 84	June 84	June 84	

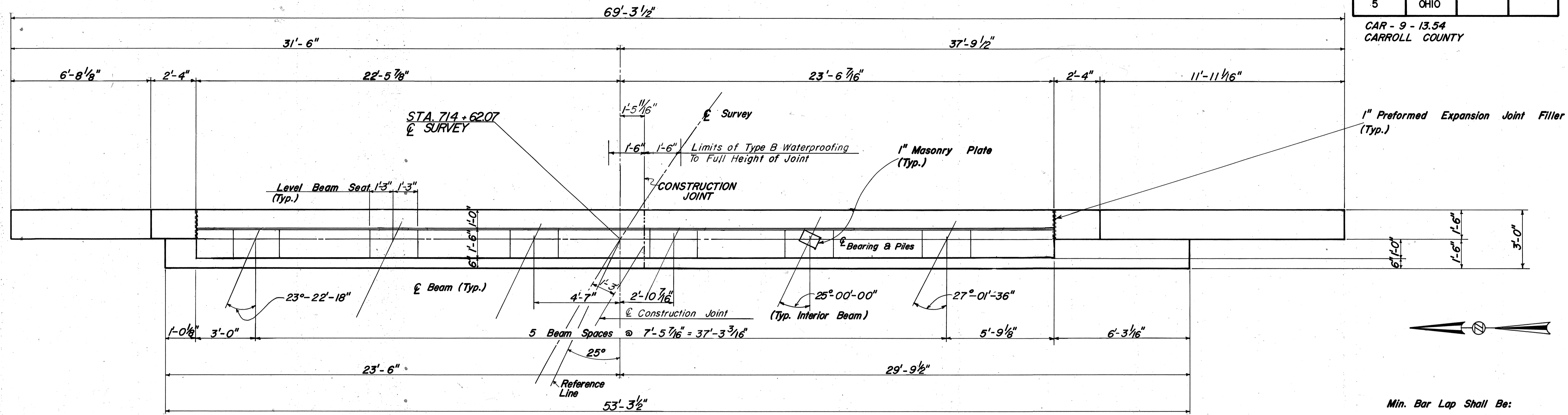


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OCT 27 1987

REGION	STATE	PROJECT
5	OHIO	

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CAR - 9 - 13.54  
CARROLL COUNTY

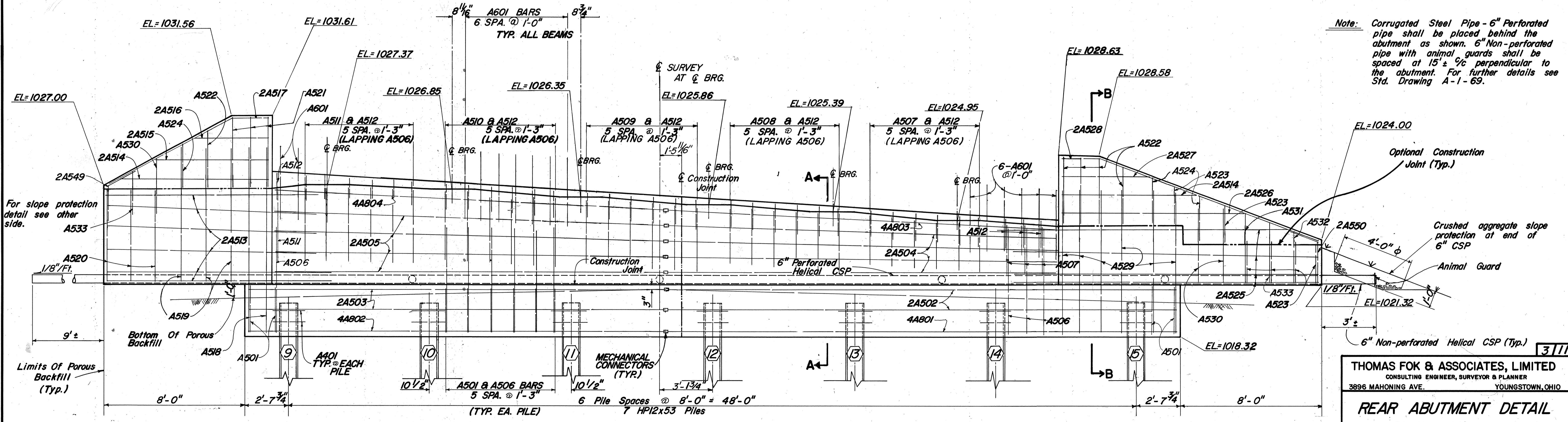


PLAN

For additional details see sheet **5111**

- Min. Bar Lap Shall Be:
- No. 5 Bar - 2'-5"
  - No. 6 Bar - 2'-10"
  - No. 8 Bar - 4'-9"

Note: Corrugated Steel Pipe - 6" Perforated pipe shall be placed behind the abutment as shown. 6" Non-perforated pipe with animal guards shall be spaced at 15' ± 9/16" perpendicular to the abutment. For further details see Sid. Drawing A-1 - 69.



ELEVATION  
(Along  $\bar{C}$  Bearing)

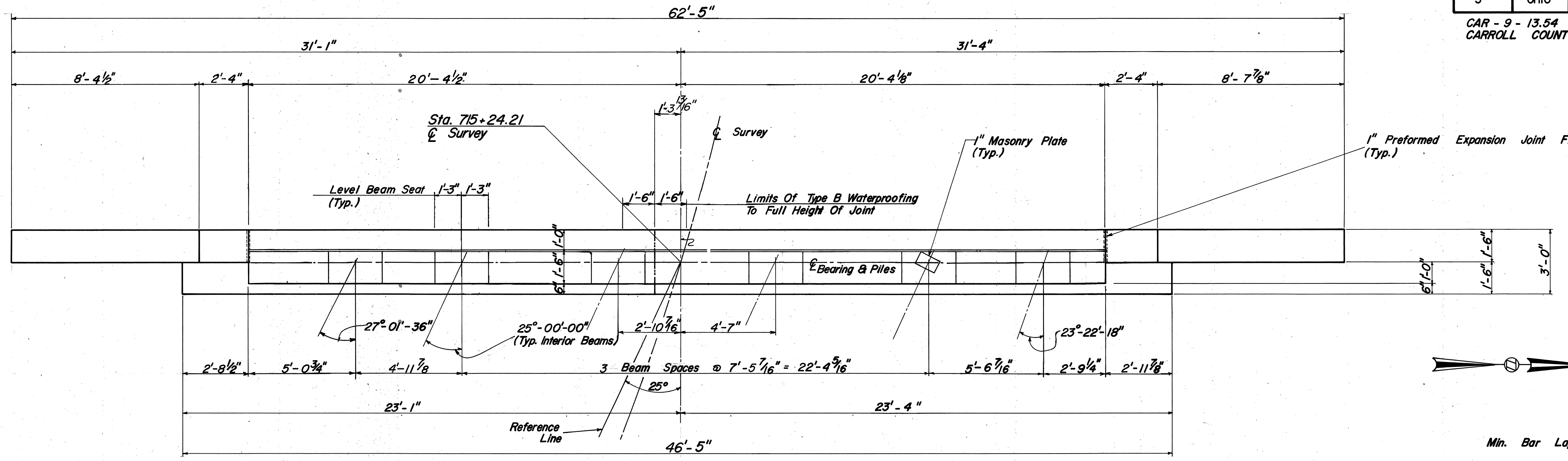
Note: The mechanical connection used to splice reinforcement at stage construction shall develop at least 125 percent of the specified yield strength of bar as per 1.5.22 AASHTO.

THOMAS FOK & ASSOCIATES, LIMITED  
CONSULTING ENGINEER, SURVEYOR & PLANNER  
3896 MAHONING AVE. YOUNGSTOWN, OHIO

**REAR ABUTMENT DETAIL**  
BR. No. CAR-9-1354  
OVER  
TOWN CREEK CARROLL COUNTY

S.R. 9

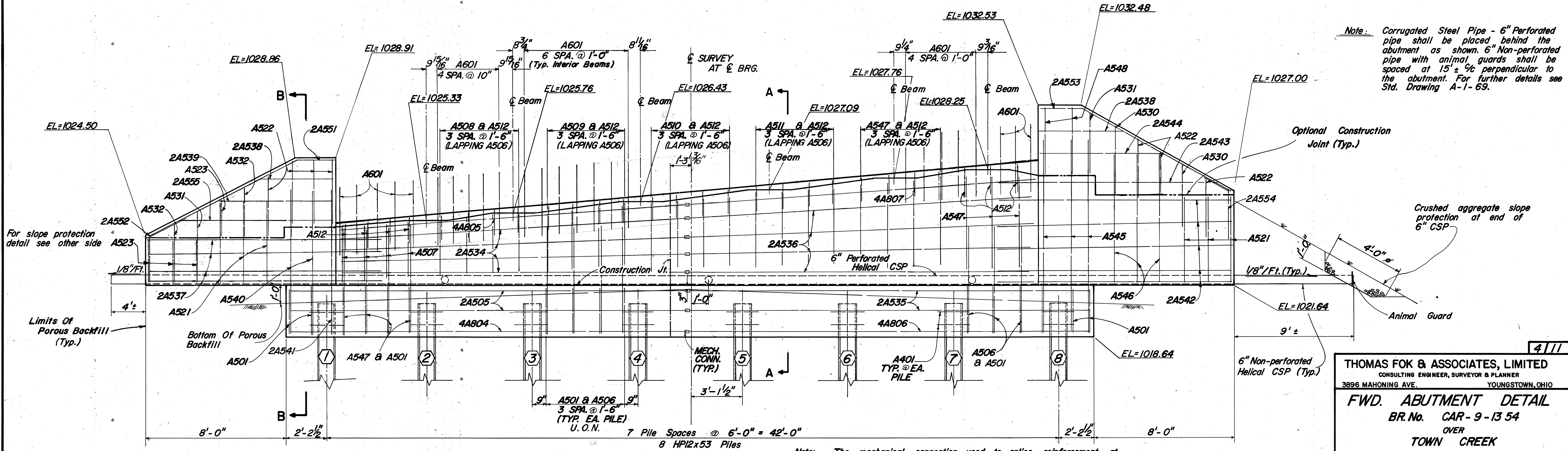
SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB May 84	MDP May 84	MDP June 84	T.F. June 84	



PLAN

For additional details see sheet 5111

Min. Bar Laps Shall Be:  
 No. 5 - 2'-5"  
 No. 6 - 2'-10"  
 No. 8 - 4'-9"



ELEVATION

Note: The mechanical connection used to splice reinforcement at stage construction shall develop at least 125 percent of the specified yield strength of bar as per 1.5.22 AASHTO.

Note: Corrugated Steel Pipe - 6" Perforated pipe shall be placed behind the abutment as shown. 6" Non-perforated pipe with animal guards shall be spaced at 15 ± % perpendicular to the abutment. For further details see Std. Drawing A-1-69.

4111

THOMAS FOK & ASSOCIATES, LIMITED  
 CONSULTING ENGINEER, SURVEYOR & PLANNER  
 3895 MAHONING AVE. YOUNGSTOWN, OHIO

FWD. ABUTMENT DETAIL  
 BR. No. CAR - 9 - 13 54  
 OVER  
 TOWN CREEK  
 CARROLL COUNTY

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB	MDP	MDP	J.F.	
	May 84	May 84	June 84	June 84	



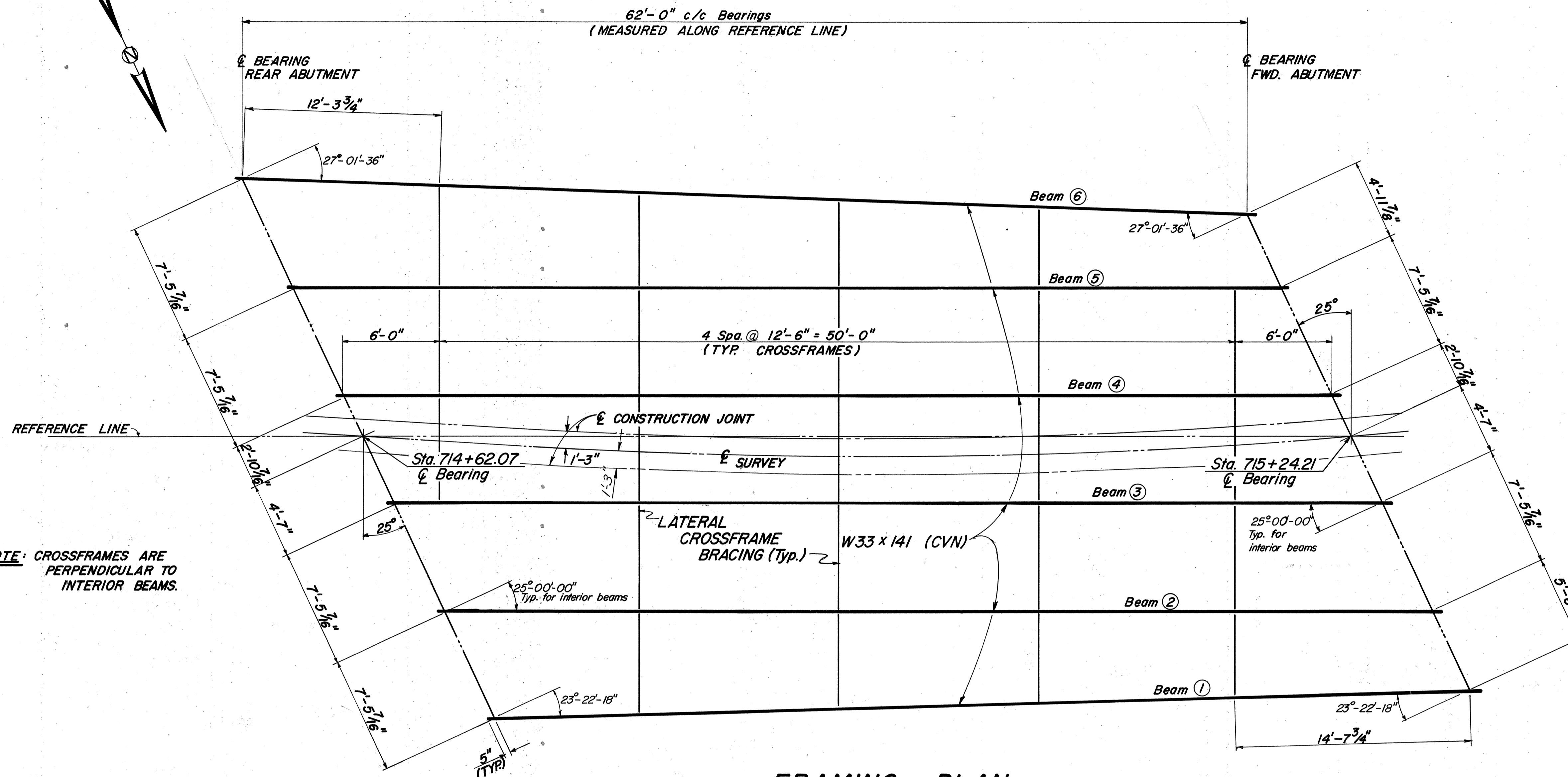




CAR-9-13.54  
CARROLL COUNTY

BEAM LENGTHS	
LOCATION	REAR ABUT. to FWD. ABUT.
BEAM ①	61'-2 1/2"
BEAM ②	62'-0"
BEAM ③	62'-0"
BEAM ④	62'-0"
BEAM ⑤	62'-0"
BEAM ⑥	63'-0 7/8"

NOTE: Beam lengths are measured along longitudinal  $\bar{c}$  axis of beam and are  $\bar{c}$  to  $\bar{c}$  of bearing.



NOTE: CROSSFRAMES ARE PERPENDICULAR TO INTERIOR BEAMS.

**FRAMING PLAN**

FOR ADDITIONAL DETAILS, SEE SHEET 7/11

6/11  
THOMAS FOK & ASSOCIATES, LIMITED  
CONSULTING ENGINEER, SURVEYOR & PLANNER  
3896 MAHONING AVE. YOUNGSTOWN, OHIO

**FRAMING PLAN**  
BRIDGE No. CAR-9-13.54  
OVER  
TOWN CREEK

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	ADB MAY 84				



**CAMBER & DEFLECTION TABLES**

REGION	STATE	PROJECT
5	OHIO	

CAR-9-13.54  
CARROLL COUNTY

BEAM ②			
Location	A	B	C
DEFLECTION DUE TO WEIGHT OF STEEL	1/8"	3/16"	1/8"
DEFLECTION DUE TO REMAINING DEAD LOAD	13/16"	1/8"	13/16"
REQUIRED HORIZONTAL & VERTICAL CURVE ADJUST.	-4 1/16"	-5 1/2"	-4 1/16"
REQUIRED SHOP CAMBER	-3 7/8"	-4 3/16"	-3 1/8"

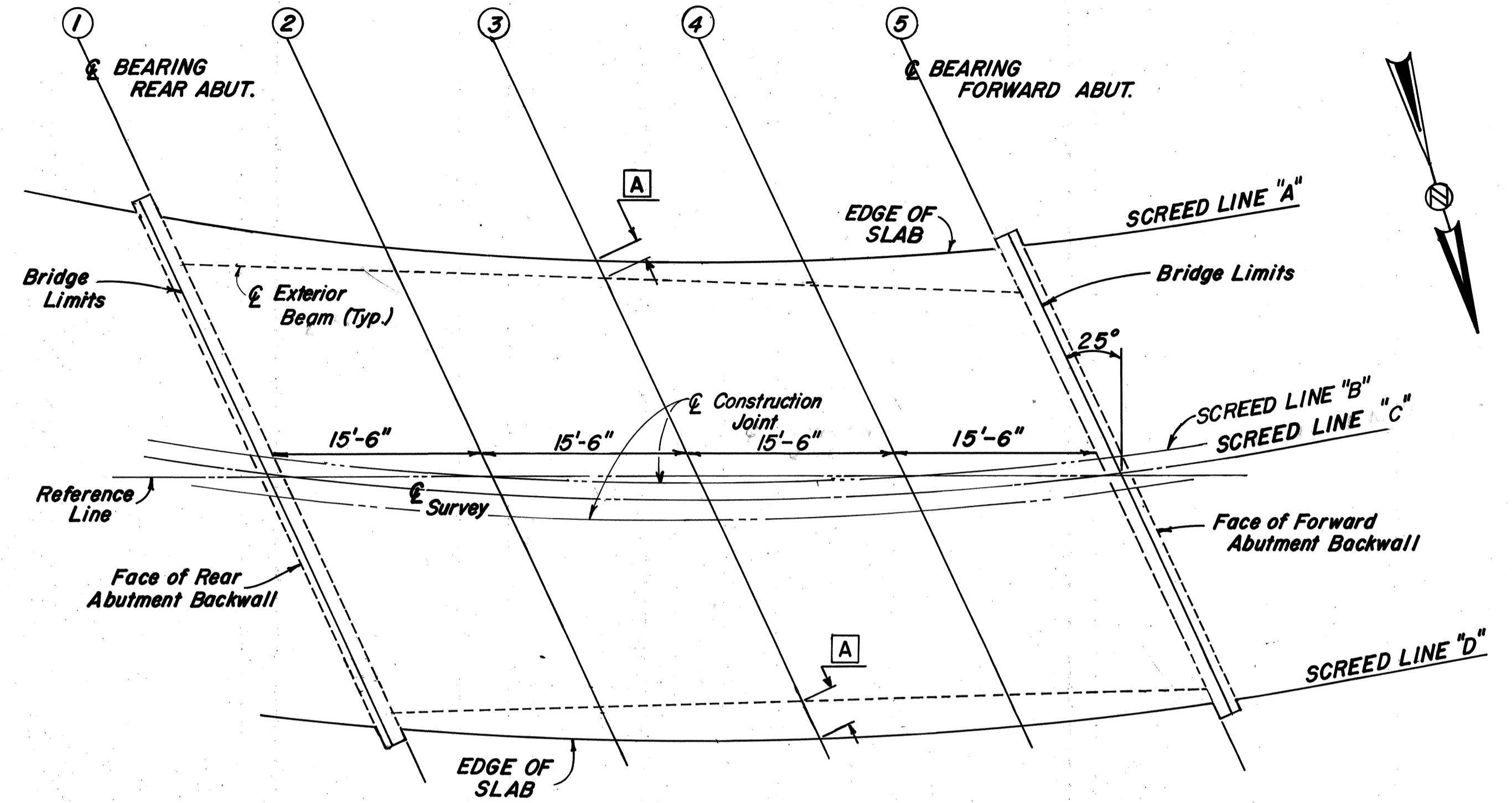
BEAM ①			
Location	A	B	C
DEFLECTION DUE TO WEIGHT OF STEEL	1/8"	3/16"	1/8"
DEFLECTION DUE TO REMAINING DEAD LOAD	13/16"	1/16"	13/16"
REQUIRED HORIZONTAL & VERTICAL CURVE ADJUST.	-3 13/16"	-5 3/16"	-3 13/16"
REQUIRED SHOP CAMBER	-2 7/8"	-3 13/16"	-2 7/8"

BEAM ③			
Location	A	B	C
DEFLECTION DUE TO WEIGHT OF STEEL	1/8"	3/16"	1/8"
DEFLECTION DUE TO REMAINING DEAD LOAD	7/8"	1 3/16"	7/8"
REQUIRED HORIZONTAL & VERTICAL CURVE ADJUST.	-4 1/16"	-5 5/8"	-4 1/16"
REQUIRED SHOP CAMBER	-3 5/16"	-4 1/4"	-3 5/16"

BEAM ⑥			
Location	A	B	C
DEFLECTION DUE TO WEIGHT OF STEEL	3/16"	1/4"	3/16"
DEFLECTION DUE TO REMAINING DEAD LOAD	1"	1 3/8"	1"
REQUIRED HORIZONTAL & VERTICAL CURVE ADJUST.	-5 1/16"	-6 3/4"	-5 1/16"
REQUIRED SHOP CAMBER	-3 7/8"	-5 1/8"	-3 7/8"

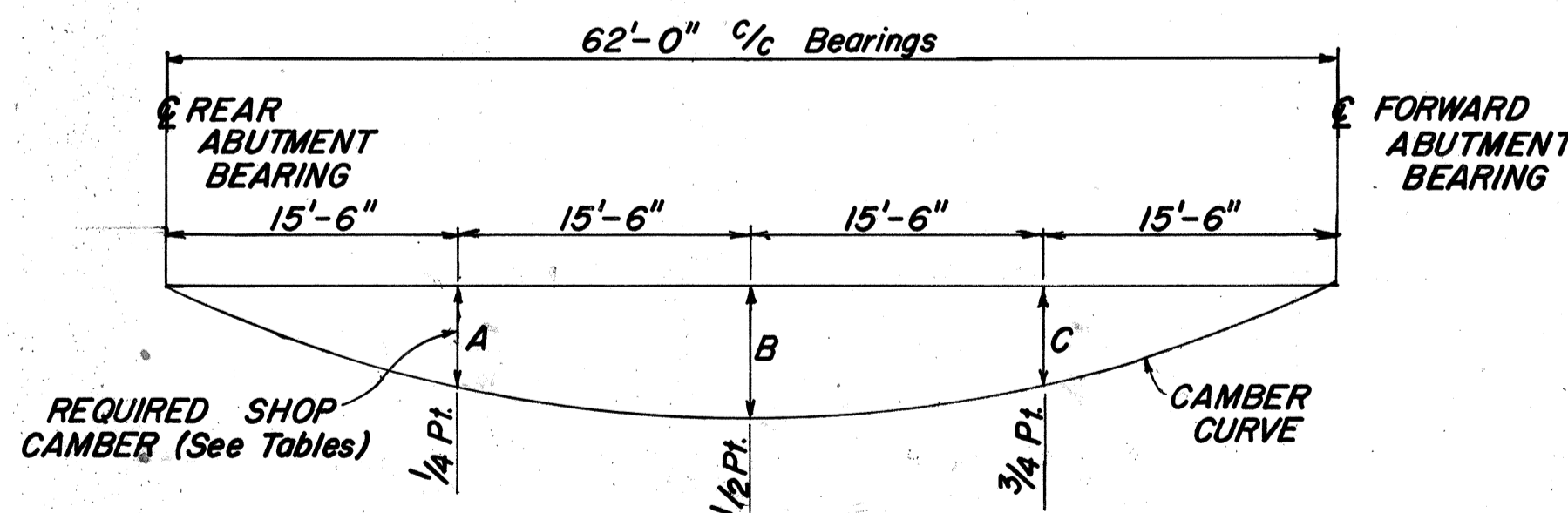
BEAM ④			
Location	A	B	C
DEFLECTION DUE TO WEIGHT OF STEEL	1/8"	3/16"	1/8"
DEFLECTION DUE TO REMAINING DEAD LOAD	7/8"	1 3/16"	7/8"
REQUIRED HORIZONTAL & VERTICAL CURVE ADJUST.	-4 1/16"	-6"	-4 1/16"
REQUIRED SHOP CAMBER	-3 7/16"	-4 5/8"	-3 7/16"

BEAM ⑤			
Location	A	B	C
DEFLECTION DUE TO WEIGHT OF STEEL	1/8"	3/16"	1/8"
DEFLECTION DUE TO REMAINING DEAD LOAD	3/4"	1 1/16"	3/4"
REQUIRED HORIZONTAL & VERTICAL CURVE ADJUST.	-4 9/16"	-6 1/4"	-4 9/16"
REQUIRED SHOP CAMBER	-3 11/16"	-5"	-3 11/16"



SCREED ELEVATIONS				
	"A"	"B"	"C"	"D"
①	1028.76	1029.98	1030.08	1031.50
②	1028.60	1029.95	1030.06	1031.58
③	1028.61	1030.06	1030.17	1031.78
④	1028.76	1030.28	1030.39	1032.05
⑤	1029.03	1030.60	1030.72	1032.40

A = OFFSET FROM EDGE OF SLAB TO C OF EXTERIOR BEAM		
	NORTH EDGE	SOUTH EDGE
①	1'-5 1/4"	3'-8 5/8"
②	2'-9 3/16"	1'-11 1/16"
③	3'-2 1/2"	1'-4 7/8"
④	2'-8 1/4"	2'-0 3/8"
⑤	1'-3 3/4"	3'-8 7/16"



**CAMBER DIAGRAM**

**SLAB PLAN & SCREED ELEVATIONS**  
OFFSETS FROM EDGE OF SLAB TO C OF EXTERIOR BEAM

NOTE: ELEVATIONS SHOWN AT EDGE OF SLAB ARE SCREED ELEVATIONS AND ARE ELEVATIONS BEFORE CONCRETE IS Poured.

For Additional Details,  
See Sheet 6/11

THOMAS FOK & ASSOCIATES, LIMITED  
CONSULTING ENGINEER, SURVEYOR & PLANNER  
3896 MAHONING AVE. YOUNGSTOWN, OHIO

**CAMBER & SCREED PLAN**  
BR. No. CAR-9-13 54  
OVER  
TOWN CREEK  
S.R. 9 CARROLL COUNTY

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB	AJB	QEF	T.F.	
	June 84	June 84	June 84	June 84	

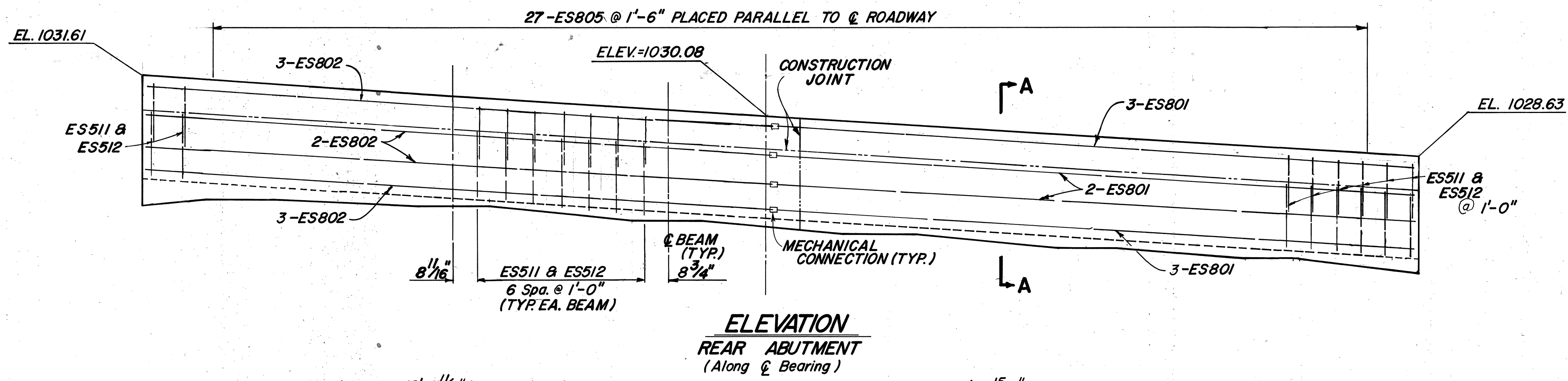
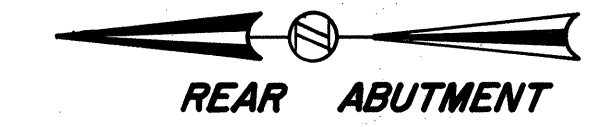
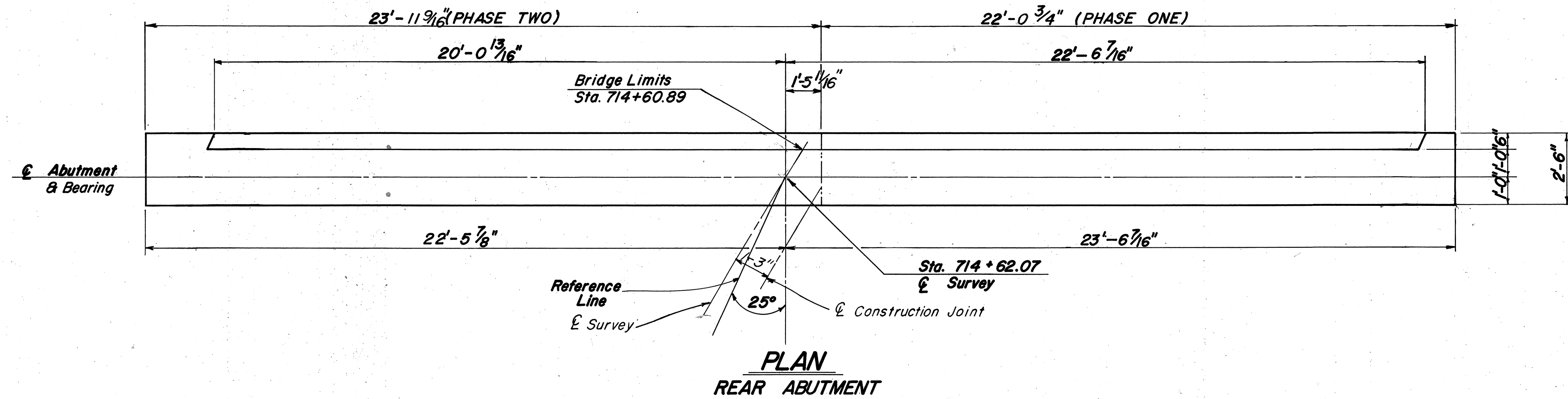


MICROFILMED  
OCT 27 1987

REGION	STATE	PROJECT
5	OHIO	

22  
27

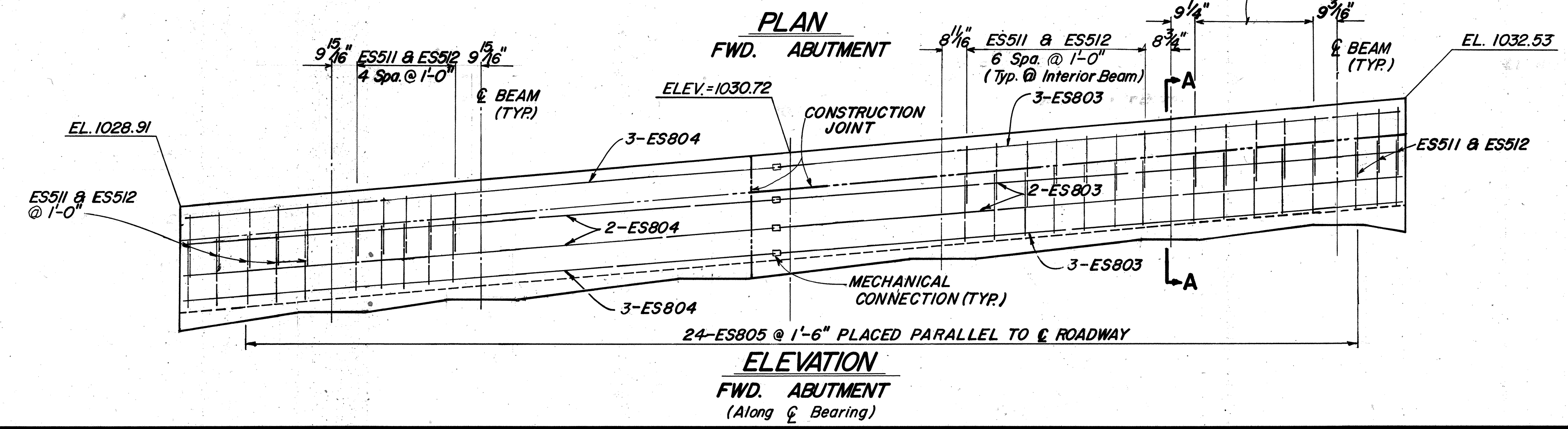
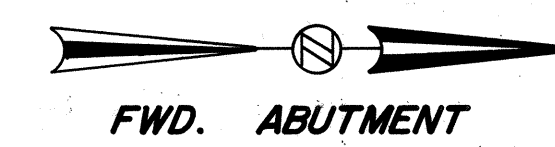
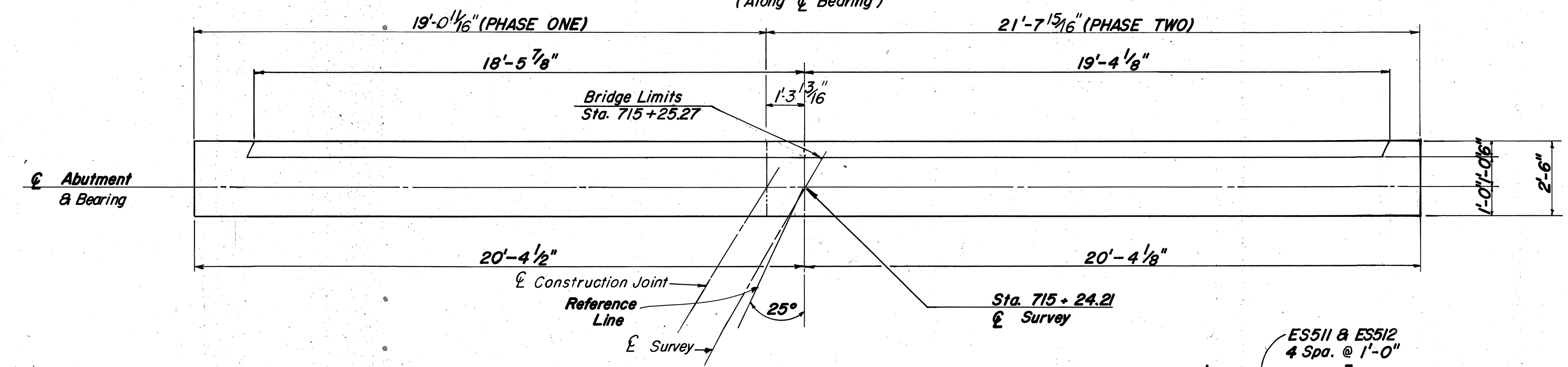
CAR - 9 - 13.54  
CARROLL COUNTY



NOTE: THE MECHANICAL CONNECTION USED TO SPLICE REINFORCEMENT AT STAGE CONSTRUCTION SHALL DEVELOP AT LEAST 125 PERCENT OF SPECIFIED YIELD STRENGTH OF BAR AS PER 1.5.22 AASHTO.

For Additional Details,  
See Sheet 511

& For Superelevation Rates,  
See Transverse Section Sheet 911



811

THOMAS FOK & ASSOCIATES, LIMITED  
CONSULTING ENGINEER, SURVEYOR & PLANNER  
3895 MAHONING AVE. YOUNGSTOWN, OHIO

**SUPERSTRUCTURE DETAILS**  
AT ABUTMENTS  
BR. No. CAR - 9 - 13 54  
OVER  
TOWN CREEK CARROLL COUNTY

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB	MDP	MDP	T.F.	
	May 84	May 84	May 84	June 84	



MICROFILMED  
OCT 27 1987

REGION	STATE	PROJECT
5	OHIO	

23  
27

CAR-9-13.54  
CARROLL COUNTY

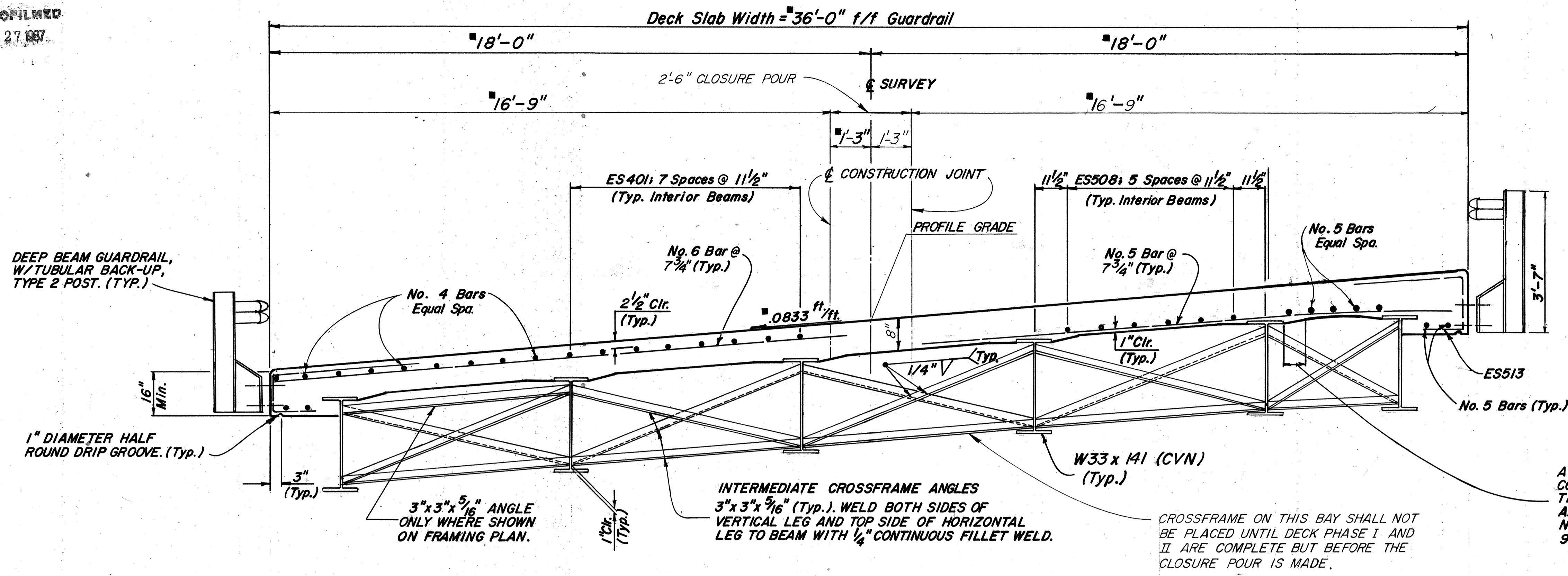
SLAB DETAIL NOTES

- THE DISTANCE SHOWN FROM THE TOP OF THE 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.
- FOR ADDITIONAL GUARDRAIL DETAILS SEE STANDARD DRAWING DBR-2-73.

A HAUNCH WIDTH OF 9" SHALL BE USED FOR COMPUTING QUANTITIES OF CONCRETE. HOWEVER THE HAUNCH WIDTH MAY VARY BETWEEN 6" AND 12" PROVIDED THAT THE SLOPE SHALL BE NOT MORE THAN 1:4 FOR A HAUNCH LESS THAN 9" WIDTH.

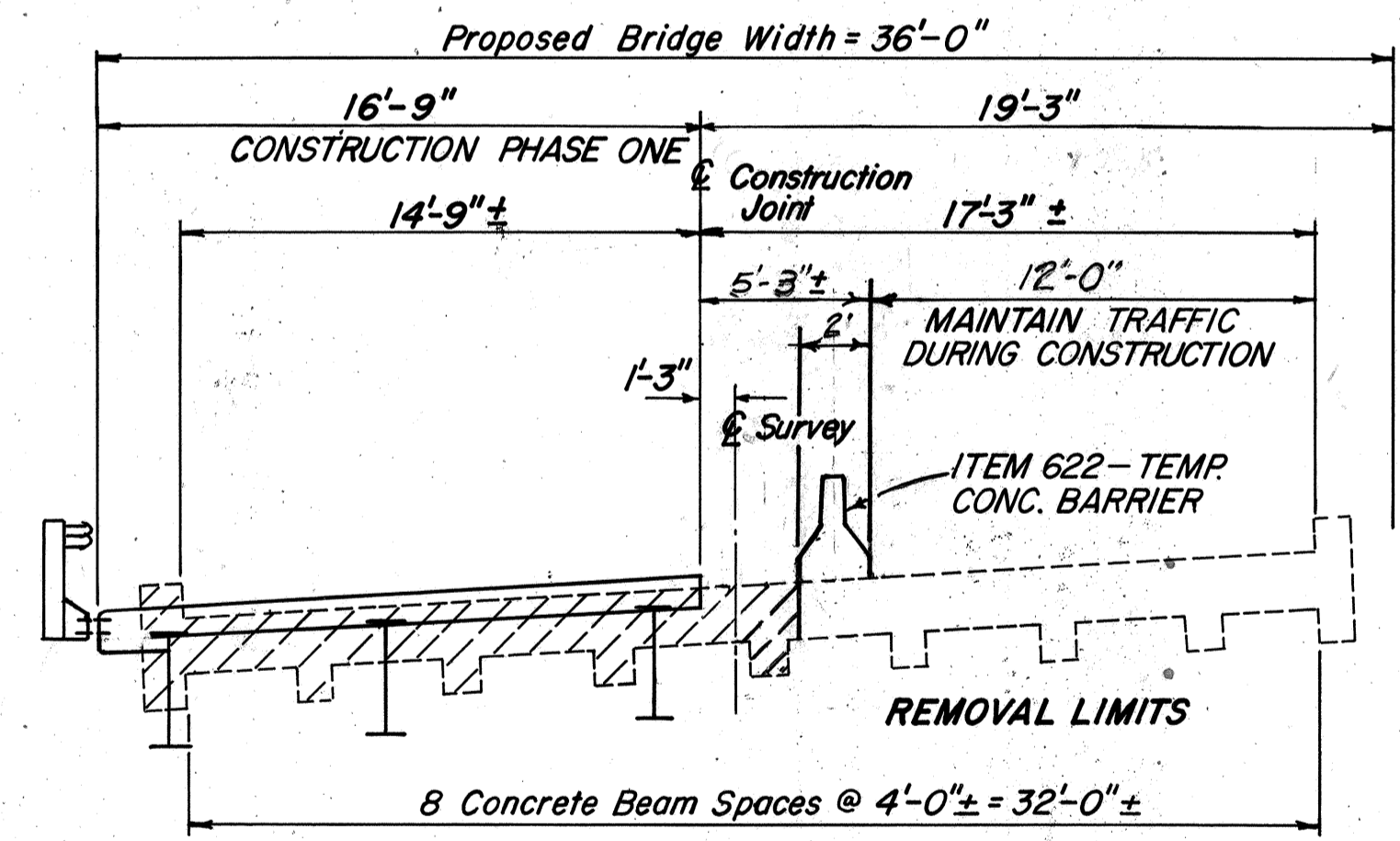
LEGEND

- = MEASURED ALONG THE RADIUS OF THE HORIZONTAL CURVE.

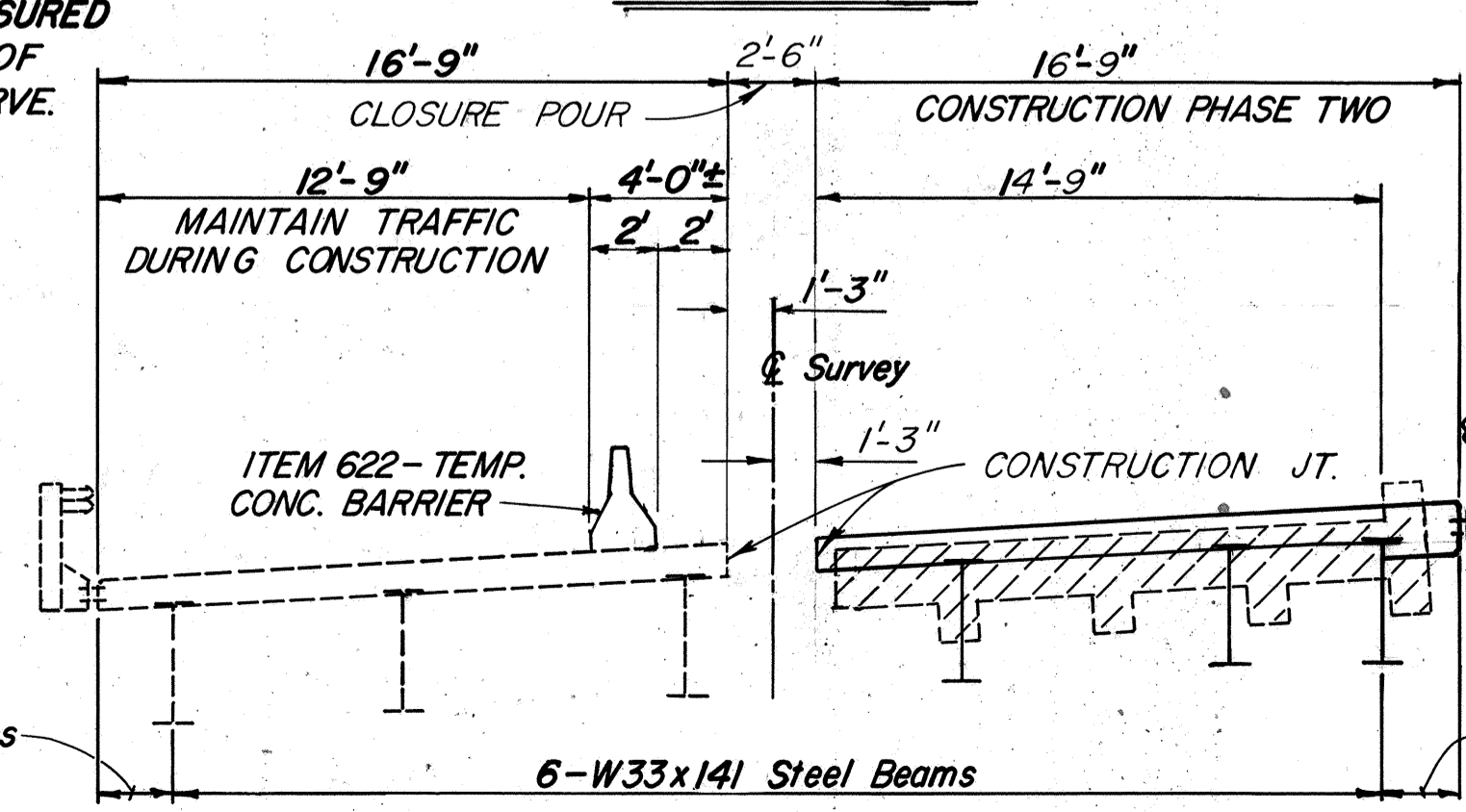


TRANSVERSE SECTION  
(Welded Stud Shear Connectors Not Shown)

For Additional Details,  
See Slab Reinforcing Steel  
Sheet 10111



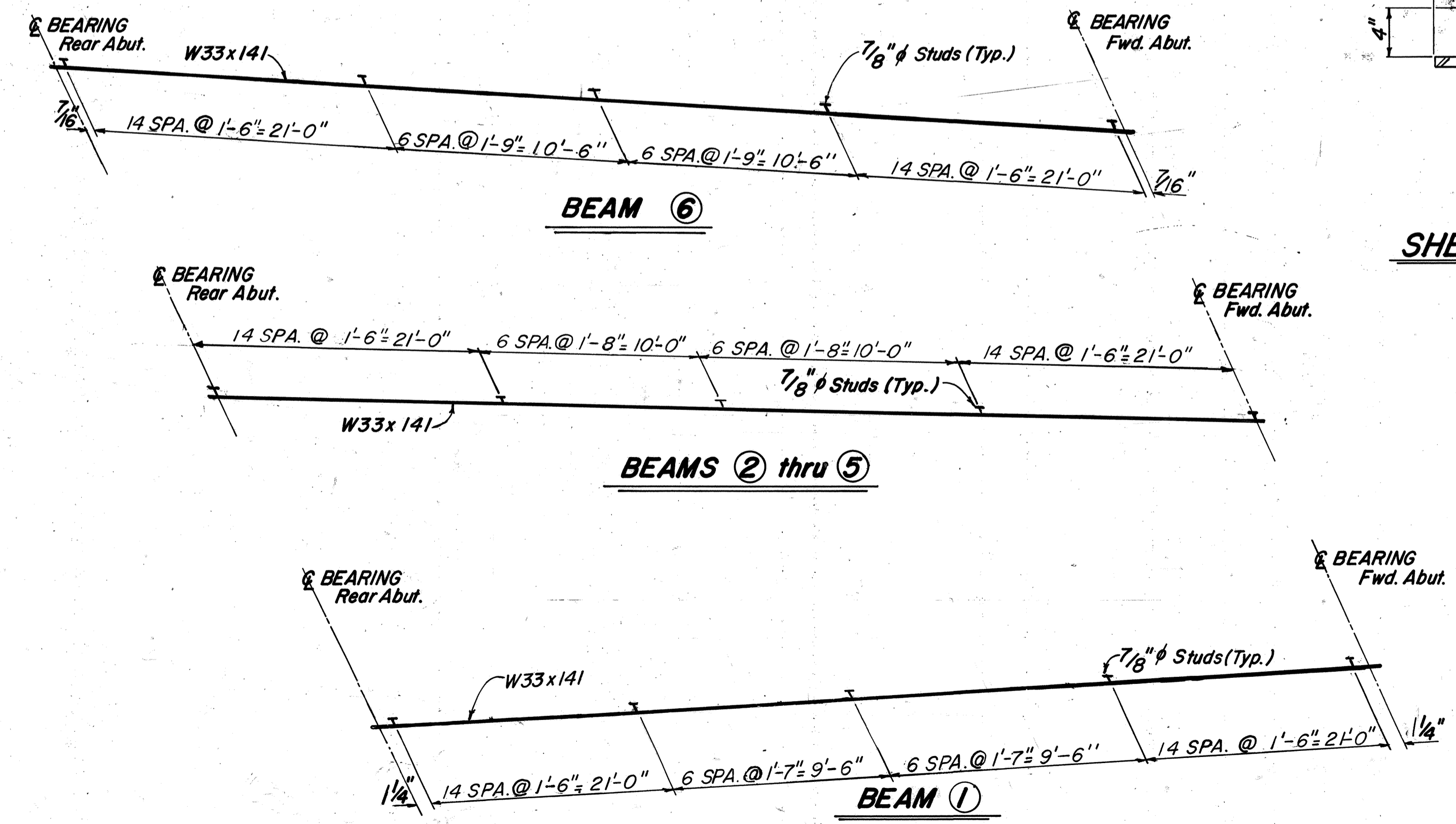
PHASE ONE



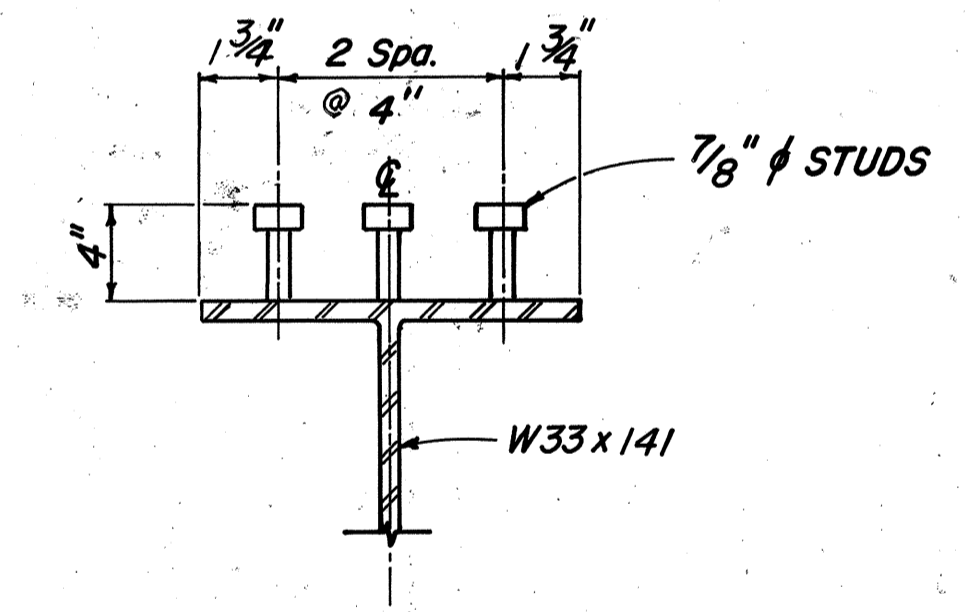
PHASE TWO

TWO-STAGE CONSTRUCTION

NOTE: ALL DIMENSIONS ON PHASE CONSTRUCTION DRAWING ARE MEASURED ALONG THE RADIUS OF THE HORIZONTAL CURVE.



SHEAR CONNECTOR PLAN



SHEAR CONNECTOR DETAIL

For Additional Details,  
See Framing Plan  
Sheet 6111

THOMAS FOK & ASSOCIATES, LIMITED  
CONSULTING ENGINEER, SURVEYOR & PLANNER  
3896 MAHONING AVE. YOUNGSTOWN, OHIO

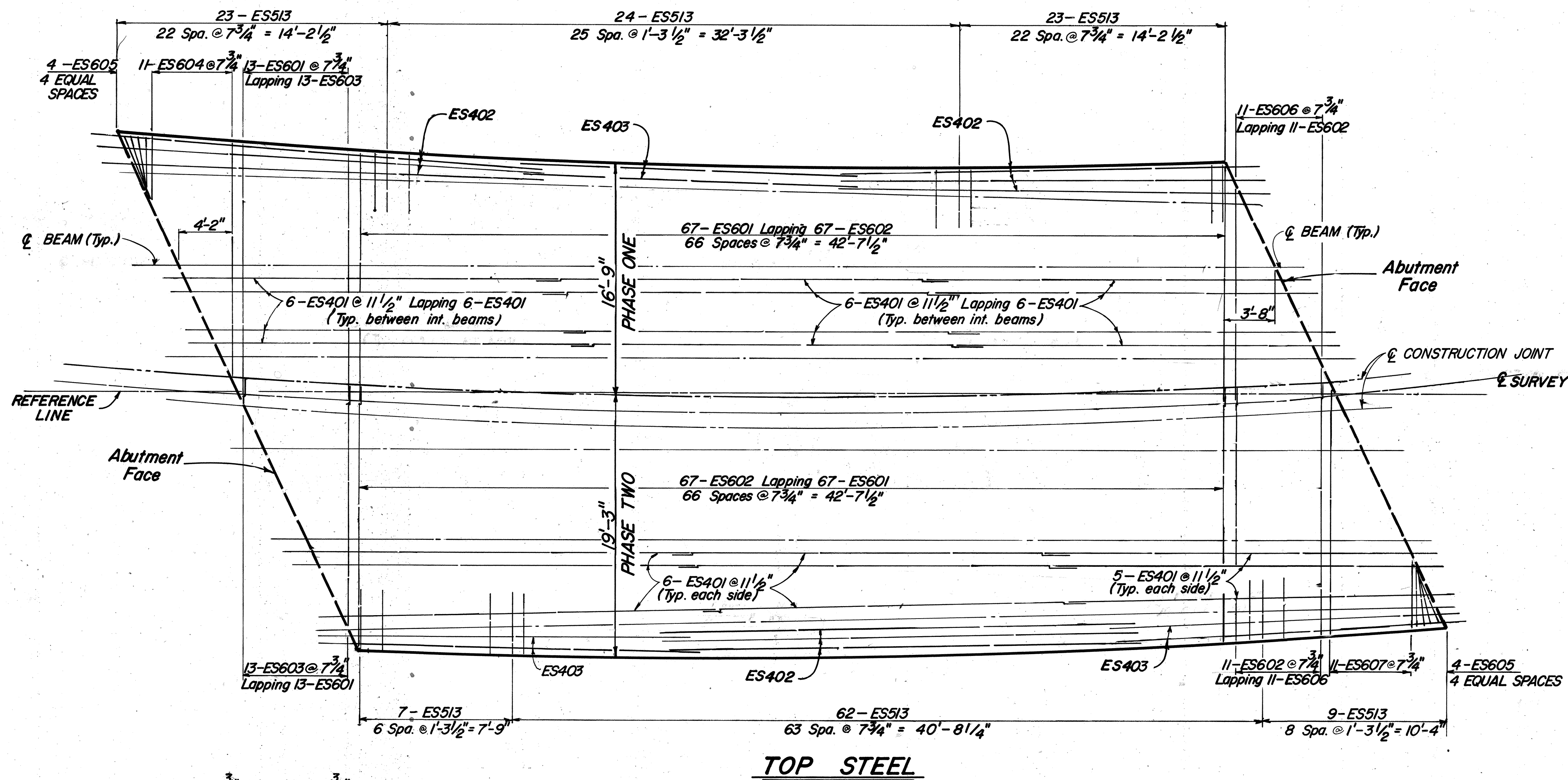
TRANSVERSE SECTION  
BR. No. CAR-9-13 54  
OVER  
TOWN CREEK  
CARROLL COUNTY

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB	AJB	QEF	T.F.	
	May 84	May 84	June 84	June 84	



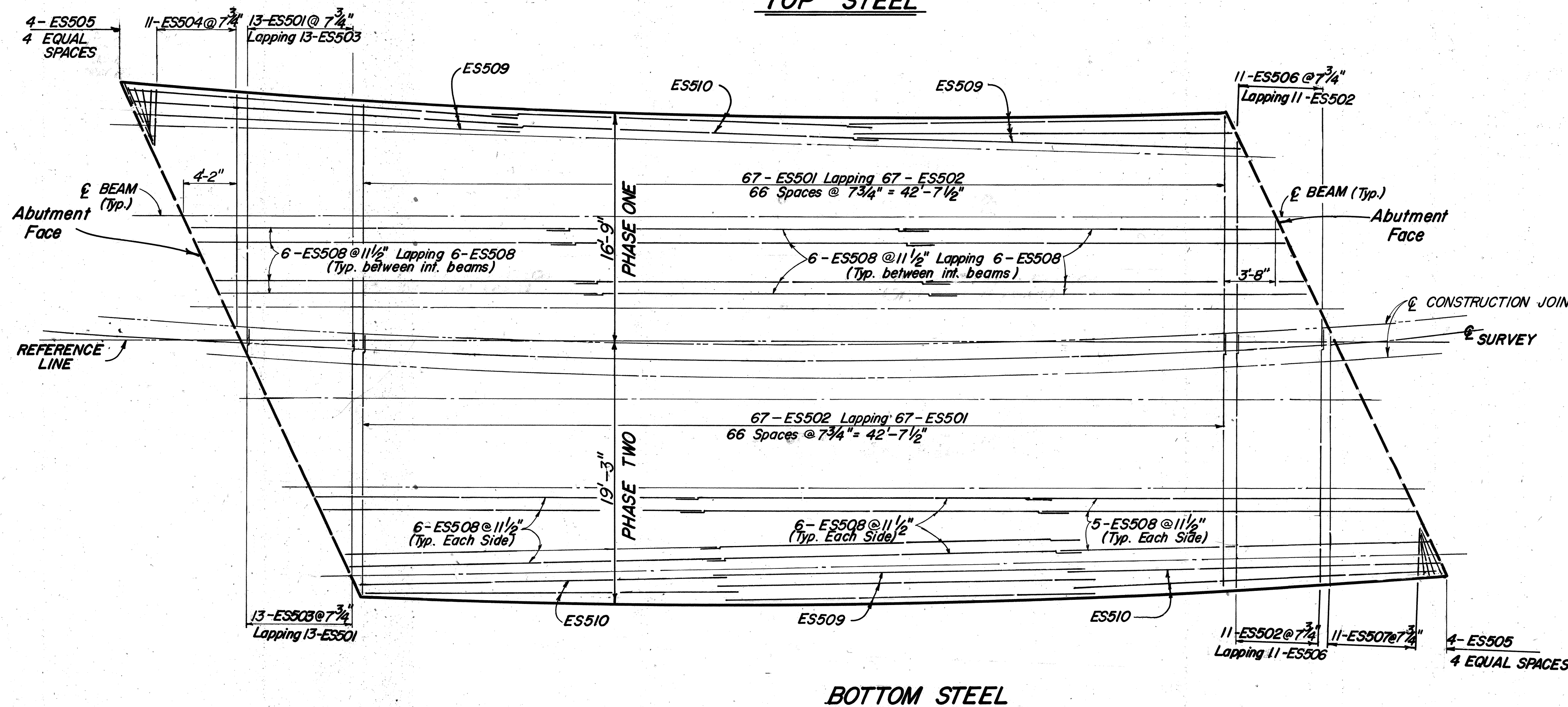
REGION	STATE	PROJECT
5	OHIO	

CAR-9-13.54  
CARROLL COUNTY



NOTE: ES401, 402, 403 AND S508, 509, 510 BARS FOLLOW TYPICAL SPACING BETWEEN BEAMS, BUT MAY BE ADJUSTED TO MAINTAIN A 2" CLEARANCE FROM SLAB EDGE.

NOTE: MIN. BAR LAPS SHALL BE:  
No. 4 Bar - 1'-3"  
No. 5 Bar - 1'-7"  
No. 6 Bar - 1'-11"



For Additional Details, See Transverse Section, Sheet 9/11 & Section Details, Sheet 5/11

THOMAS FOK & ASSOCIATES, LIMITED  
CONSULTING ENGINEER, SURVEYOR & PLANNER  
3896 MAHONING AVE. YOUNGSTOWN, OHIO

**SLAB REINFORCING STEEL**  
BR. No. CAR-9-13.54  
OVER  
TOWN CREEK  
CARROLL COUNTY

SURVEYED	DESIGNED	DRAWN	CHECKED	REVIEWED	REVISED
	AJB	AJB	MDP	T.F.	
	May 84	May 84	May 84	June 84	







TOTAL NUMBER OF  
 5 OWNERSHIPS  
 1 TOTAL TAKES  
 0 OWNERSHIPS WITH STRUCTURES INVOLVED  
 0 OWNERSHIPS WITH "P" ITEMS

# SUMMARY OF ADDITIONAL RIGHT OF WAY

NOTE:  
 Record Area After Outsales Minus  
 Total P.R.O. Minus Net Take Equals  
 Net Residue.

FHWA REGION	STATE	STATE PROJECT NO.	
5	OHIO	11602 (0)	

Calc. By JMM  
 Date 12-19-85  
 Date 12-20-85

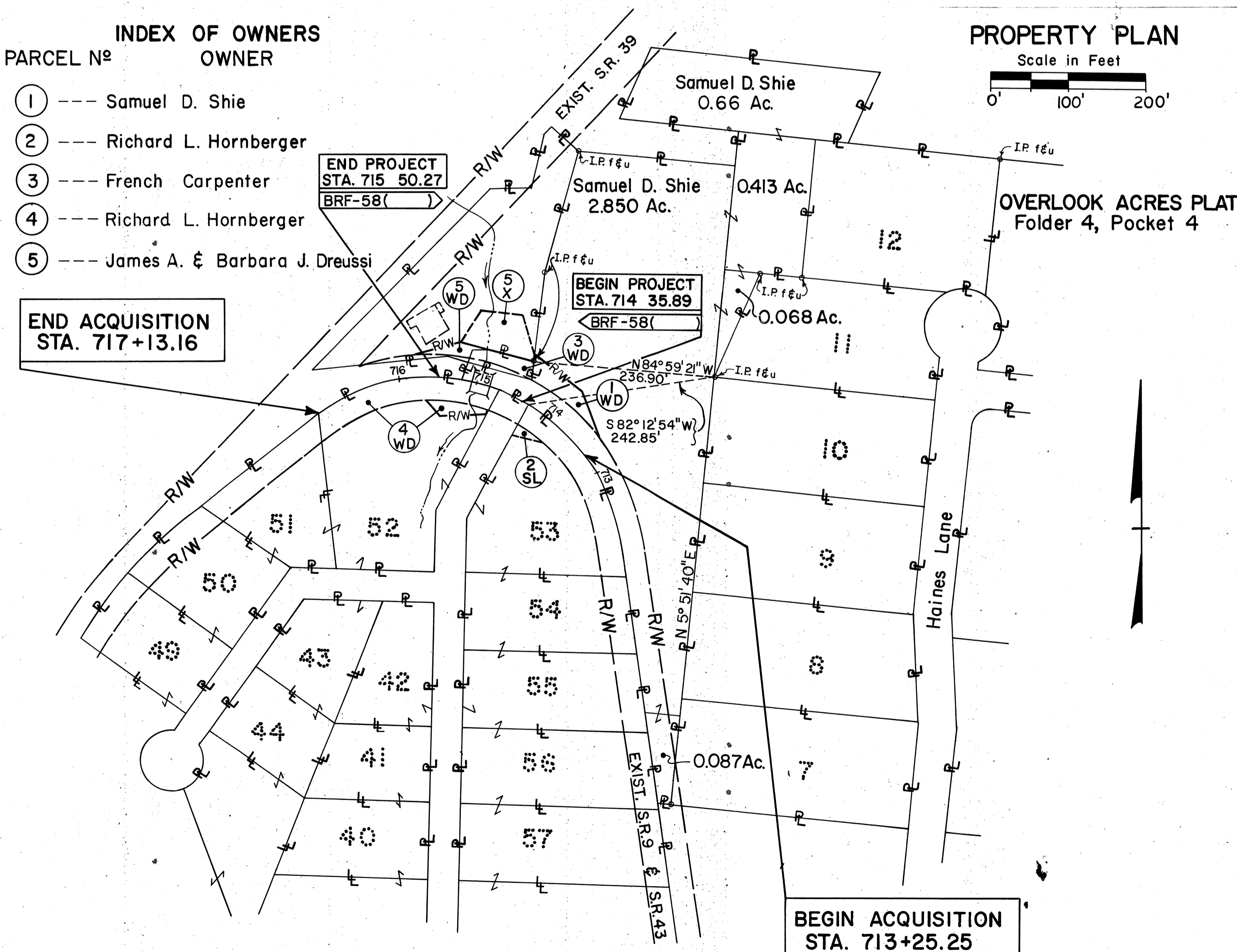
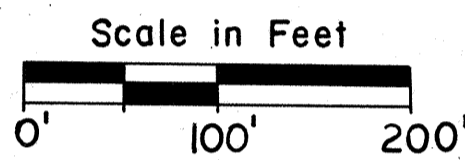
26  
27  
1  
2

PARCEL	OWNER	SHEET NO.	OWNERS RECORD		RECORD AREA	TOTAL P.R.O.	GROSS TAKE	P.R.O. IN TAKE	NET TAKE	STRUC-TURE	NET RESIDUE		TYPE FUND	REMARKS AND PERSONALTY	AS ACQUIRED	
			BOOK	PAGE							LEFT	RIGHT			BOOK	PAGE
1-WD	Samuel D. Shie	2	212,216	710,221	2.850Ac.	0.44 Ac.	0.180 Ac.	0.123 Ac.	0.057 Ac.	---	---	2.353 Ac.	State			
			212,216	710,221	0.660Ac.	0.01 Ac.	0	0	0	---	---	0.650Ac.				
			213,216	49,221	0.068Ac.	0	0	0	0	---	---	0.068 Ac.				
			213,216	49,221	0.413Ac.	0	0	0	0	---	---	0.413 Ac.				
			213,216	49,221	0.087Ac.	0.07 Ac.	0	0	0	---	---	0.017Ac.				
TOTAL - PARCEL N <sup>o</sup> 1-WD			2		4.078Ac.	0.52 Ac.	0.180Ac.	0.123Ac.	0.057Ac.	---	---	3.501 Ac.				
2-SL	Richard L. Hornberger	2	148,194	108,621	31,154 Sq.Ft.	7208 Sq.Ft.	309 Sq.Ft.	0	309 Sq.Ft.	---	---	23,637 Sq.Ft.		LOT 53		
3-WD	French Carpenter	2	203	257	*0.037Ac.	0.009 Ac.	0.040 Ac.	0.009 Ac.	0.031 Ac.	---	---	---		*Calc. Area 0.040 Ac.		
4-WD	Richard L. Hornberger	2	148,194	108,621	4,855 Sq.Ft.	7,355 Sq.Ft.	8376 Sq.Ft.	7355 Sq.Ft.	1021 Sq.Ft.	---	---	33,479 Sq.Ft.		LOT 52		
5-WD	James A. and Barbara J. Dreussi	2	208	228	1027 Ac.	0.35 Ac.	0.031 Ac.	0.01 Ac.	0.020 Ac.	---	---	0.657 Ac.				
5-X		2					0.083 Ac.	0	0.083 Ac.	---	---	---		To Construct and Maintain Channel		

### INDEX OF OWNERS

- PARCEL N<sup>o</sup> OWNER
- ① --- Samuel D. Shie
  - ② --- Richard L. Hornberger
  - ③ --- French Carpenter
  - ④ --- Richard L. Hornberger
  - ⑤ --- James A. & Barbara J. Dreussi

### PROPERTY PLAN



NOTE: The entire ownership of Richard L. Hornberger is not shown because only Lots 52 and 53 in Valley View Estates are being considered for appraisal purposes.

#### PARCEL NO. 1-WD

COURSE	BEARING	DISTANCE
1-2	N 8° 10' 35" E	9.29'
2-3	S 53° 39' 43" E	75.56'
3-4	S 24° 20' 32" E	73.66'
4-5	S 52° 34' 33" W	30.00'
5-6	ARC. LEN. = 192.54' CHD. LEN. = 187.79' CHD. BRG. = N 58° 03' 11" W RADIUS = 249.11'	
6-7	N 20° 40' 35" E	23.47'
7-8	S 74° 07' 39" E	82.27'
8-1	N 8° 10' 35" E	22.35'

#### PARCEL NO. 4-WD

COURSE	BEARING	DISTANCE
13-15	S 28° 25' 16" W	37.25'
15-16	S 88° 45' 37" W	60.42'
16-17	N 37° 10' 40" W	26.19'
17-18	ARC. LEN. = 42.93' CHD. LEN. = 42.87' CHD. BRG. = S 85° 32' 38" W RADIUS = 230.44'	
18-19	ARC. LEN. = 106.72' CHD. LEN. = 106.18' CHD. BRG. = S 70° 14' 58" W RADIUS = 307.03'	
19-20	N 6° 55' 48" W	32.28'
20-21	ARC. LEN. = 104.64' CHD. LEN. = 104.22' CHD. BRG. = N 71° 18' 43" E RADIUS = 337.03'	
21-22	N 80° 12' 24" E	6.95'
22-23	ARC. LEN. = 137.43' CHD. LEN. = 135.70' CHD. BRG. = S 83° 59' 18" E RADIUS = 249.11'	

#### PARCEL NO. 5-X

COURSE	BEARING	DISTANCE
1-28	N 72° 49' 25" W	94.57'
28-29	N 24° 18' 12" E	45.90'
29-30	S 74° 49' 08" E	54.54'
30-2	S 23° 31' 06" E	50.48'
2-1	S 8° 10' 35" W	9.29'

#### PARCEL NO. 2-SL

COURSE	BEARING	DISTANCE
9-10	ARC. LEN. = 38.72' CHD. LEN. = 38.67' CHD. BRG. = S 54° 19' 57" E RADIUS = 230.44'	
10-11	N 76° 22' 42" W	39.68'
11-9	N 28° 25' 16" E	15.01'

#### PARCEL NO. 3-WD

COURSE	BEARING	DISTANCE
1-8	S 8° 10' 35" W	22.35'
8-7	N 74° 07' 39" W	82.27'
7-12	N 20° 40' 35" E	16.49'
12-13	N 88° 10' 35" E	23.00'
13-1	S 72° 49' 25" E	56.00'

#### PARCEL NO. 5-WD

COURSE	BEARING	DISTANCE
7-24	N 74° 07' 39" W	36.28'
24-25	S 83° 42' 21" W	107.47'
25-26	ARC. LEN. = 37.62' CHD. LEN. = 37.61' CHD. BRG. = N 77° 16' 13" E RADIUS = 367.03'	
26-27	ARC. LEN. = 37.38' CHD. LEN. = 37.36' CHD. BRG. = N 83° 53' 38" E RADIUS = 290.44'	
27-28	N 74° 00' 43" E	62.26'
28-13	S 72° 49' 25" E	38.57'
13-12	S 88° 10' 35" W	23.00'
12-7	S 20° 40' 35" W	16.49'

REVISION	BY	DATE
COMPLETED		

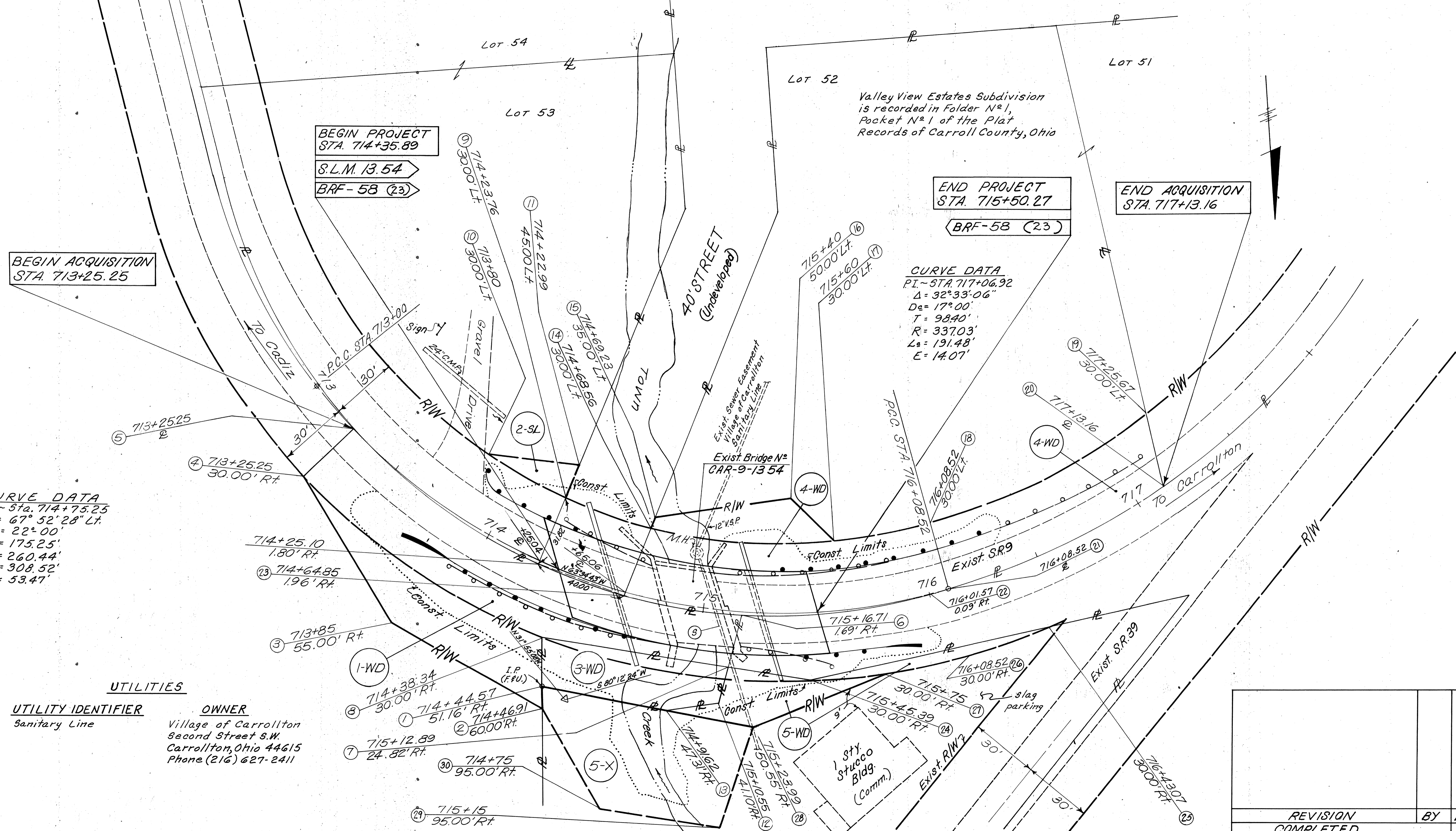
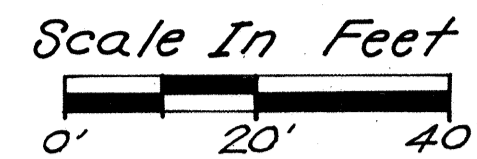


# CARROLL COUNTY CENTER TOWNSHIP, SECTION 31, T 14 N, R 5 W,

FHWA REGION	STATE	PROJECT	Calc. JMM Date: 12/15/95	27
5	OHIO		Chkd. JMM Date: 12/22/95	27

CAR-9-13.54  
R/W PLAN

27  
2  
2



BEGIN PROJECT  
STA. 714+35.89  
S.L.M. 13.54  
BRF-58 (23)

END PROJECT  
STA. 715+50.27  
BRF-58 (23)

END ACQUISITION  
STA. 717+13.16

BEGIN ACQUISITION  
STA. 713+25.25

**CURVE DATA**  
PI - STA. 717+06.92  
 $\Delta = 32^\circ 33' 06''$   
 $D_c = 17^\circ 00'$   
 $T = 98.40'$   
 $R = 337.03'$   
 $L_s = 191.48'$   
 $E = 14.07'$

**CURVE DATA**  
PI - Sta. 714+75.25  
 $\Delta = 67^\circ 52' 28''$   
 $D_c = 22^\circ 00'$   
 $T = 175.25'$   
 $R = 260.44'$   
 $L_s = 308.52'$   
 $E = 53.47'$

**UTILITIES**

UTILITY IDENTIFIER	OWNER
⑤ Sanitary Line	Village of Carrollton Second Street S.W. Carrollton, Ohio 44615 Phone (216) 627-2411

REVISION COMPLETED	BY	DATE

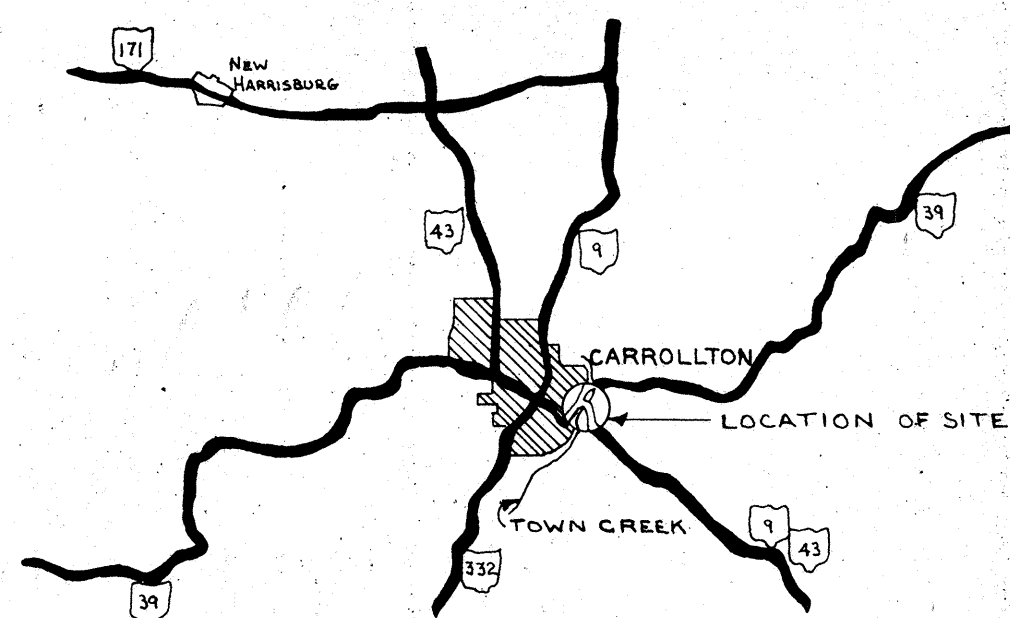


GENERAL INFORMATION

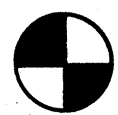
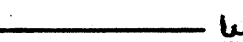
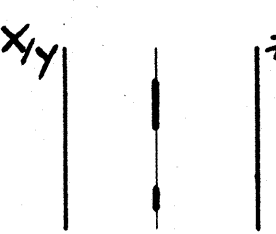
BORINGS ARE MADE BY MEANS OF A ROTARY TYPE DRILL RIG, EMPLOYING A 2-INCH O.D., 1-3/8-INCH I.D. SAMPLER, AT 2-1/2 AND/OR 5-FOOT DEPTH INTERVALS, DRIVEN BY MEANS OF A 140 POUND DROP HAMMER WITH A FREE FALL OF 30 INCHES. THE NUMBER OF BLOWS REQUIRED TO DRIVE THE SAMPLER THE LAST 12 INCHES IS CONSIDERED THE STANDARD PENETRATION TEST.

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 AND SAMPLE DESCRIPTION BASED ON LABORATORY TESTS AND THE OHIO DEPARTMENT OF TRANSPORTATION CLASSIFICATION SYSTEM. RESULTS OF STRENGTH AND CONSOLIDATION TESTING, IF PERFORMED, APPEAR ON SEPARATE ENCLOSURES.

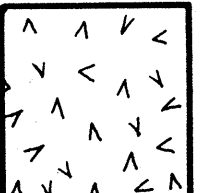
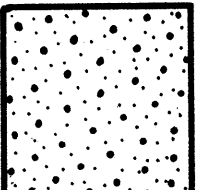

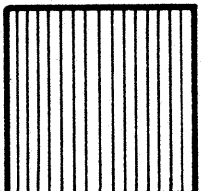
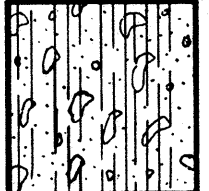
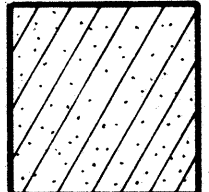
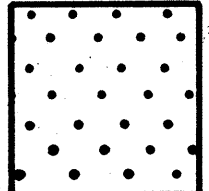
AT DEPTHS WHERE MATERIALS ARE BOULDERY OR GRAVELLY TO THE EXTENT THAT THE SAMPLER CANNOT BE DRIVEN, A WASH SAMPLE IS PROCURED FOR VISUAL CLASSIFICATION, TO DETERMINE THE GENERAL CHARACTER OF THE MATERIAL. THESE SAMPLES ARE NOT CONSIDERED SUFFICIENTLY REPRESENTATIVE TO WARRANT LABORATORY TESTING.



LEGEND

-  BORING LOCATION PLAN
-  INDICATES FREE WATER
-  BORING LOCATION PROFILE DRAWN TO VERTICAL SCALE ONLY  
 X-Y INDICATES NUMBER OF BLOWS FOR STANDARD PENETRATION TEST  
 X- NUMBER OF BLOWS FOR SECOND 6 INCHES  
 Y- NUMBER OF BLOWS FOR THIRD 6 INCHES  
 #- INDICATES WATER CONTENT IN PERCENT

SOIL TYPES

-  RANDOM FILL
-  COARSE and FINE SAND (A-3a)
-  GRAVEL and/or STONE FRAGMENTS with SAND (A-1-b)
-  SANDY SILT (A-4a)
-  GRAVEL and/or STONE FRAGMENTS with SAND and SILT (A-2-4)
-  WEATHERED SANDSTONE
-  SANDSTONE

INTRODUCTION:

THE PROJECT CONSISTS OF CONSTRUCTING A NEW BRIDGE TO REPLACE THE EXISTING STRUCTURE ON STATE ROUTE 9 OVER TOWN CREEK.

GEOLOGY:

THE AREA IS UNGLACIATED AND LIES APPROXIMATELY ELEVEN MILES SOUTH OF THE WISCONSIN DRIFT BORDER. SANDS AND GRAVELS ENCOUNTERED WERE MODERATELY SORTED. THE ABUNDANCE OF ROCK FRAGMENTS INDICATES THAT DEPOSITION OF FRESHLY WEATHERED ROCK HAS TAKEN PLACE. THE UNDERLYING ROCK IS A GRAY AND WHITE FINE-GRAINED SANDSTONE OF PENNSYLVANIAN AGE.

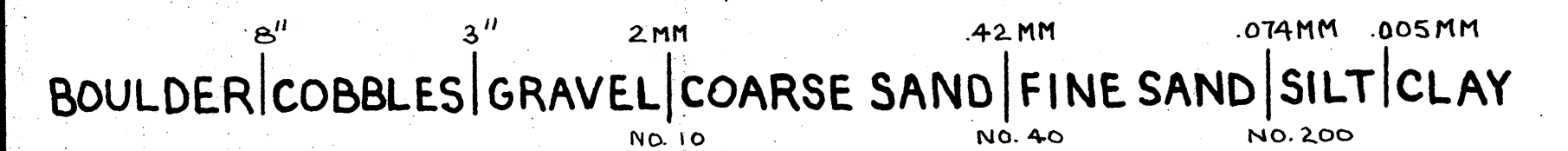
EXPLORATION:

THE EXPLORATION CONSISTS OF 2 EXPLORATORY BORINGS, DESIGNATED C-1 AND C-2, DRILLED TO DEPTHS OF 30.1 FEET EACH. SIXTEEN SAMPLES WERE OBTAINED, VISUALLY CLASSIFIED AND TESTED TO DETERMINE THE NATURAL MOISTURE CONTENT. SEVEN SAMPLES WERE DETERMINED TO BE REPRESENTATIVE OF THE SITE SOILS AND TESTED FOR ATTERBERG LIMITS AND GRADATIONS.

INVESTIGATIONAL FINDINGS:

THE MAJORITY OF THE SOIL IS GRANULAR OF THE A-1-B TO A-2-4 CATEGORY AND SANDY SILT OF THE A-4a TO A-4b CATEGORY. CLASSIFICATION IS ACCORDING TO THE OHIO DEPARTMENT OF TRANSPORTATION SYSTEM. THE BEDROCK CONSISTS OF GRAY AND WHITE SANDSTONE.

PARTICLE SIZE DEFINITION



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614-885-1959

CARROLL COUNTY

CAR-9-1354

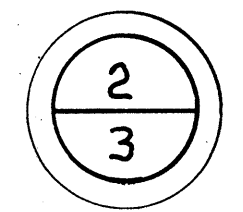
STRUCTURE FOUNDATION INVESTIGATION

DATE 1-26-84 DRAWN BY CEL CHECK BY

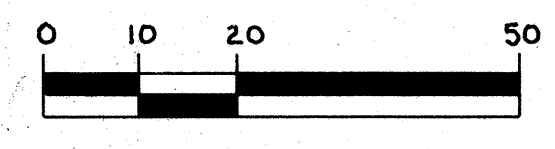


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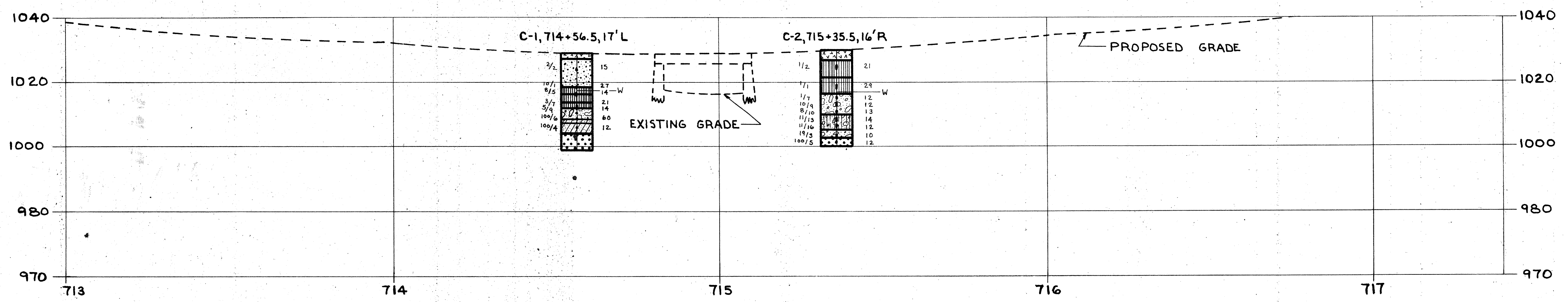
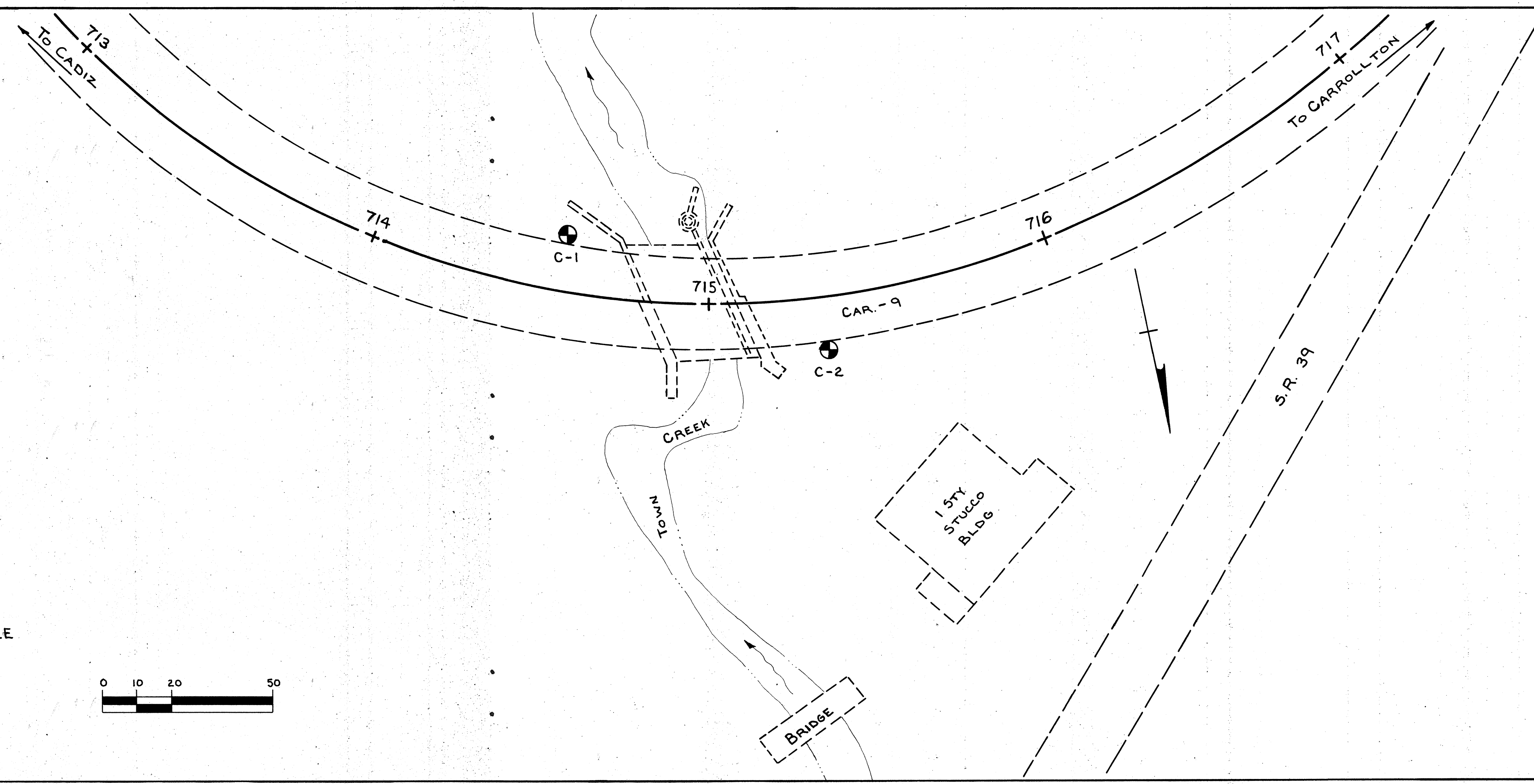
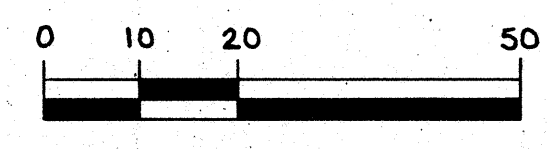
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SCALE



HOR. & VERT.



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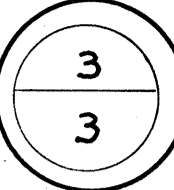
BORING LOG: C-1  
 STATION AND OFFSET: 714+56.5, 17' Lt.  
 SURFACE ELEVATION: 1029.0 FEET

DATE STARTED: 10/28/83  
 DATE FINISHED: 10/31/83  
 SAMPLER TYPE: All 2S RC

BORING LOG: C-2  
 STATION AND OFFSET: 715+35.5, 16' Rt.  
 SURFACE ELEVATION: 1031.0 FEET

DATE STARTED: 10/28/83  
 DATE FINISHED: 10/28/83  
 SAMPLER TYPE: ALL 2S

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ELEV.	SAMP. NO.	BLOWS PER 6"	REC.	DEPTH	SOIL DESCRIPTION	PHYSICAL CHARACTERISTICS							ODOT CLASS					
						WC	LL	PI	AGG	CS	FS	SI		CL				
1027.5					BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, CINDERS, FILL.													
	S-1	2 2 2		5	BROWN AND BLACK FINE TO COARSE SAND, LITTLE FINE GRAVEL.													
1019.0	S-2	4 10 1		10	GRAY AND GREEN CLAYEY SILT AND FINE TO COARSE SAND, LITTLE FINE TO COARSE GRAVEL.	27	22	2	18	5	33	31	13					A-4a
1016.5	S-3	4 8 5		14	BROWN AND GRAY FINE TO COARSE SAND, SOME CLAYEY SILT, LITTLE FINE GRAVEL.													
1014.0	S-4	3 3 7		15	GRAY SILT, SOME FINE TO COARSE SAND, LITTLE CLAY, TRACE FINE GRAVEL.	21	22	1	4	1	27	50	18					A-4b
1012.0	S-5	5 5 9		14	BROWN FINE TO COARSE GRAVEL, SOME FINE TO COARSE SAND, LITTLE CLAYEY SILT.			54	11	16		19						A-1-b
1008.5	S-6	27 100/6"		20	BROWN AND GRAY WEATHERED SANDSTONE.													
1007.0	S-7	100/4"	NR	12	BROWN WEATHERED SANDSTONE.													
1004.0		100/1"	85%	25	GRAY AND WHITE SANDSTONE, FINE GRAINED.													
				30														
					BOTTOM OF BORING - 30.1 FEET.													

NOTE: NR SIGNIFIES NO RECOVERY

ELEV.	SAMP. NO.	BLOWS PER 6"	REC.	DEPTH	SOIL DESCRIPTION	PHYSICAL CHARACTERISTICS							ODOT CLASS						
						WC	LL	PI	AGG	CS	FS	SI		CL					
1028.0					BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL.														
	S-1	1 1 2		5	BROWN FINE TO COARSE SAND, SOME TO AND SILT, TRACE FINE GRAVEL, TRACE CLAY.														
1022.5	S-2	1 1 1		10	GRAY AND GREEN CLAYEY SILT, SOME FINE TO COARSE SAND.	29	25	6	0	3	27	49	21						A-4a
1017.5	S-3	1 1 7		12	BROWN FINE TO COARSE GRAVEL AND FINE TO COARSE SAND, LITTLE CLAYEY SILT.														
1016.5	S-4	9 10 9		15	BROWN FINE GRAVEL, SOME FINE TO COARSE SAND, SOME CLAYEY SILT.	12	23	6	48	6	21	15	10						A-1-b
	S-5	7 8 10		13															
1011.0	S-6	9 11 13		20	BROWN FINE TO COARSE SAND, SOME TO AND FINE GRAVEL, SOME CLAYEY SILT.			35	19	16	30								A-2-4
	S-7	10 11 16		12															
1006.0	S-8	81 19/3"		25	BROWN & GRAY FINE TO COARSE GRAVEL, SOME FINE TO COARSE SAND, SOME CLAYEY SILT.			47	11	21	21								A-1-b
1004.0	S-9	100/5"	NR	12	GRAY & BROWN FINE TO COARSE WEATHERED SANDSTONE.														
		100/1"		30															
					BOTTOM OF BORING - 30.1 FEET WATER ENCOUNTERED AT 13.0 FEET.														

NOTE: NR SIGNIFIES NO RECOVERY

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 STRUCTURE FOUNDATION INVESTIGATION

DATE: 1-26-84 DRAWN BY: CR.S CHECKED BY: