OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BRIDGE REPAIR (Overlays) 1/13

PLAN NO. BR-21-86

PART	COUNTY	ROUTE	SECTIONS (BRIDGE NUMBERS)	PROJECT TERMINII BEGIN	PROJECT TERMINII END	NET LENGTH MILES	TOWNSHIP	CITY	VILLAGE
I	DEF	15	DEF-15-1288			0.00	Noble		
II	DEF	15	DEF-15-1338			0.00	Noble		
III	DEF	18	DEF-18-2911			0.00	Richland		
IV	DEF	66	DEF-66-0735			0.00	Noble		

The Standard 19 87 Specifications of the State of Ohio, Department of Transportation, including changes and Supplemental Specifications listed in the plans and proposal shall govern these improvements.

I hereby approve these plans and declare that the making of these improvements will require the closing of the highways to traffic on Parts No. III and that detours will be provided by State forces. The closing to traffic of the highways will not be required on Parts No. I, II, & IV and provisions for the maintenance and safety of traffic will be as indicated in the proposal.

CMK Approved Date 2-11-88 — James L. Schmerd P.E. — District Deputy Director of Transportation

FFE 2-18-88 Approved Date 2-18-88 — B. D. Hamilton — Engineer of Bridges

Approved Date _____ — Engineer of Maintenance

JP Approved Date 2-24-88 — James R. Longenecker — DEPUTY DIRECTOR, OPERATIONS

Approved Date _____ — Assistant Deputy Director, Program Development

Approved Date _____ — Chief Engineer, Construction

Approved Date _____ — Chief Engineer, Design

Approved Date _____ — Assistant Director, Department of Transportation

Approved Date 2-24-88 — Bernard B. Kent — Director, Department of Transportation

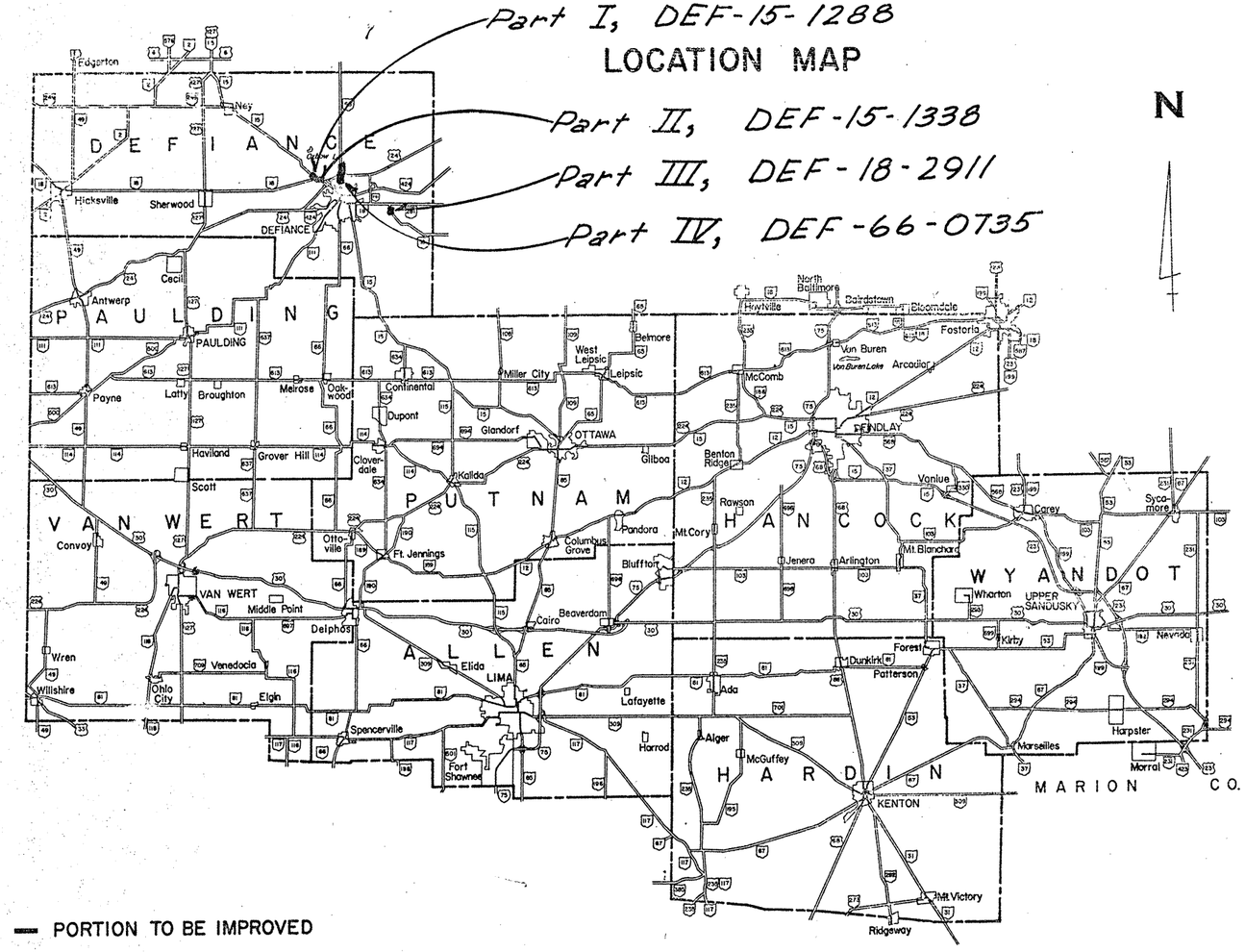
Part I, DEF-15-1288

LOCATION MAP

Part II, DEF-15-1338

Part III, DEF-18-2911

Part IV, DEF-66-0735



— PORTION TO BE IMPROVED

STANDARD DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
BP-5	10-1-87	845	2-25-86
		953	8-21-80

328

M0236 scanned

328(80)

5-10-88

DEPARTMENT OF TRANSPORTATION
M& R 712 REV. 9-1-83

GENERAL NOTES

DEFIANCE COUNTY
Noble Twp.
Richland Twp.

2/13

PLAN NO. BR-21-86

Item 202 - Wearing Course Removed:

The quantities shown on this item are to be used at the direction of the Engineer to remove portions of the existing approach pavement (including approach slabs) as needed to obtain a desirable profile of the approach pavement to meet the new deck surface. Also the existing pavement shall be removed as directed and required in order that a "butt joint" can be made between the existing and new pavements. The actual quantity performed on this item on each part of this project will be as directed by the Engineer and may vary from that shown on plans.

Item 404 - Asphalt Concrete:

The quantities shown on this item are to be used to resurface the approach pavement and approach slabs to meet the new deck surface. The 404 shall extend outward from each end of each bridge at a nominal depth of 1½ inches for a distance of 100 feet to meet the existing pavement in a "butt joint". The depth and length of the 404 shall be subject to variation as directed by the Engineer in order to obtain a smooth transition from the existing pavement to the new deck surface.

The Contractor may at his option place temporary "approach wedges" of asphalt paving material at the ends of individual traffic lanes on those bridges where one-lane traffic is to be maintained. These "approach wedges" may remain in place until the approaches are ready to be paved full width when the deck overlay has been completed. These "approach wedges" are to be provided and maintained by the Contractor and all costs for such are to be included in the bid price for Item 614, Maintaining Traffic.

Item 407 - Tack Coat:

This item is to be used as directed by the Engineer to cover the surface of the existing approach pavement and approach slabs prior to repaving of the bridge approaches. The maximum rate of application shall not exceed 0.1 gal. per square yard.

Item 519 - Patching Concrete Structures:

The quantities shown on this item are to be used as directed by the Engineer to repair areas of unsound concrete on the curbs, parapets or other portions of the structures other than the deck surface.

Types of Deck Overlays To Be Used:

Two types of deck overlay systems are to be used on this project. On Parts I and IV the overlays shall be placed using Micro Silica Modified Concrete in accordance with the Proposal Note for this project. On Parts II and III the overlays are to be placed using Latex Modified Concrete in accordance with Supplemental Specification 845.

Item 619 - Field Office:

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

Item 845 - Latex Modified Concrete Overlay, Variable Thickness and Item Special - Micro Silica Modified Concrete Overlay, Variable Thickness:

The quantities shown on these items are to be used to replace areas of unsound concrete removed from the existing bridge deck and also to be used as directed by the Engineer to correct the profile of the existing bridge deck.

Item 845 - Full Depth Repair and Item Special - Full Depth Repair:

The Contractor shall be aware that when working on these items on any portion of a deck over the travel lanes of USR 24 or over the B&O Railroad, extreme caution shall be used to prevent the possibility of any debris of any type from falling onto traffic beneath the structure.

If it appears that the possibility of such debris falling is imminent, the appropriate travel lanes of USR 24 shall be closed during the performance of this work. Lane closures on USR 24 shall be in accordance with Sheet 10 using all necessary warning signs, flashing directional arrows, and other protective devices. On Part IV of this project, if this situation occurs, the railroad shall be notified immediately and all actions required to comply with their requirements shall be taken as soon as possible.

The decision on closing of travel lanes under any structure on this project during repair operations shall be made by the Contractor in consultation with the Engineer; however, the Contractor shall assume full responsibility for any debris that should fall onto traffic.

All costs incurred for such traffic control items shall be included in the lump sum bid for Item 614, Maintaining Traffic.

Item 614 - Maintaining Traffic:

The Contractor shall provide all necessary signs, barricades, etc. as required at each work site on the project. Also the Contractor may be required to close travel lanes on USR 24 or the railroad under the structures to prevent debris from falling onto traffic while work is in progress.

On Parts I, II, and III of this project the work is to be performed while maintaining two-way traffic in one lane by using temporary traffic signals as shown on Sheet Nos. 11, 12 & 13. The Contractor shall designate to the Engineer a person who will be available to maintain these signals during all non-working hours. This person must be available to reach the job site within thirty(30) minutes upon notification at all times when work is not in progress. The maximum period allowed for any one lane closure on Parts I, II & III shall not exceed twenty-one (21) calendar days.

On Part IV of this project the road shall be closed for the performance of the work and a detour will be provided by ODOT. On Part IV the road shall not be closed in excess of thirty (30) calendar days.

Failure to comply with detour limitations on any part of this project shall result in liquidated damages as per Sec. 108.07 of the C.M.S.

The lump sum amount bid on this item shall include full payment for all labor, equipment and materials required to perform the work.

Item 617 - Compacted Aggregate:

The quantities shown on this item are to be used as directed by the Engineer to correct "low areas" on shoulders adjacent to the approach pavement.

GENERAL NOTES
for
PART I, Bridge No. DEF-15-1288
" II, Bridge No. DEF-15-1338
" III, Bridge No. DEF-18-2911
" IV, Bridge No. DEF-66-0735

DEPARTMENT OF TRANSPORTATION
M& R 712 REV. 9-1-83

DEFIANCE COUNTY
Noble Twp.
Richland Twp.

3/13

PLAN NO. BR-21-86

GENERAL SUMMARY

Quantities for Parts							Description	
Item	I	II	III	IV	Total	Unit		
202	689	689	534	689	2601	Sq. Yd.	Wearing Course Removed	X
404	29	29	25	29	112	Cu. Yd.	Asphalt Concrete, AC-20	X
407	69	69	54	69	261	Gal.	Tack Coat	X
516	60	61	83	60	264	Lin. Ft.	Vertical Extension of Structural Expansion Joints	X
519	40	40	40	60	180	Sq. Ft.	Patching Concrete, Structures	X
Spec.	340	690	395	682	2107	Sq. Yd.	Sealing of Concrete Surfaces *	X
845	0	789	700	0	1489	Sq. Yd.	Latex Modified Concrete Overlay (1 1/4") *	
845	0	17	12	0	29	Cu. Yd.	Latex Modified Concrete Overlay (variable thickness) *	
845	0	1	1	0	2	Cu. Yd.	Full-Depth Repair	
Spec.	743	0	0	778	1521	Sq. Yd.	Micro-Silica Modified Concrete Overlay (1 1/4") *	X
Spec.	10	0	0	26	36	Cu. Yd.	Micro-Silica Modified Concrete Overlay (Var. thickness) *	X
Spec.	1	0	0	1	2	Cu. Yd.	Full-Depth Repair *	X
Spec.	Lump	0	0	Lump	Lump	Lump	Test Slab *	
617	4	4	5	4	17	Cu. Yd.	Compacted Aggregate	X?
614	0.08	0.09	0.08	0.09	0.34	Mile	Temporary Center Lines, Class II	X
614	Lump	Lump	Lump	Lump	Lump	Lump	Maintaining Traffic	X
619	Lump	Lump	Lump	Lump	Lump	Lump	Field Office	X
624	Lump	Lump	Lump	Lump	Lump	Lump	Mobilization	X

*See Proposal Note

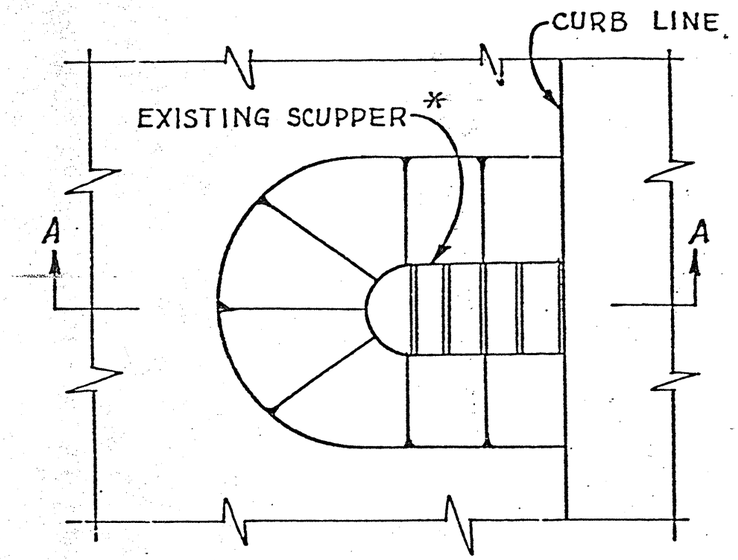
GENERAL SUMMARY
for
Bridge No. DEF-15-1288 & 1338
Bridge No. DEF-18-2911
Bridge No. DEF-66-0735

DEPARTMENT OF TRANSPORTATION
M& R 712 REV. 9-1-83

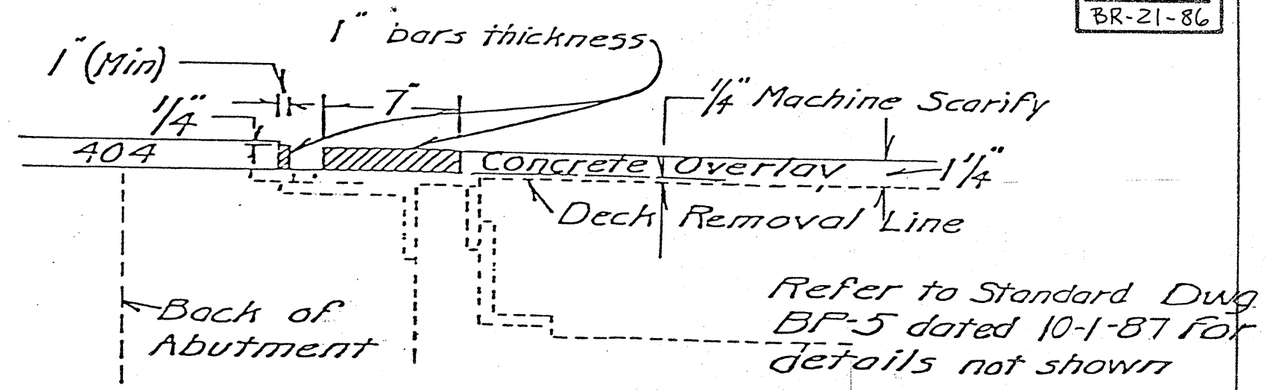
VERTICAL EXTENSION OF EXPANSION JOINTS

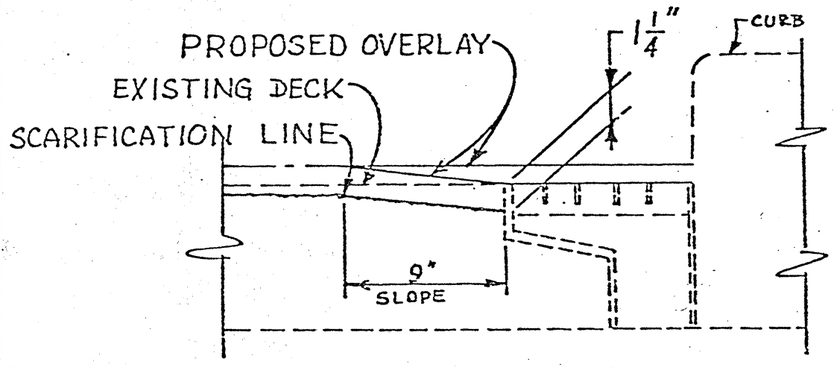
4/13

PLAN NO. BR-21-86



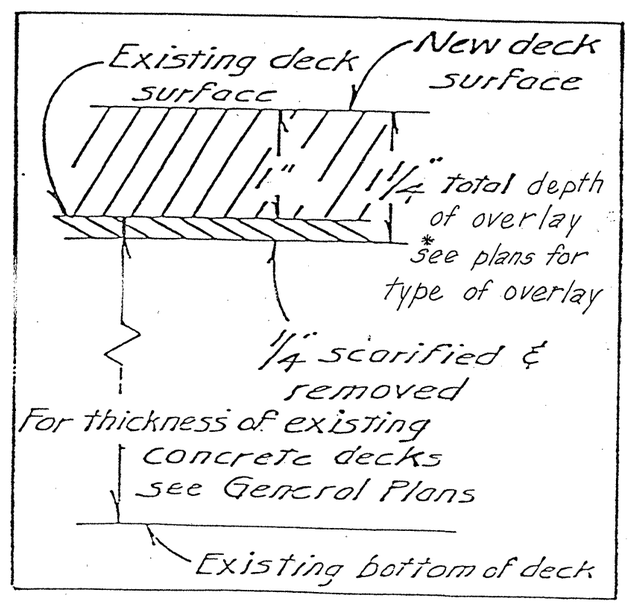
PLAN VIEW





SECTION A-A

TYPICAL OVERLAY DETAIL AT SCUPPERS
* SCUPPERS AS FOUND MAY BE REVERSED 180° OR OF ANOTHER TYPE THAN THAT SHOWN.



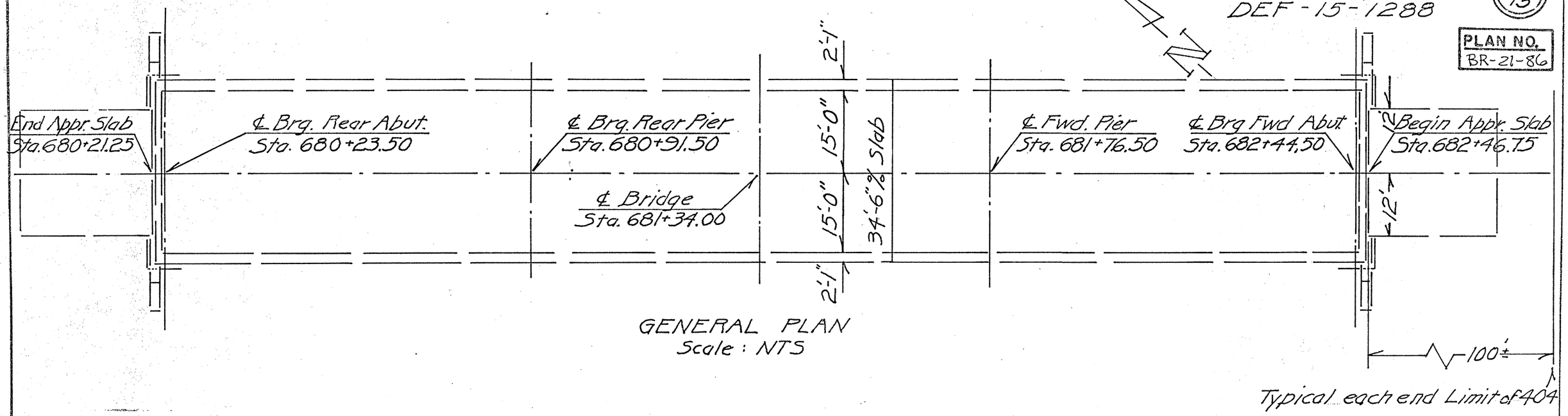
DETAIL OF OVERLAY AT SCUPPERS, & VERTICAL EXTENSION OF EXPANSION JOINTS
for
PART I, Bridge No. DEF-15-1288
PART II, Bridge No. DEF-15-1338
PART III, Bridge No. DEF-18-2911
PART IV, Bridge No. DEF-66-0735

DEPARTMENT OF TRANSPORTATION
M& R 712 REV. 9-1-83

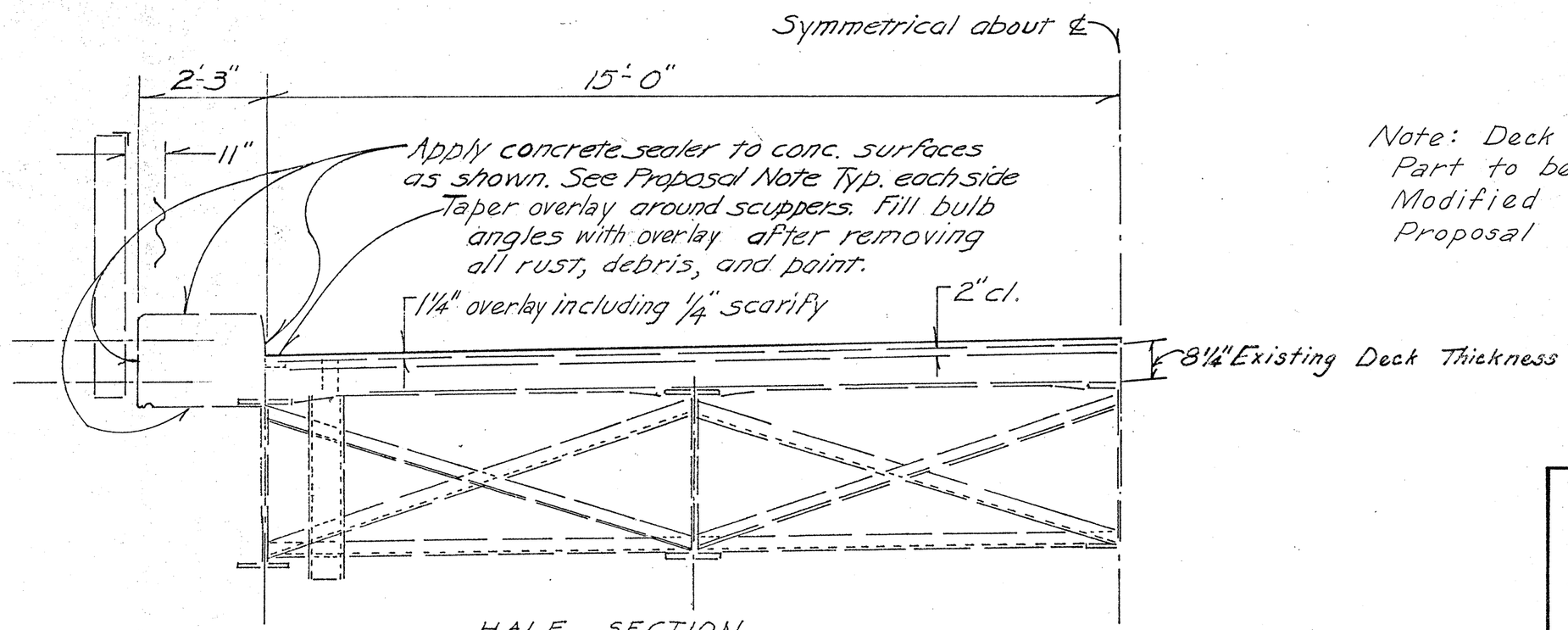
DEFIANCE COUNTY
Noble Twp.
DEF-15-1288

5/13

PLAN NO.
BR-21-86



GENERAL PLAN
Scale: NTS



HALF SECTION
Scale: N.T.S.

Note: Deck overlay on this Part to be Micro-Silica Modified Concrete as per Proposal Note.

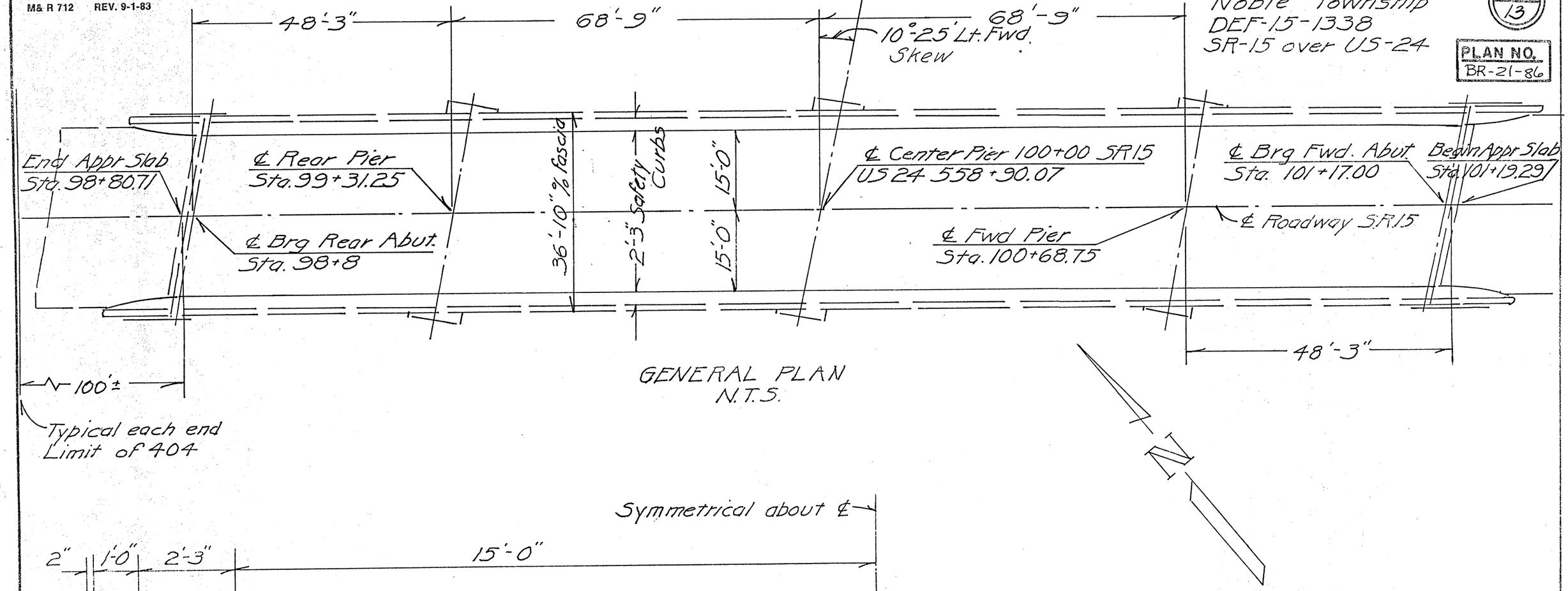
GENERAL PLAN
& HALF SECTION
For PART I
Bridge No. DEF-15-1288
over
Tiffin River
RID 3-12-86

DEPARTMENT OF TRANSPORTATION
M& R 712 REV. 9-1-83

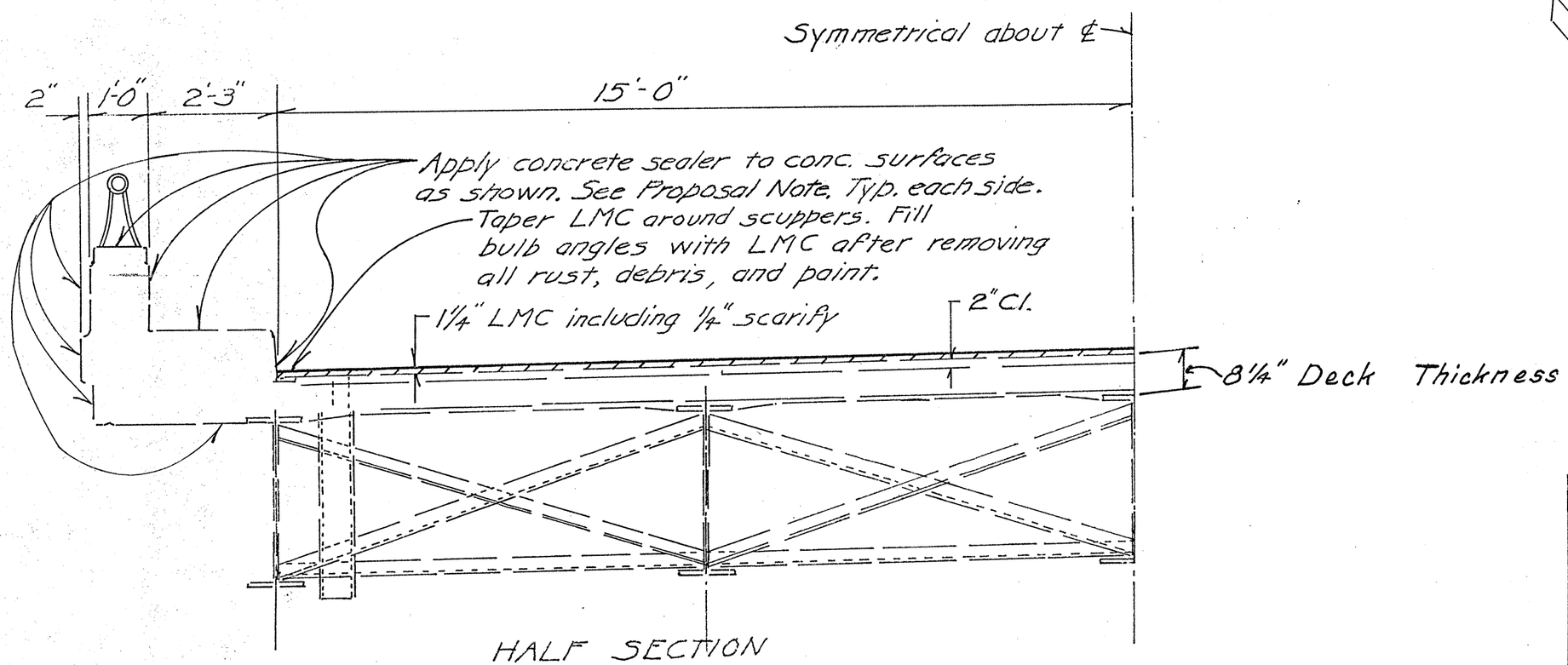
DEFIANCE COUNTY
Noble Township
DEF-15-1338
SR-15 over US-24

6/13

PLAN NO.
BR-21-86



GENERAL PLAN
N.T.S.



HALF SECTION
Scale: NTS

GENERAL PLAN
& HALF SECTION
For PART II
Bridge No. DEF-15-1338
over
USR-24
R.I.D. 3-7-86

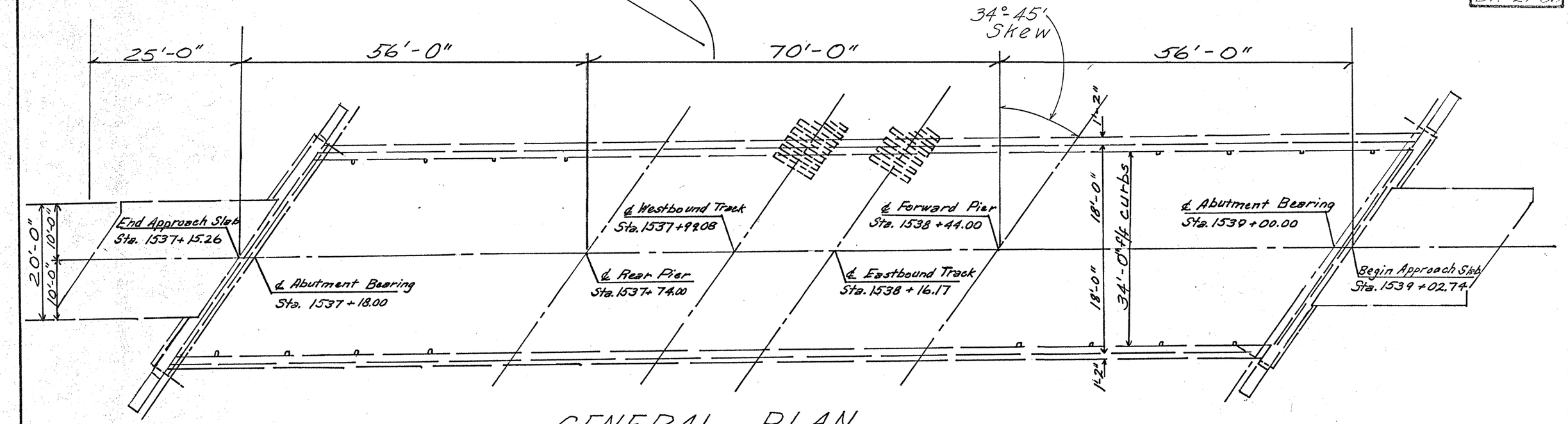
DOT 1925

DEPARTMENT OF TRANSPORTATION
M& R 712 REV. 9-1-83

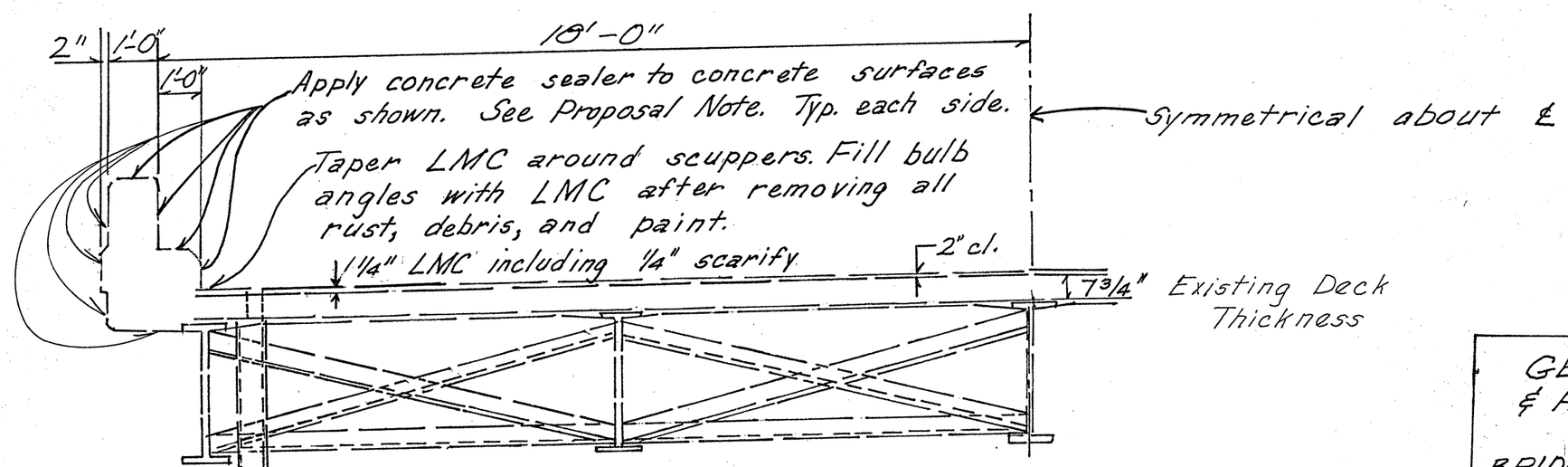
DEFIANCE COUNTY
RICHLAND TWP.
DEF-18-2911
S.R. 18 over B & O R.R.

7/13

PLAN NO.
BR-21-86



GENERAL PLAN
Scale: N.T.S.



HALF SECTION
Scale: N.T.S.

GENERAL PLAN
& HALF SECTION
for PART III
BRIDGE No: DEF-18-2911
over
B & O R.R.
DEFIANCE CO.
D.M.R. 12-2-87

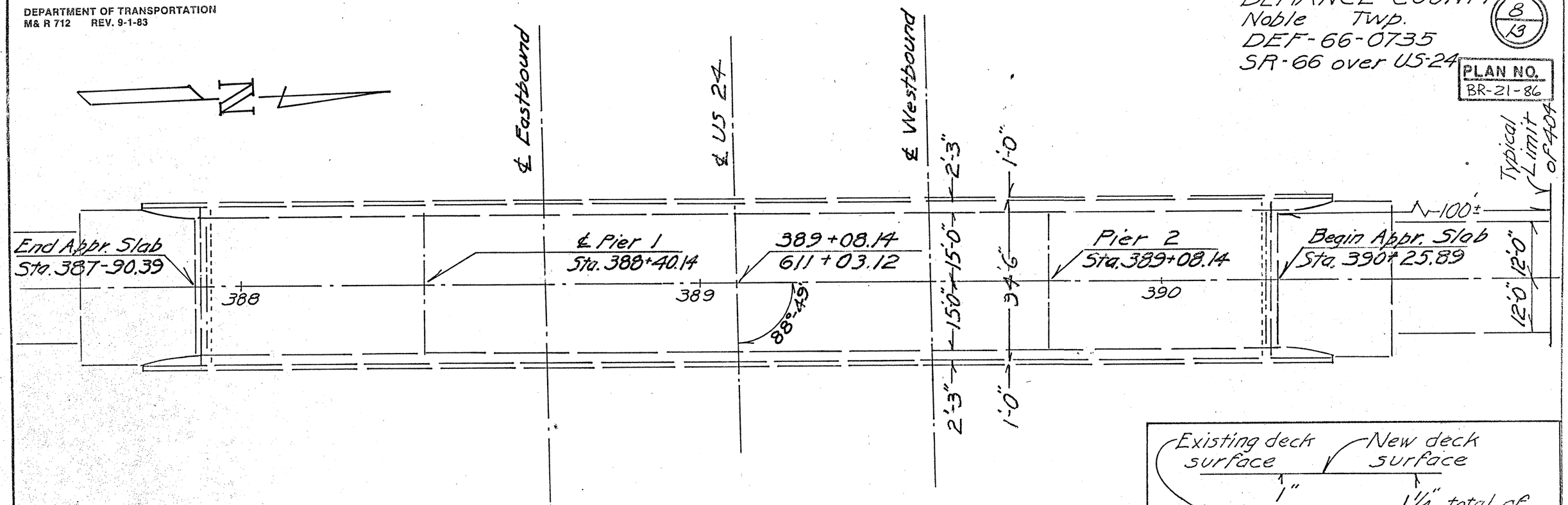
DOT 1925

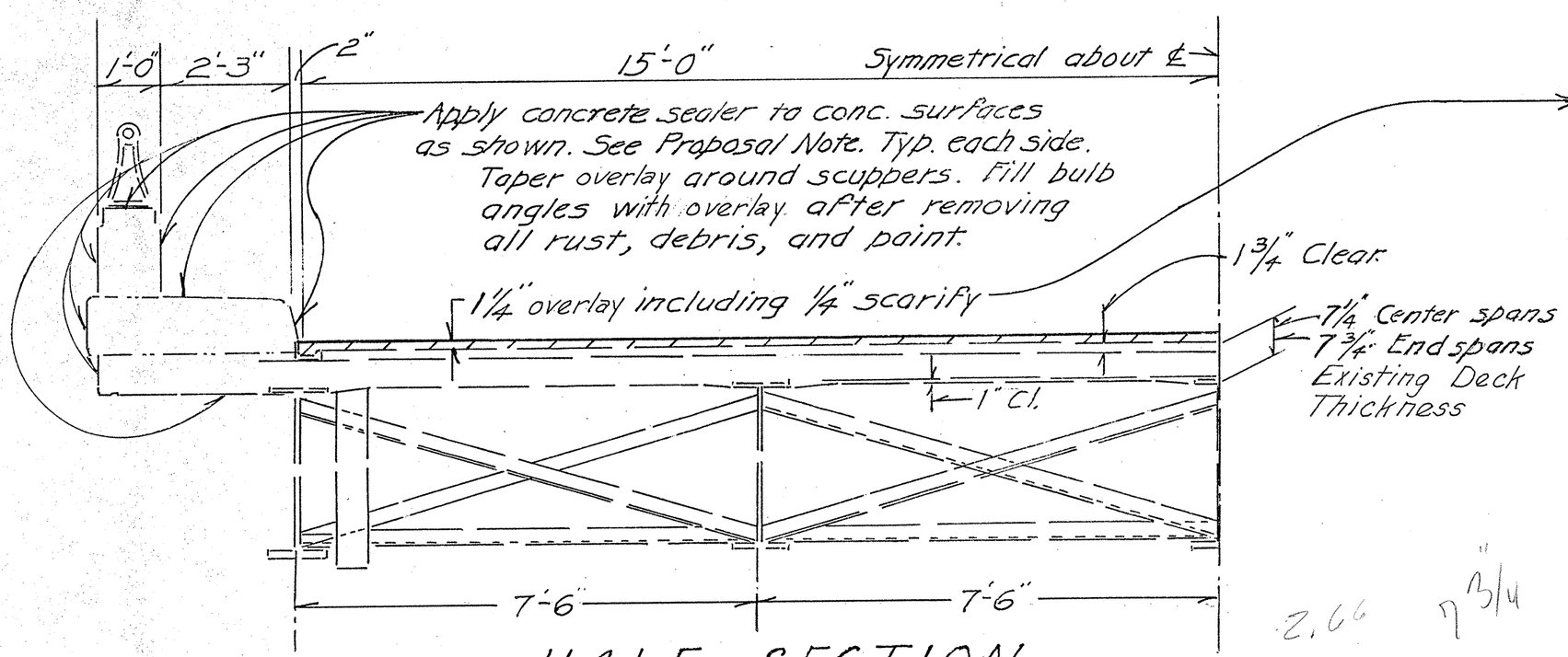
DEPARTMENT OF TRANSPORTATION
M& R 712 REV. 9-1-83

DEFIANCE COUNTY
Noble Twp.
DEF-66-0735
SR-66 over US-24

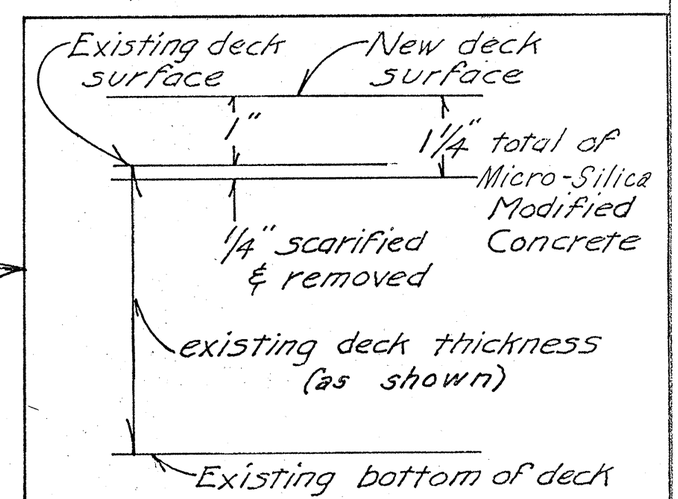
8/13

PLAN NO.
BR-21-86





HALF SECTION
Scale : N.T.S.



Note: Deck overlay on this Part to be Micro-Silica Modified Concrete as per Proposal Note.

GENERAL PLAN
& HALF SECTION
For PART IV
Bridge No DEF-66-0735
over
U.S.R. 24
RID 2-18-86

2.66 7 3/4"
1."

DOT 1925

PLAN NO. BR-21-86

FHWA REGION	STATE			
5	OHIO			

(9/13)

DEFIANCE COUNTY
Brdg. No. DEF-15-1288 & 1338
DEF-18-2911
DEF-66-0735

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 ROADWAYS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE MARKINGS SHALL BE EVALUATED BY THE ENGINEER IN ACCORDANCE WITH THE THREE PERFORMANCE PARAMETERS CONTAINED IN SUPPLEMENT 1047. THE MARKINGS SHALL BE REPAIRED OR REPLACED WHEN THE NUMERICAL RATING OF A PARAMETER IS (a) SIX OR LOWER FOR DURABILITY, (b) FOUR OR LOWER FOR VISUAL EFFECTIVENESS AND (c) FOUR OR LOWER FOR NIGHT VISIBILITY. THE CONTRACTOR SHALL REPAIR OR REPLACE UNSATISFACTORY MARKINGS IMMEDIATELY AND AT NO ADDITIONAL COST TO THE STATE.

THE CONTRACTOR SHALL, IN ADVANCE OF ANY SECTION OF ROADWAY LACKING A MUTCD FULL PATTERN STANDARD DIMENSION EDGE LINE OR CENTER LINE MARKINGS, ERECT A "NO EDGE LINES" (OW-167-36) SIGN OR "UNMARKED NO PASSING ZONES" (OW-168-36) SIGN OR BOTH AS MAY BE APPROPRIATE. THESE SIGNS SHALL BE IN PLACE PRIOR TO EXPOSING THE ROADWAY TO TRAFFIC. THESE SIGNS SHALL ALSO BE ERECTED ON EACH ENTRANCE RAMP, AT INTERSECTIONS OF THROUGH ROADS TO WARN ENTERING OR TURNING TRAFFIC OF THE CONDITION AND AT LEAST ONCE EVERY TWO MILES ALONG THE ROADWAY. THESE SIGNS SHALL BE REMOVED WHEN THEY NO LONGER APPLY.

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.

PAINT

PAINTED MARKINGS SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT (1) PARAGRAPH 621.14 SHALL NOT APPLY, (2) WHERE THE MARKINGS ARE NOT LIABLE TO BE TRACKED, EITHER CONVENTIONAL OR FAST DRY PAINT MAY BE USED FOR 621.02, AND (3) WHEN APPLIED TO NEW ASPHALT PAVEMENT SURFACES OR PLANED ASPHALT PAVEMENT SURFACES, THE SPECIFIED APPLICATION RATE SHALL BE AS FOLLOWS:

WIDTH OF LINE, IN.	4	6	8	12	24
	GALLONS PER MILE OF LINE				
SOLID LINE	24	36	48	72	144
DASHED LINE	6	9			
DOTTED LINE	8	12			

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 947 EXCEPT AS MODIFIED HEREIN.

PLACEMENT

TEMPORARY MARKINGS SHALL BE COMPLETE AND IN PLACE ON ALL PAVEMENT, INCLUDING RAMPS, 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.

LINE PLACEMENT TOLERANCE FOR FINAL SURFACES SHALL BE IN ACCORDANCE WITH 621.052. ON SURFACES OTHER THAN THE FINAL, THE TOLERANCE PERMITTED SHALL BE TWICE THAT IN 621.052.

LAYOUT AND PREMARKING SHALL BE IN ACCORDANCE WITH 621.051.

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) TRANSVERSE LINES SHALL BE 8-INCHES IN WIDTH.
2) STOP LINES SHALL BE 12-INCHES IN WIDTH.
3) 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 2.4 GALLONS PER MILE FOR LANE LINE AND CENTER LINE AND 24 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 SHALL BE APPLIED. EQUIVALENT 614 CLASS I, PAINT MARKINGS MAY BE USED IN LIEU OF FINAL MARKINGS. IN THIS EVENT, 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 SUM OF $200 PER CALENDAR DAY WILL BE DEDUCTED FROM ANY MONEY DUE THE CONTRACTOR, NOT AS A PENALTY BUT AS LIQUIDATED DAMAGES.

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.

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 ____, *
614	0.34 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	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, *

*TYPE MATERIAL (621 PAINT, 947.03 TYPE B OR 947.03 TYPE C OR LEFT BLANK TO PERMIT ANY OF THE THREE)

614

621 EDGE LINES ON NEW ASPHALT PAVEMENTS

EDGE LINES SHALL BE IN ACCORDANCE WITH 621 EXCEPT THAT (1) ON EVERY ROADWAY AND RAMP, EDGE LINES SHALL BE IN PLACE PRIOR TO EXPOSING IT TO TRAFFIC, (2) WHERE THE EDGE LINES ARE NOT LIABLE TO BE TRACKED, EITHER CONVENTIONAL OR FAST DRY PAINT MAY BE USED FOR 621.02; AND (3) WHEN APPLIED TO NEW ASPHALT PAVEMENT THE SPECIFIED APPLICATION RATE SHALL BE 24 GALLONS PER MILE.

614 WORK ZONE MARKING SIGNS

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN AND SUBSEQUENTLY REMOVE WORK ZONE MARKING SIGNS (OW-167 AND OW-168) WITHIN THE WORK LIMITS IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE CONTRACTOR MAY USE SIGNS AND SUPPORTS IN USED BUT GOOD CONDITION PROVIDED THE SIGNS MEET CURRENT DEPARTMENT SPECIFICATIONS. SIGN FACES SHALL BE REFLECTORIZED WITH TYPE G SHEETING COMPLYING WITH THE REQUIREMENTS OF 730.19. WORK ZONE MARKING SIGNS SHALL BE PROVIDED WITH SUITABLE YIELDING SUPPORTS OF SUFFICIENT STRENGTH AND STABILITY.

WORK ZONE MARKING SIGNS WILL BE MEASURED AS THE NUMBER OF SIGN INSTALLATIONS, INCLUDING THE SIGN AND NECESSARY SUPPORTS. ALL OTHER WORK ZONE SIGNS SHALL BE INCLUDED IN 614 MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

PAYMENT FOR ACCEPTED QUANTITIES, COMPLETE, IN PLACE WILL BE MADE AT THE CONTRACT UNIT PRICE. PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, INCIDENTIALS AND EQUIPMENT FOR PLACEMENT, MAINTENANCE AND REMOVAL OF THE SIGNS.

ITEM	UNIT	DESCRIPTION
614	EACH	WORK ZONE MARKING SIGNS

A QUANTITY OF _____ EACH WORK ZONE MARKING SIGNS (_____ EACH "NO EDGE LINES" OW-167 AND _____ EACH "UNMARKED NO PASSING ZONES" OW-168) ARE CARRIED TO THE GENERAL SUMMARY TO BE USED AS DIRECTED BY THE ENGINEER.

Rev. 4-9-86 RLE

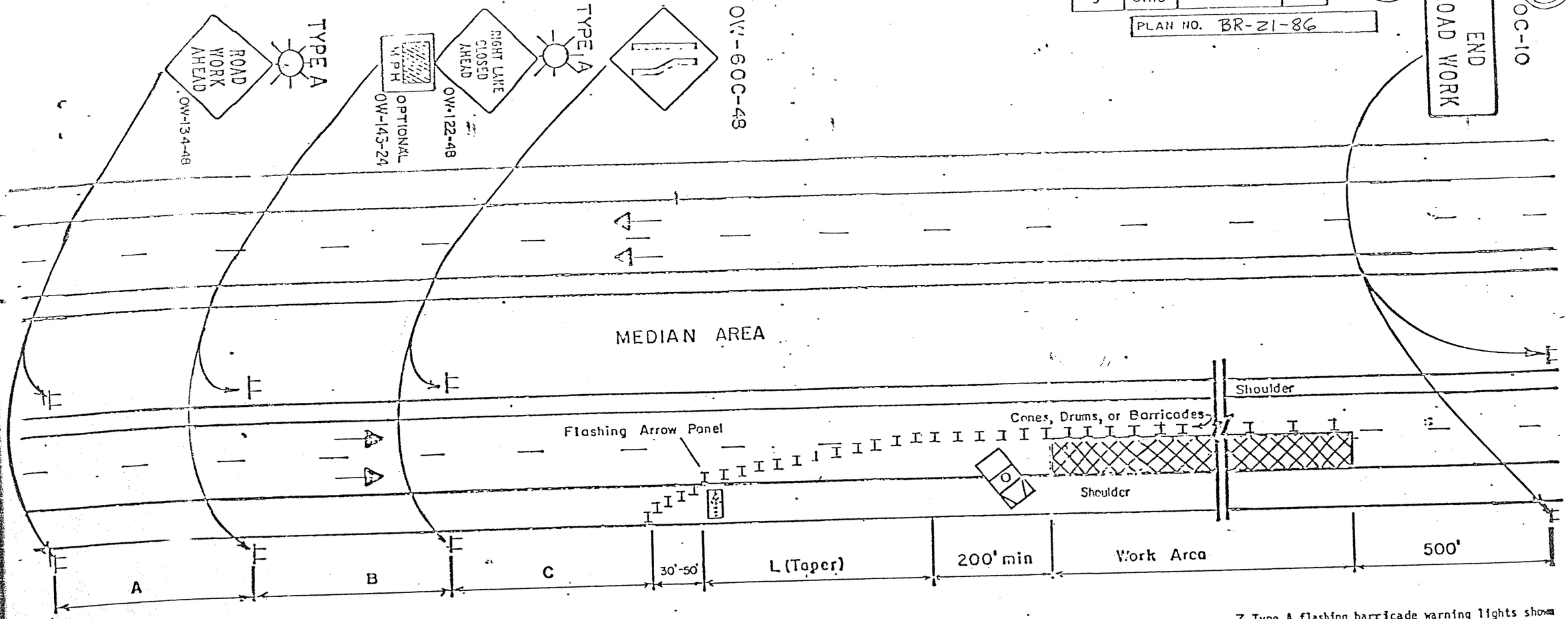
2-21-86

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

PLAN NO. BR-21-86

10/13

OC-10



GENERAL NOTES:

1. The taper length (L) shall be in accordance with Section 7F-17 of the OMUTCD. The location of the transition taper and location of the advance warning signs should be adjusted to provide for adequate sight distance for the existing vertical and horizontal roadway alignment. In order to determine the minimum number of channelizing devices for the transition taper see Table 7-5 OMUTCD. For a 55 MPH prevailing speed and a 12 ft. lane, not less than thirteen (13) cones, drums or barricades shall be used to form the lane transition taper in advance of the work area. Not less than five (5) cones, drums or barricades shall be used to form the taper on the shoulder. Cones, drums or barricades shall be spaced approximately 50' to 60' center to center for the first 1000 feet of the work area and at a maximum of 100 to 120 feet for the balance of the work area. Cones may be substituted for barricades or drums for short term lane closures. Cones shall be reflectorized, de-lineated or internally illuminated for short term night lane closures.

2. The major standard level warning sign sizes may be used on divided streets or highways that are not classified as freeways or expressways.

3. When work is being performed in the lane adjacent to the median on a divided highway an OW-123-48 sign(s) shall be substituted for the OW-122-48 sign(s) and an OW-60D-48 sign(s) shall be substituted for the OW-60C sign(s).

4. The work vehicle shown at the beginning of the work area shall be in place and unoccupied whenever workers are in the work area. This work vehicle shall be removed from the pavement whenever workers are not in the work area. Other protective devices may be used in lieu of the work vehicle shown when approved by the Engineer. The vehicle shall be equipped with a 360° rotating or flashing amber beacon clearly visible a minimum of a ½ mile.

5. The flashing arrow panel shall meet requirements contained in Section 7G-8, OMUTCD.

6. Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. The maximum spacing shall be identical to the channelizing device spacing requirements described in Note 1.

MINIMUM DISTANCE	A	B	C
MAJOR STANDARD	500'	500'	500'
URBAN FREEWAY & EXPRESSWAY	500' TO 1000'	500' TO 1000'	500' TO 1000'
RURAL FREEWAY & EXPRESSWAY	2000'	1600'	1000'

7. Type A flashing barricade warning lights shown on the "Road Work Ahead" and the "Right Lane Closed Ahead" signs are required whenever a right lane closure is necessary.

8. Some work area locations may require more than just static or conventional signs to enhance communication with the driver. At these locations Portable Changeable Message Signs (PCMS) units are recommended. These devices should be located approximately 2000-4000 ft in advance of a lane closure or other point of required action. See Section 7G-8.1, OMUTCD for further guidance on use of PCMS units.

OHIO DEPARTMENT OF TRANSPORTATION

DATE 2/82

CLOSING ONE LANE OF A FOUR LANE DIVIDED HIGHWAY

BRDG. DEF-15-1288,1338
DEF-18-2911, 66-0735

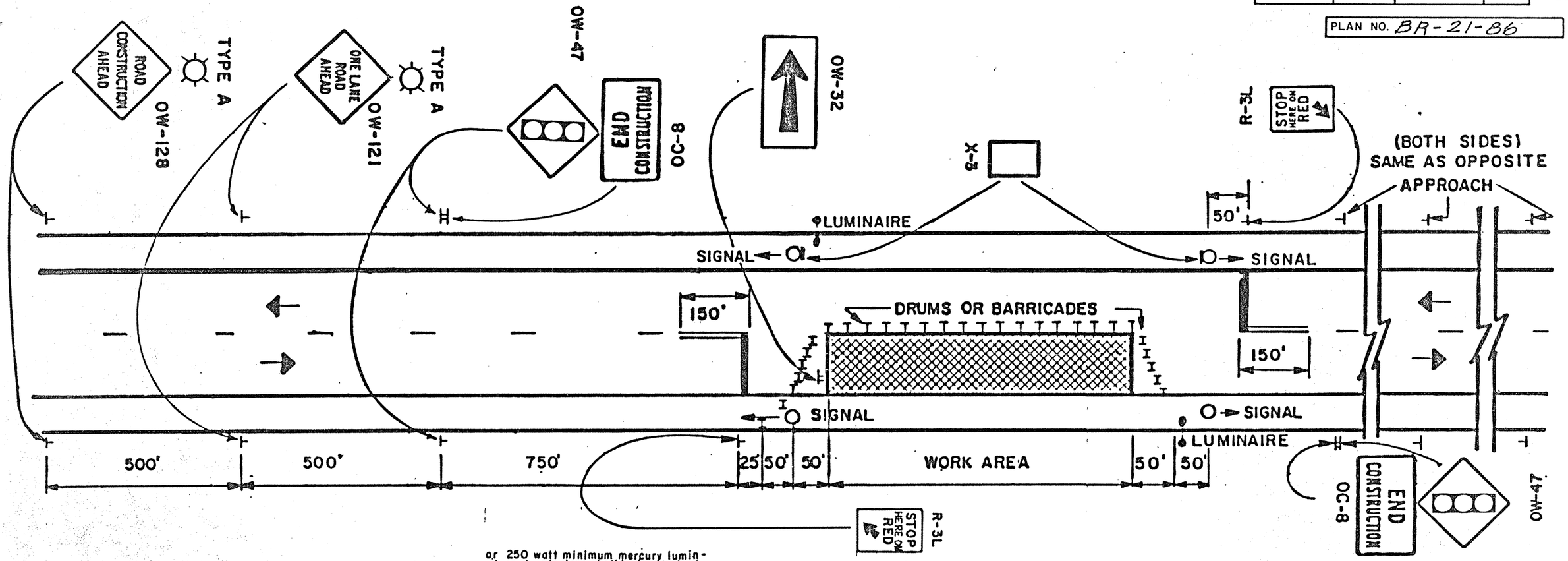
Rev. EEF 9/84

7I-1a

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

11/13

PLAN NO. BR-21-86



GENERAL NOTES:

1. The maximum length of work area for one way traffic signal control is determined by the capacity required to handle the peak hour demand. Practical maximum length is 400 feet. Signal timing changes shall be approved by the Engineer.
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 drums or barricades 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 expansible three dial units and twelve circuits for pretimed controllers. Used equipment meeting current ODOT Specifications is acceptable.

   Conflict monitors shall be furnished at all locations unless an electromechanical pretimed controller with cam shaft is provided.
10. When the signal is changed to a flash condition either manually or automatically, red shall be flashed to both approaches.

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING
I LANE OF A 2 LANE
HIGHWAY

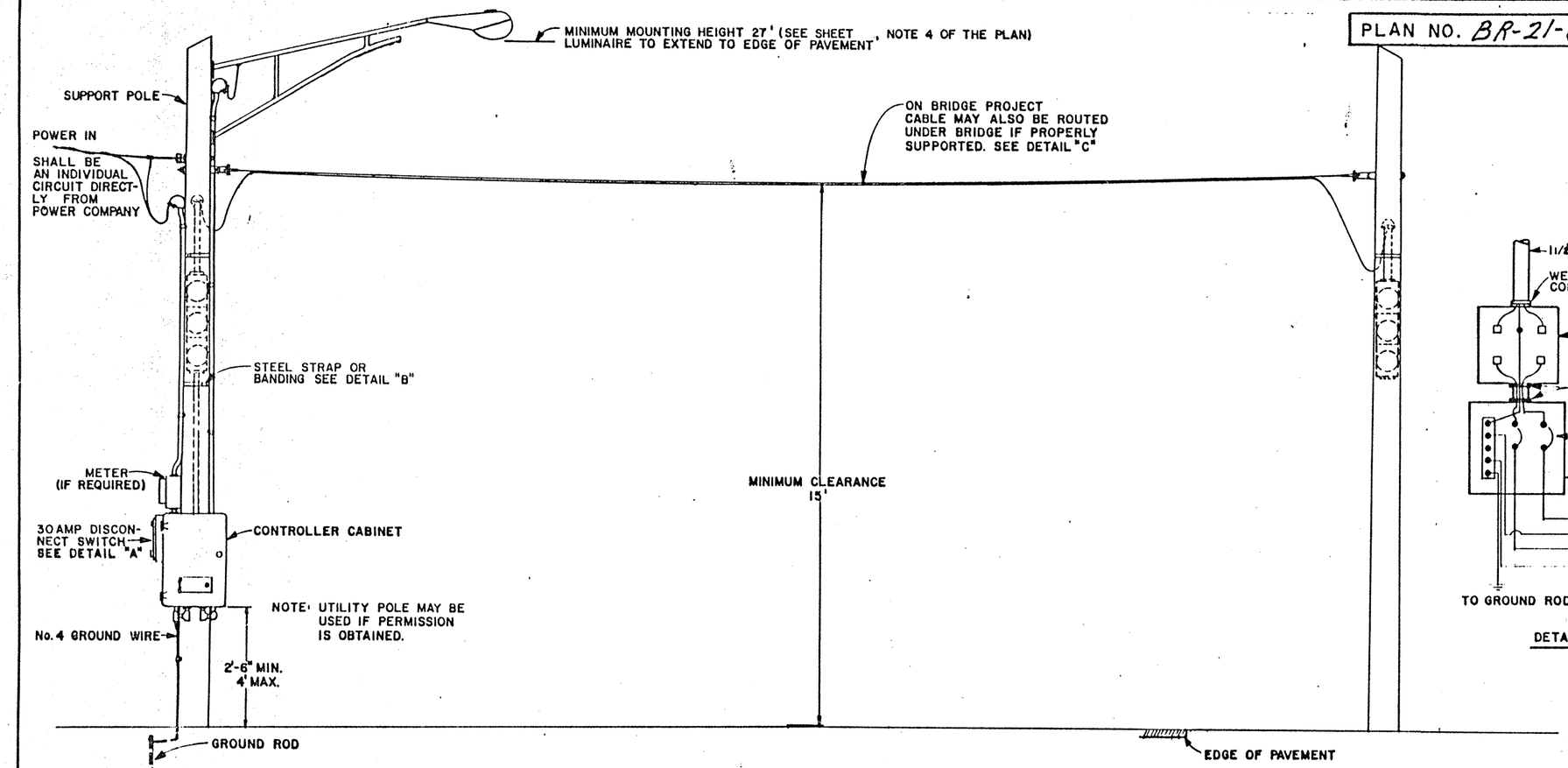
DATE
12/82
3/84
4/85

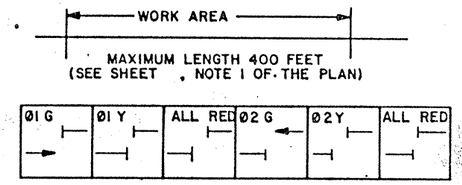
BRDG. DEF-15-1288 & 1338, DEF-18-2911, DEF-66-0735

7G-2A

PLAN NO. BR-21-86	FED. RD. DIVISION	STATE	PROJECT	
	5	OHIO		

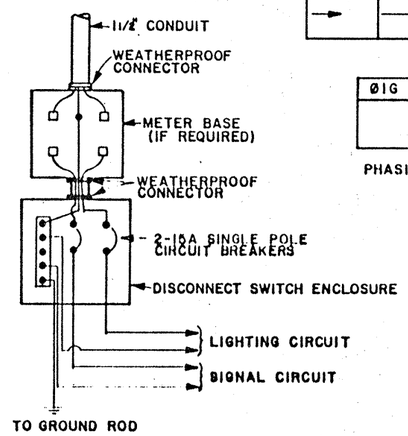
12/13



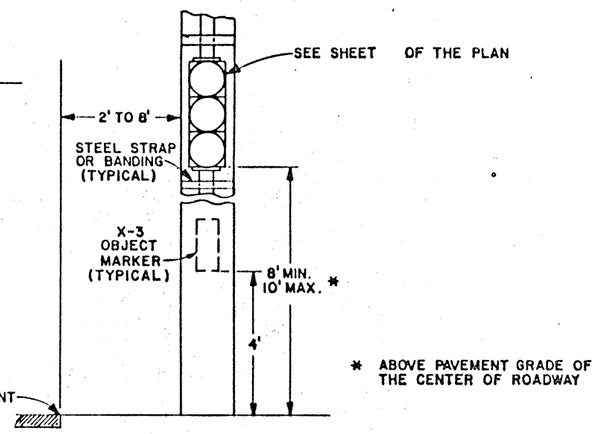


Ø1G	Ø1Y	ALL RED	Ø2G	Ø2Y	ALL RED

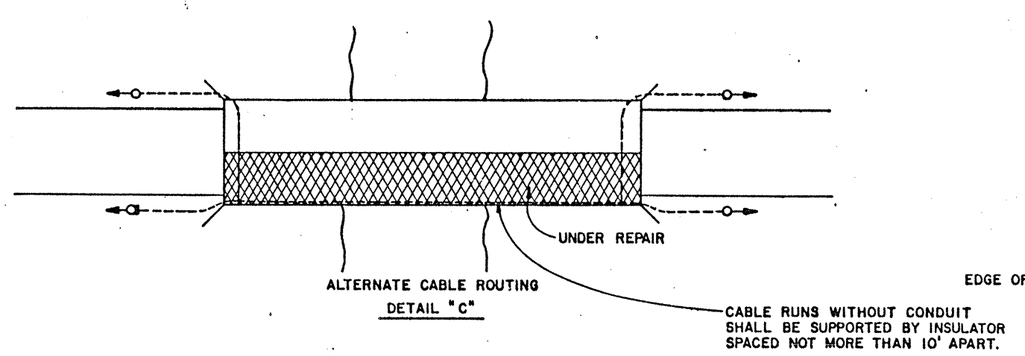
PHASING AND INITIAL TIMING SETTINGS



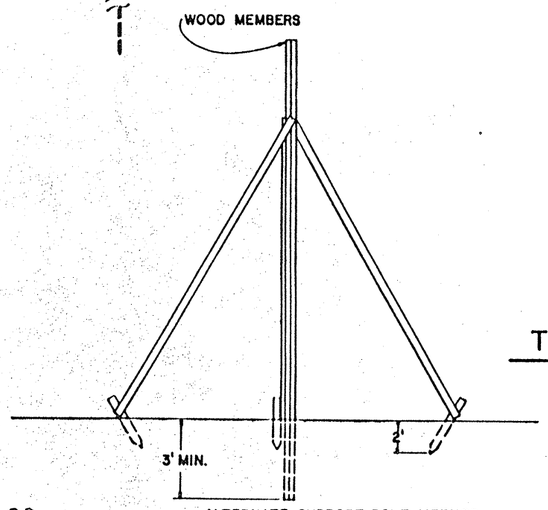
DETAIL "A"



DETAIL "B"



DETAIL "C"



ALTERNATE SUPPORT POLE METHOD

TYPICAL SERVICE, LUMINAIRE, SIGNAL HEAD AND CONTROLLER CABINET INSTALLATION

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING
I LANE OF A 2 LANE
HIGHWAY (B)

DATE 4/85

BRDG. DEF-15-1288 & 1338, DEF-18-2911, DEF-66-0735

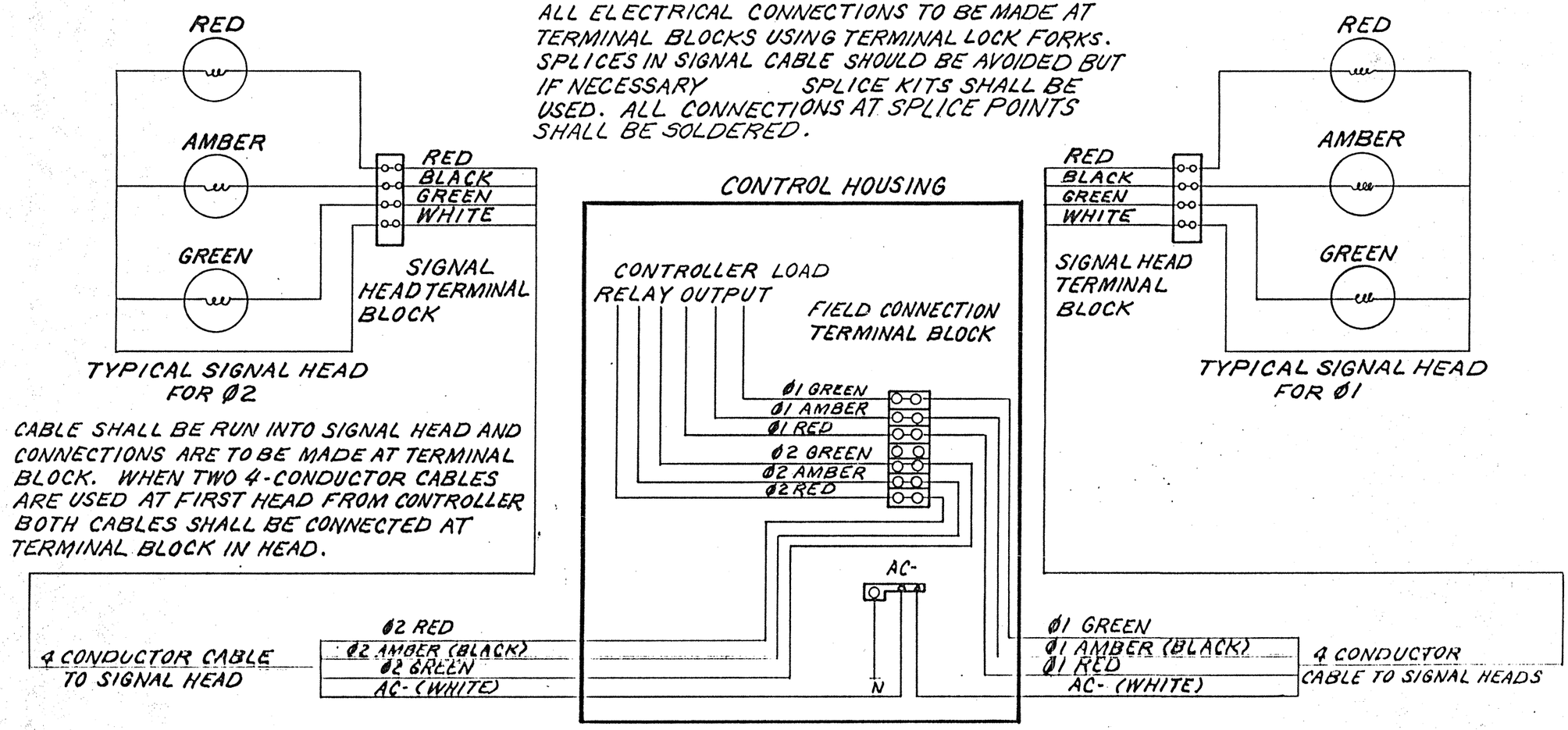
7G-28

FED. RD. DIVISION	STATE	PROJECT	
5	OHIO		

13/13

PLAN NO. BR-21-86

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.



TYPICAL SIGNAL HEAD HOOK-UP

OHIO DEPARTMENT OF TRANSPORTATION

SIGNALIZED CLOSING I LANE OF A 2 LANE HIGHWAY (C)

DATE 4/85

BRDG. DEF-15-1288 & 1338, DEF-18-2911, DEF-66-0735

TG-2C