SPECIAL PROVISIONS

WATERWAY PERMITS CONDITIONS

C-R-S: FRA-70/71-(4R)(6R)

PID: 105523

Date: 07/30/2021

1. Waterway Permits Time Restrictions:

Regional General Permit (RGP), Section A (Linear Transportation Projects) is authorized for FRA-70/71-(4R)(6R), PID: 105523. A copy of the RGP and authorization letters (USACE ID: LRH-2018-01012-SCR for Phase 4R [Part 1] and USACE ID: LRH-2020-00476-SCR Phase 6R [Part 2]) shall be kept at the work site at all times and made available to all contractors and subcontractors. The permit is effective starting: July 30, 2021. The permit expires: October 24, 2024.

The project, as authorized by the USACE, meets all special limitations and conditions of Ohio EPA's Section 401 Water Quality Certification of the RGP. A Section 408 authorization was also issued for this project on July 2, 2021. All Section 401 and 408 conditions are included as part of the Section 404 RGP.

For authorized work in aquatic resources (including streams, wetlands, captured streams, lakes, ponds), the Department will consider the Contractor's submission of a reauthorization to the waterway permit expiration date based on project constraints. If more than one permit is authorized for the project, then all permits become invalid once the first permit expires. In order for the request to be considered, the Contractor must submit a justification to the Engineer at least 90 days prior to the waterway permit expiration date. The Engineer will submit the request for a time extension to the Ohio Department of Transportation, Office of Environmental Services, Waterway Permits Unit (ODOT-OES-WPU) for consideration and coordination with the U.S. Army Corps of Engineers (USACE), Ohio Environmental Protection Agency (OEPA), U.S. Coast Guard (USCG), U.S. Fish and Wildlife Service (USFWS), and Ohio Department of Natural Resources (ODNR) as appropriate.

2. Deviations From Permitted Construction Activities:

No deviation from the requirements for work in aquatic resources depicted in the plans, Special Provisions, and/or Working Drawings may be made unless a modification has been submitted to ODOT-OES-WPU and approved by the appropriate agencies (i.e., USACE, OEPA, USCG, ODNR, and USFWS).

NOTE: Plan sheets submitted with the Pre-Construction Notification were approved by the USACE in accordance with RGP Section A (Linear Transportation Projects) and are included in these Special Provisions.

For emergency situations resulting in unanticipated impacts to aquatic resources, provide notification (verbal or written) to the Engineer as soon as possible following discovery of the situation. Written notification to the Engineer and notification to the ODOT-OES-WPU (614-466-2159) must be made within 24 hours.

For non-emergency situations, notify the Engineer in writing for submission to the ODOT-OES-WPU (614-466-2159) for consideration and coordination with the appropriate agencies. Notification must be made at least 90 days prior to planned, non-permitted activities. Consideration of the requested deviation is at the discretion of the Director and must be coordinated with the appropriate regulatory agencies.

3. In-Stream Work Restrictions:

Work in the following aquatic resources is further restricted as follows:

Stream Name /Description	Location	Work restriction dates* (No in-stream work permitted)

Scioto River	STA 5052+00 to STA 5059+50 (4R)	None
Scioto River	STA 251+00 to STA 261+00 (6R)	None

**In-stream work restrictions were waived by ODNR on October 13, 2020 for years 2021-2024*

In-stream work has been defined as the placement and/or removal of fill materials (temporary or permanent) below ordinary high water of a stream. Examples of "fill" include, but are not limited to: bridge piers, abutments, culverts, rock channel protection, scour protection, and temporary access fills.

Fills placed within a stream identified in the above table (outside of the work restriction dates) can continue to be worked from during the work restriction dates, but cannot be expanded, removed, or otherwise modified (below ordinary high water) until once again outside of the work restriction dates.

4. Materials:

Materials utilized in or adjacent to aquatic resources for temporary or permanent fill or bank protection shall consist of suitable material free from toxic contaminants in other than trace quantities. Asphalt products are specifically excluded for use as fill. Chromated Copper Arsenate (CCA), creosote, and other pressure treated lumber shall not be used in structures that are placed in aquatic resources.

5. Cultural Resources:

Per CMS 107.10, if archeological sites, historical sites, or human remains are discovered, cease all work in the immediate area and notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-Cultural Resource Section at 614-466-2159. In the event of human remains are identified by OES-Cultural Resources Section, the Engineer shall also contact the Franklin County Sheriff's Office at 614-525-3333.

6. Aquatic Resource Demarcation:

The tables attached (Table A and Table B) include detailed fill quantities authorized within the aquatic resources. Aquatic resources not authorized for impact by these Special Provisions shall be demarcated in the field as per SS 832 prior to site disturbance. The fence shall remain in place and be maintained throughout the construction process. Following the completion of the project, the fence and posts shall be removed.

7. Spill containment:

Provide and Maintain an Oil Spill Kit with a minimum capacity of 65 gallons. The Spill Kit shall contain:

- 6 - 3 in. X 8 ft. Oil only socks
- 4 - 18 in. X18 in. Oil only pillows
- 2 - 5 in. X 10ft. Booms
- 50 - 16in. X 20 in. Oil only pads
- 10- Disposable Bags
- 1 - 65 Gallon drum with lid
- 25 pounds of Granular Oil Absorbent

The Oil Spill Kit shall be located within 150 feet of any equipment working in a stream or wetland. The oil Spill Kit shall be maintained for the life of the contract. Any materials utilized during the project

will be replaced within 48 hours. All costs associated with furnishing and maintaining the above referenced spill containment kit is incidental to work.

8. Blasting:

State law requires notification to the Ohio Department of Natural Resources should blasting be required within or near stream channels (See ORC 1533.58 & CMS 107.09). Notify the Engineer, in writing, a minimum of 30 days in advance of blasting, for submission to ODOT-OES-WPU (614-466-2159) for coordination with ODNR.

9. Project Inspection:

Inspection of Work may include inspection by representatives of other government agencies or railroad corporations that pay a portion of the cost of the Work or regulate the Work through State and Federal law. Comments from the representatives of these agencies shall be directed to the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-WPU at 614-466-2159.

10. Temporary Access Fills:

Definitions:

Hydraulic Opening
The cross-sectional area allowing an unimpeded discharge equal to twice the highest monthly flow without producing a rise in the backwater above the Ordinary High Water Mark (OHWM).

Standard Temporary Discharge
Discharge equal to twice the *highest monthly flow* without producing a rise in the backwater above the OHWM. The U.S. Geologic Service publication "Techniques for estimating Selected Streamflow Characteristics of Rural Unregulated Streams in Ohio" provides equations that estimate monthly flow for Ohio Waterways These flows are also available in a web application by USGS StreamStats, (https://water.usgs.gov/osw/streamstats/ohio.html). The highest monthly flow is the highest monthly mean discharge occurring in a 12-month period from January to December.

Average Monthly Flow
The average monthly flow represents the estimated "normal" flow.

Temporary Access Fills (TAFs)
Include, but are not limited to, dewatering fills, causeways, cofferdams, access pads, temporary bridges, etc. below the OHWM.

Requirements
21 calendar days prior to the initiation of any in-stream work, provide the Engineer with Working Drawings that include:

- Plan view drawing (50 scale or less) showing the location of all TAFs proposed for use on the project
- Scaled cross section and profile drawing showing the OHWM and the proposed hydraulic opening.

- Identify the minimum diameter size, placement location and thickness of non-erodible Dumped Rock Fill material on the plan and profile.
- Calculations analyzing the hydraulic impacts of the TAF on the waterway. Include in the calculations an analysis of the hydraulic opening sized adequately to pass the Standard Temporary Discharge without producing a rise in backwater above the OHWM. Include, in the analysis, calculated channel velocities adjacent to the TAF, culvert exit velocities, calculated headwater and tailwater elevations, and any additional appropriate calculations to assess potential impacts to the waterway during normal and anticipated high flow (twice the highest monthly flow) events.
- A description of all temporary material to be placed below the OHWM elevation.
- A description of the installation and staging of all temporary fill over the life of the contract.
- Identify the protection methods and/or structural Best Management Practices for minimizing impacts to the waterway.
- Volume of temporary fill below the OHWM elevation.
- A description of the diversion ditches, equipment, conduits or means for maintaining normal flows in the waterway.
- A description of the removal of all temporary fill and restoration of the channel and all areas impacted by the TAFs.
- A schedule outlining the timing of the placement and removal of all temporary fill.
- Have competent individuals prepare and check the Working Drawings and hydraulic calculations. Provide a cover sheet containing the preparer(s) and checker(s): First Name, Last Name and Initials. The preparer(s) and checker(s) shall not be the same individual. Have an Ohio Registered Engineer review, approve, sign, seal and date the Working Drawings and hydraulic calculations according to ORC 4733 and OAC 4733-35. Include the following statement on the Working Drawings:

  "These Working Drawings were prepared in compliance with the terms of these Special Provisions and all contract documents."

The TAFs shall be designed and constructed in accordance with the plan sheets and associated quantities attached to these Special Provisions.

Do not begin in-stream work until the Engineer has accepted the Working Drawings and hydraulic calculations.

The design and construction of the Contractor's TAF must minimize impacts to water bodies, stream banks, stream beds, and riparian zones to the maximum extent practicable.

Fording of waterways and other aquatic resources is prohibited.

Construct TAFs in such a manner that will maintain flows, minimize upstream flooding, and avoid overtopping the TAF on a regular basis. ***TAFs shall be designed and constructed so that the hydraulic opening provides capacity for a discharge equal to twice the highest monthly flow without producing a rise in the backwater above the (OHWM)***.

If the Contractor proposes a TAF which does not meet all the requirements of these Special Provisions, the Contractor must submit a request in writing for a modified TAF to the Engineer. The request must include all Working Drawings and hydraulic calculations required by these Special Provisions. The Department makes no guarantee to grant the request. The Contractor's proposed TAF request will be coordinated by OES with the USACE and the OEPA, as appropriate. The time frame allowed for the

coordination of the contractor's proposed TAF will be a minimum of 60 days.

Installation of any temporary fill without appropriate authorization is strictly prohibited. All direct coordination with the USACE and/or OEPA will be performed through OES.

TAFs Construction and Payment

Begin planning and installing causeways and access fills as early in construction as possible to avoid conflicts with these Special Provisions or other environmental commitments that have been included in the construction plans.

TAFs in Streams and Rivers may include, but are not limited to, causeways, cofferdams, access pads, sheet piling, temporary bridges, etc. The Contractor must make every attempt to minimize disturbance to waterbodies, stream banks, stream beds and riparian zones during the construction, maintenance, and removal of the TAF. Construct the TAFs as narrow as practical. Install in-stream conduits parallel to the stream banks. Make the TAFs in shallow areas rather than deep pools where possible. Minimize clearing, grubbing, and excavation of stream banks, and approach sections. Construct the TAFs as to not cause erosion or allow sediment deposits in the waterway.

Prior to the initiation of any in-stream work, establish a monument upstream of the proposed TAF to visually monitor the water elevation in the waterway where the fill is permitted. Maintain the monument throughout the project. Provide a visual mark on the monument that identifies the elevation 1 foot above the OHWM. Ensure that the monument can be read from the bank of the waterway. Have this elevation set and certified by an Ohio Registered Surveyor. All costs associated with furnishing and maintaining the above referenced monument is incidental to the work.

Should the surface water elevation exceed the elevation 1 foot above OHWM, the Department will compensate the Contractor for repair of any resulting damage to the TAF up to the elevation of 1 foot above the OHWM, except as noted. The Department will recognize this event as an excusable, non-compensable delay in accordance with Section 108.06 B. of the Construction & Materials Specifications.

Follow the requirements in Item 502 for Structures for Maintaining Traffic and in Item 503 for Cofferdams and Excavation Bracing and any modifications to these items as shown in the plans. The Department will not pay for repair and maintenance of TAFs associated with Items 502 and 503 as a result of surface water elevation exceeding 1 foot above the OHWM. Compensation for damages associated with waterway flows will be provided as described in Items 502 and 503.

Construct the TAFs, not including Items 502 and 503, to a water elevation at least 1 foot (0.3 m) above the OHWM. If more than one-third the width of the stream is filled, then use culvert pipes to allow the movement of aquatic life. Ensure that any ponding of water behind the TAF will not damage property, flood roadways, or threaten human health and safety.

The following minimum requirements apply to TAFs where culverts are used:

A. Furnish culverts on the existing stream bottom.
B. Avoid a drop in water elevation at the downstream end of the culvert that would result in an adverse impact to the waterway.
C. Furnish a sufficient number of culverts in addition to stream openings to provide a discharge equal to twice the highest monthly flow without producing a rise in the backwater above the OHWM.
D. Furnish culverts with a minimum diameter of 18 inches (0.5 m).

All TAFs must be constructed of suitable materials. Causeways and access fills must be encapsulated with clean, non-erodible, nontoxic Dumped Rock Fill, Type A, B, C, or D, meeting the requirements of C&MS 703.19.B. Utilize appropriately sized Dumped Rock Fill determined by the Contractor's engineer for encapsulating the sides of the TAF. Encapsulate all sides of the TAF with the non-erodible material.

For causeways, contractors may use clean aggregate meeting C&MS 703.01 Size Number 1 and 2 for creating a working surface above the OHWM. Extend the non-erodible encapsulating material to at least the elevation of the top of the working surface. Extend clean aggregate up the slope from the original stream bank for 50 feet (10 m) to remove erodible material and prevent tracking from equipment onto the TAF.

When the work requiring TAF is complete, all portions of the TAF (including all rock and culverts) will be removed in its entirety. Do not dispose of TAF material in other aquatic resources or where erosion into another aquatic resource is possible. The stream bottom affected by the TAFs will be restored to its pre-construction elevations. The TAFs will not be paid as a separate item but will be included by the Contractor as part of the total project cost.

Unless specific TAF compensation is included in the plans, all environmental protection and control associated with the authorized activities, are incidental to the work within the boundaries of the aquatic resources.

11. Excavation Activities:

Excavated material will be placed at an upland site and disposed of in such a manner that sediment and runoff to streams and other aquatic resources is controlled and minimized. Additionally, no more than incidental fallback into aquatic resources is permitted during the excavation process. If any changes to the proposed work are deemed necessary, notify the Engineer who will immediately contact the ODOT-District Environmental Coordinator and ODOT-OES-WPU at 614-466-2159

12. Demolition Debris:

The intentional discharge of demolition debris from any structure (including but not limited to bridges, culverts, abutments, wing walls, piers) is not authorized for this project. If any demolition debris inadvertently falls into aquatic resources, it must be removed immediately. Notify the Engineer immediately in writing of any inadvertent fill discharged into aquatic resources. The Engineer will immediately contact ODOT-OES-WPU at 614-466-2159 if any unintentional discharge occurs.

13. Construction Completion Certification:

Upon completion of the work, notify the Engineer. The USACE Construction Completion Certifications must be completed and signed by the Engineer then provided via US mail or email to:

Waterway Permits Program Manager
ODOT - Office of Environmental Services
1980 West Broad Street, Mail Stop 4170
Columbus, Ohio 43223
Adrienne.Earley@dot.ohio.gov

A copy of each certification has been attached to these Special Provisions.

14. United States Coast Guard Requirements:

Notification to the USCG is required no less than 30 days prior to the start of construction.

If any equipment will need to be placed in the waterway or any river closures are necessary,

coordination with the USCG a minimum of 90 days in advance of these activities.

Any oil or oil-based product spills into the Scioto River during construction must be promptly reported to the USCG by calling 1-800-424-8802.

As-built drawings of all bridges over the Scioto River are required within 30 days of project completion. Drawings must be 8.5x11 inches and contain low steel elevations at the piers in the river and center of the channel.

The contractor shall direct all coordination with the USCG to Rob McCaskey at Rob.E.McCaskey@uscg.mil (314)269-2481, copy the Engineer and the Office of Environmental Services.

Version: July 2020

TABLE A. DISCHARGE AND FILL QUANTITIES

STREAMS						Permanent Fill Within/Below OHWM																			
Aquatic Resource ID	Station	Description of Impacts/Activities Within OHWM	Total Length Within Project Area	Stream Width (LF)	Stream Depth (LF)	Proposed Concrete (Includes Culvert, Piers, Walls, Abutments, etc.)			Proposed RCP			Proposed Earthen, Granular, or Embankment Fill			Proposed Other (Steel, Etc.)			Total Permanent Fill Within OHWM			Total Temporary Fill Within OHWM			TOTAL IMPACT (Upstream to Downstream)	TOTAL NEW IMPACT (Total Impact Minus Pre-Existing Impacts)
						Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Length (LF)
Scioto River	5052-5059+50	Temp access for new bridge construction and new piers	1,256	535	10	68.0	0.007	108.300	-	-	-	-	-	-	-	-	-	68.000	0.007	108.300	195.0	1.492	27,000.000	195.000	195.0
					SUM:	68.0	0.007	108.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	68.0	0.007	108.3	195.0	1.5	27,000.0	195.0	195.0

LF = linear feet; AC = acres; CY = cubic yards; RCP = rock channel protection or the like (specify if different, ie. concrete block matting); NA = Not Applicable

TABLE B: DETAILED STREAM IMPACT BREAKDOWN

Streams						Permanent Fill Within/Below OHWM																			
Aquatic Resource ID	Station	Description of Impacts/ Activities Within OHWM	Total Length in Project Area (LF)	Stream Width (LF)	Stream Depth (LF)	Proposed Concrete (Includes Culverts, Piers, Walls, Abutments, etc.)			Proposed RCP			Proposed Earthen, Granular, or Embankment Fill			Proposed Other (Steel, Etc.)			Total Permanent Fill Within OHWM			Total Temporary Fill Within OHWM			TOTAL IMPACT (Upstream to Downstream)	TOTAL NEW IMPACT (Total Impact Minus Pre-Existing Impacts)
						Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Length (LF)	
Scioto River	251+00 to 261+00	Temp access for new bridge construction and new piers	250	875	13	68	0.0625	350	0	0	0	0	0	0	0	0	0	68	0.0625	350	250	2.687	25,500	250	250

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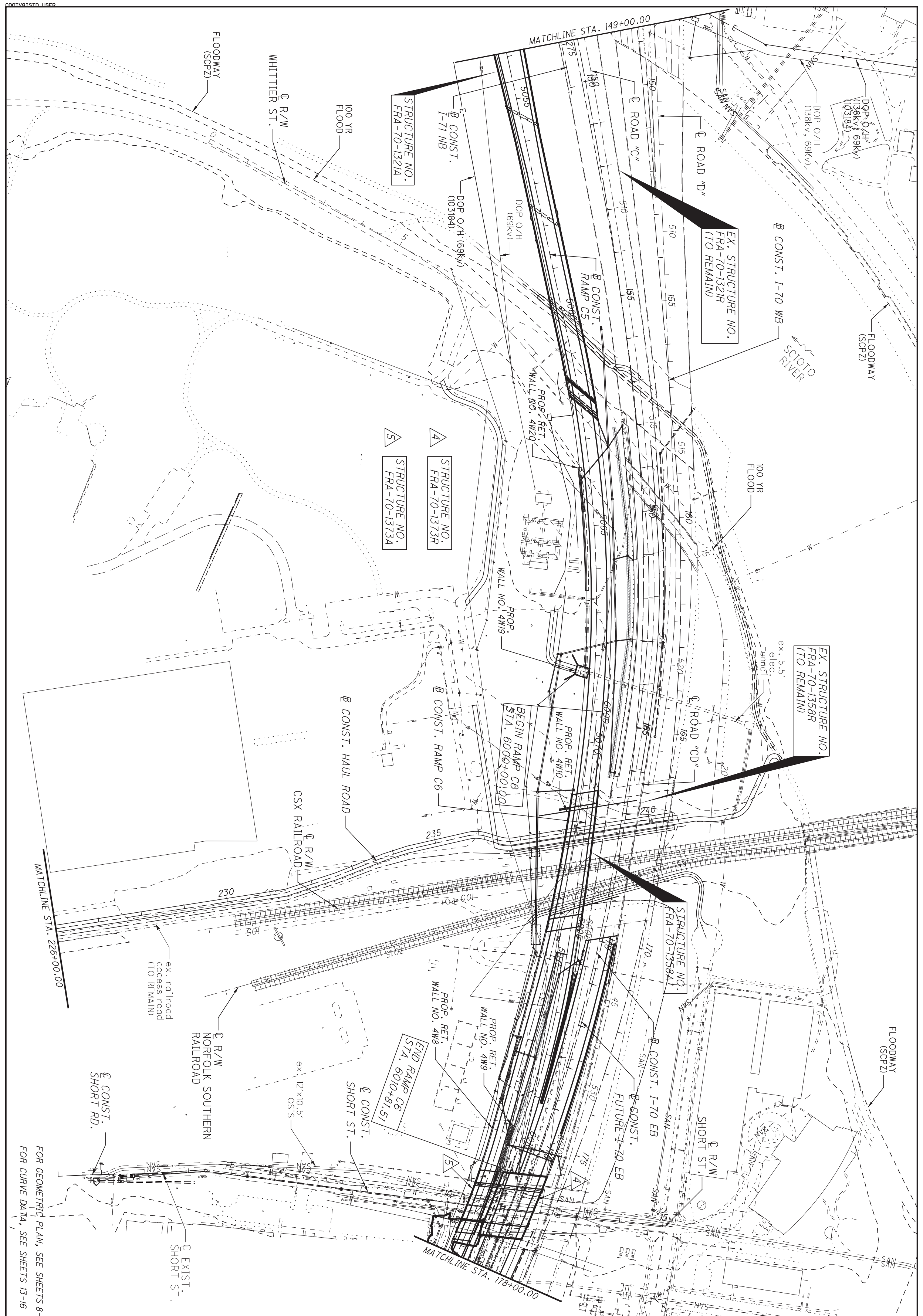

5 / 1675	FRA-70/71-12.68/14.86	SCHEMATIC PLAN	CALCULATED ATR / CHECKED CWL	HORIZONTAL SCALE IN FEET

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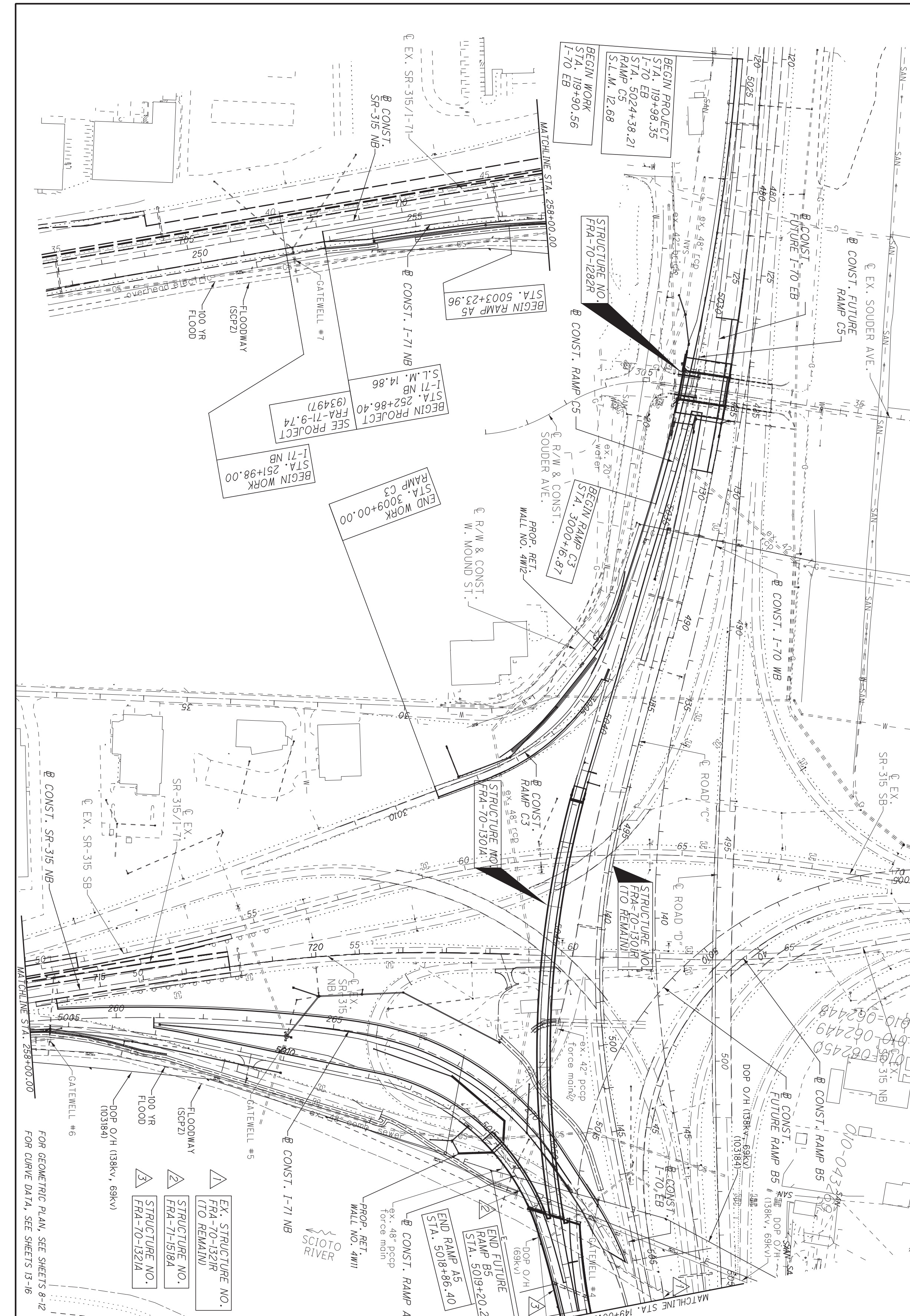

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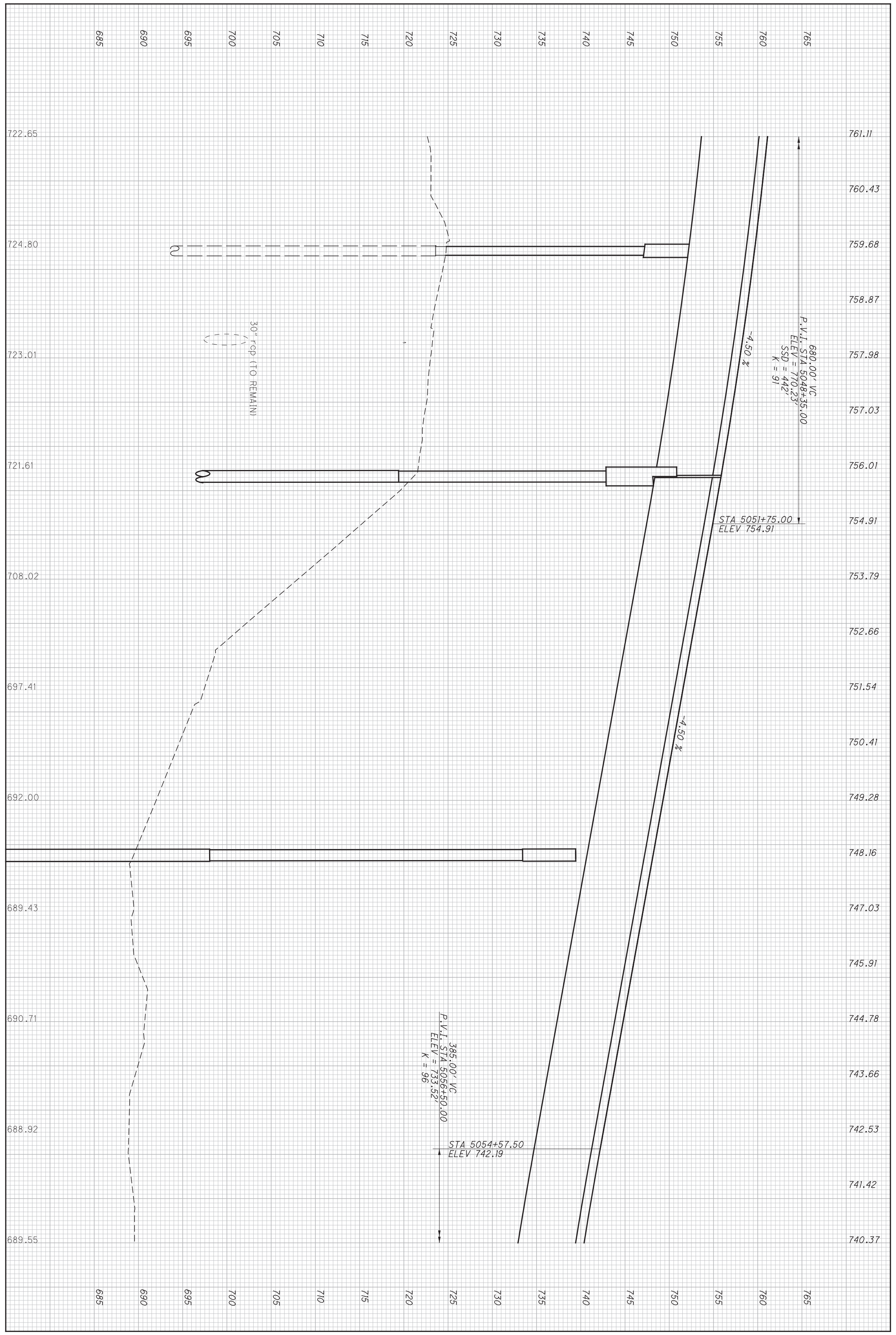

FRA-70/71-12.68/14.86

PROFILE - RAMP C5
STA. 5050+00.00 TO STA. 5055+00.00

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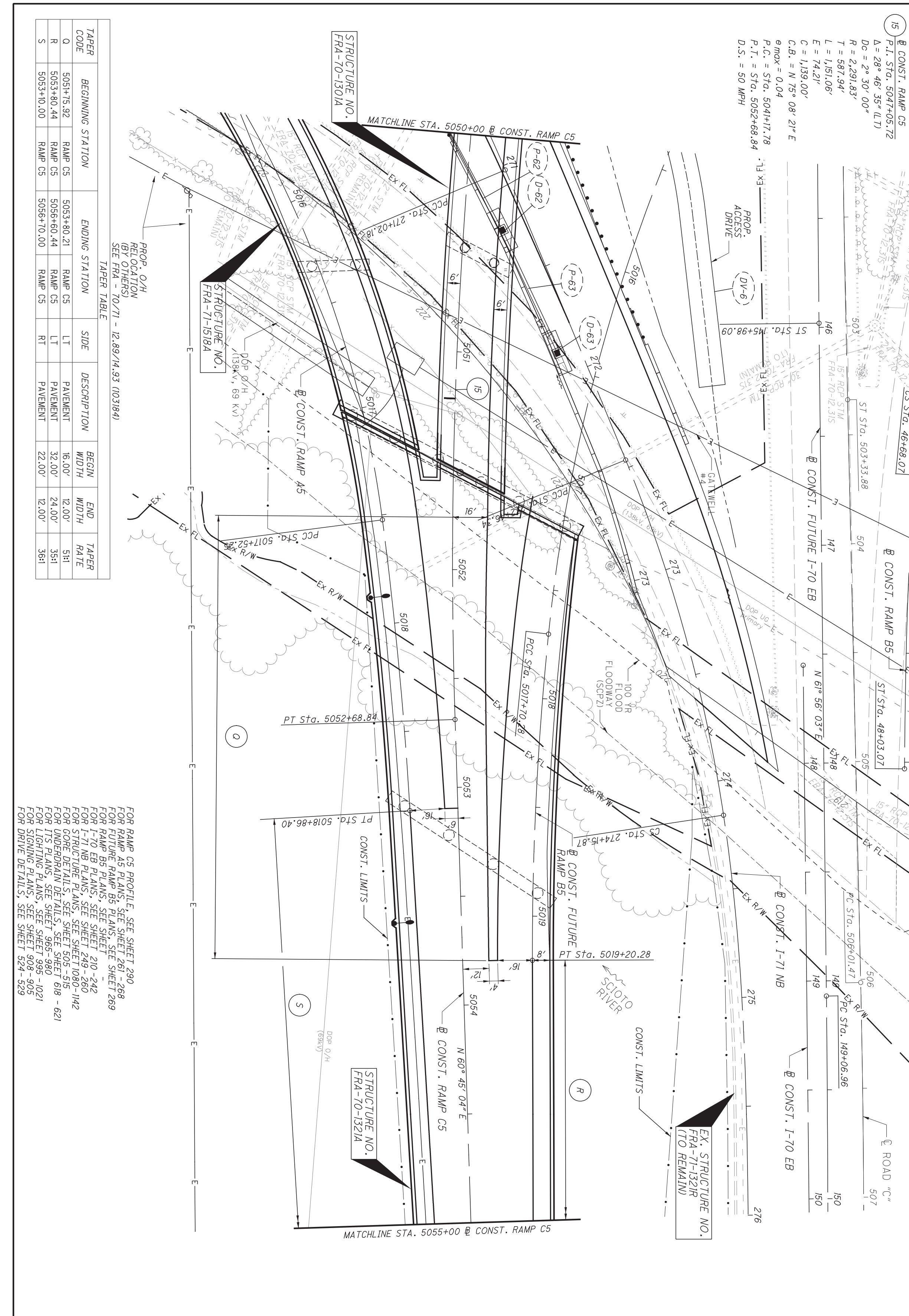

FOR RAMP C5 PROFILE, SEE SHEET 290
FOR RAMP A5 PLANS, SEE SHEET 261 - 268
FOR FUTURE RAMP B5 PLANS, SEE SHEET 269
FOR RAMP B5 PLANS, SEE SHEET -
FOR I-70 EB PLANS, SEE SHEET 210 - 242
FOR I-71 NB PLANS, SEE SHEET 249 - 260
FOR STRUCTURE PLANS, SEE SHEET 1080 - 1142
FOR GORE DETAILS, SEE SHEET 505 - 515
FOR UNDERDRAIN DETAILS, SEE SHEET 618 - 621
FOR ITS PLANS, SEE SHEET 965 - 980
FOR LIGHTING PLANS, SEE SHEET 995 - 1021
FOR SIGNING PLANS, SEE SHEET 908 - 905
FOR DRIVE DETAILS, SEE SHEET 524 - 529

TAPER TABLE

TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
O	5051+75.92	RAMP C5	5053+80.21	RAMP C5	LT	PAVEMENT	16.00'	12.00'	5:1
R	5053+80.44	RAMP C5	5056+60.44	RAMP C5	LT	PAVEMENT	32.00'	24.00'	35:1
S	5053+10.00	RAMP C5	5056+70.00	RAMP C5	RT	PAVEMENT	22.00'	12.00'	36:1

FRA-70/71-12.68/14.86

PLAN - RAMP C5
STA. 5050+00.00 TO STA. 5055+00.00

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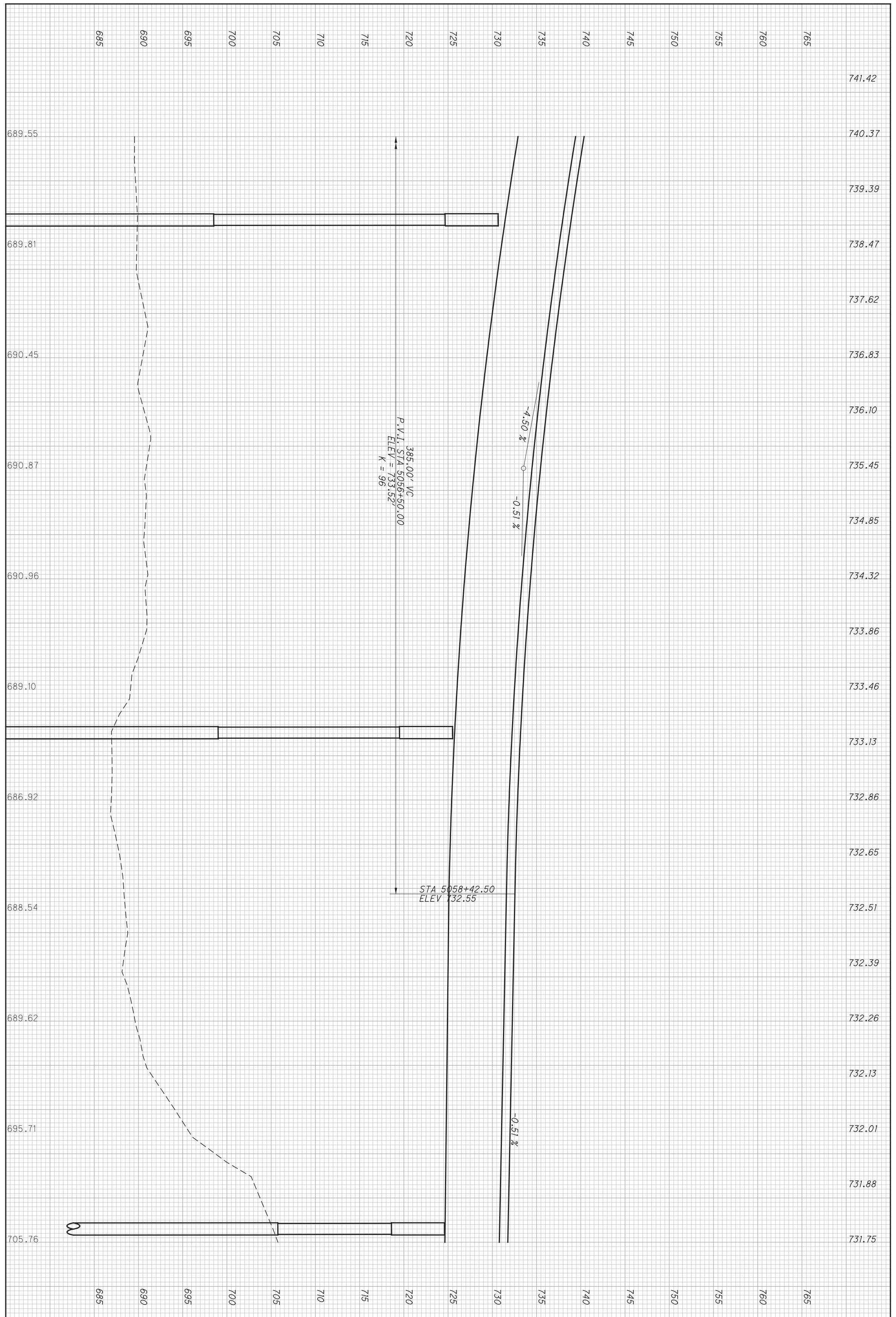

292 / 1675 | FRA-70/71-12.68/14.86

PROFILE - RAMP C5
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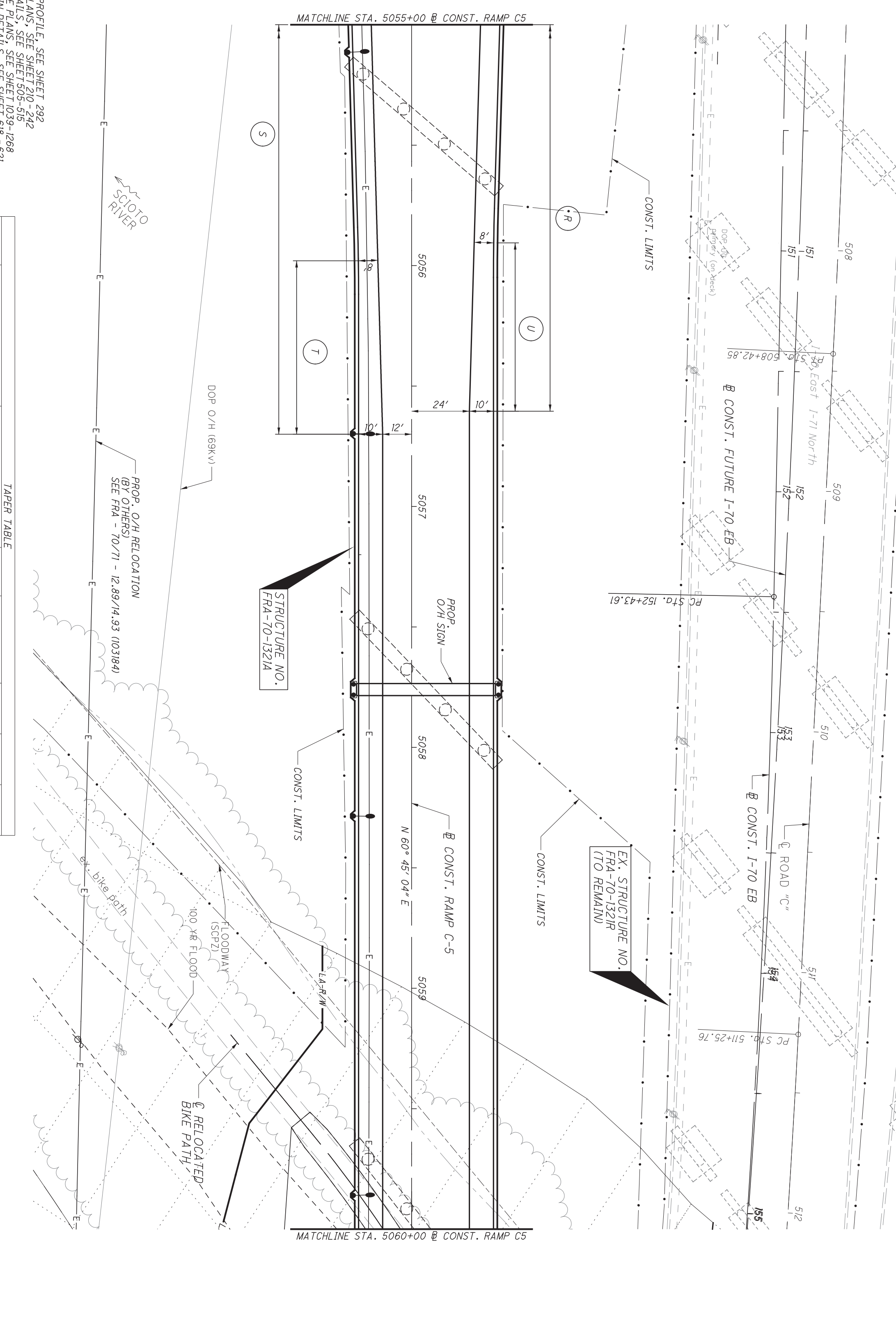
FOR RAMP C5 PROFILE, SEE SHEET 292
FOR I-70 EB PLANS, SEE SHEET 210-242
FOR GORE DETAILS, SEE SHEET 505-515
FOR STRUCTURE PLANS, SEE SHEET 1039-1268
FOR UNDERDRAIN DETAILS, SEE SHEET 618 - 621
FOR ITS PLANS, SEE SHEET 965-980
FOR LIGHTING PLANS, SEE SHEET 995-1021
FOR SIGNING PLANS, SEE SHEET 908-905
FOR RELOCATED BIKE PATH PLANS, SEE SHEET 533-542

TAPER TABLE

TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
R	5053+80.44	RAMP C5	5056+60.44	RAMP C5	LT	PAVEMENT	32.00'	24.00'	35:1
S	5053+10.00	RAMP C5	5056+70.00	RAMP C5	RT	PAVEMENT	22.00'	12.00'	36:1
T	5055+98.00	RAMP C5	5056+70.00	RAMP C5	RT	SHOULDER	8.00'	10.00'	36:1
U	5055+90.56	RAMP C5	5056+60.44	RAMP C5	LT	SHOULDER	8.00'	10.00'	35:1



291 / 1675 | FRA-70/71-12.68/14.86

PLAN - RAMP C5
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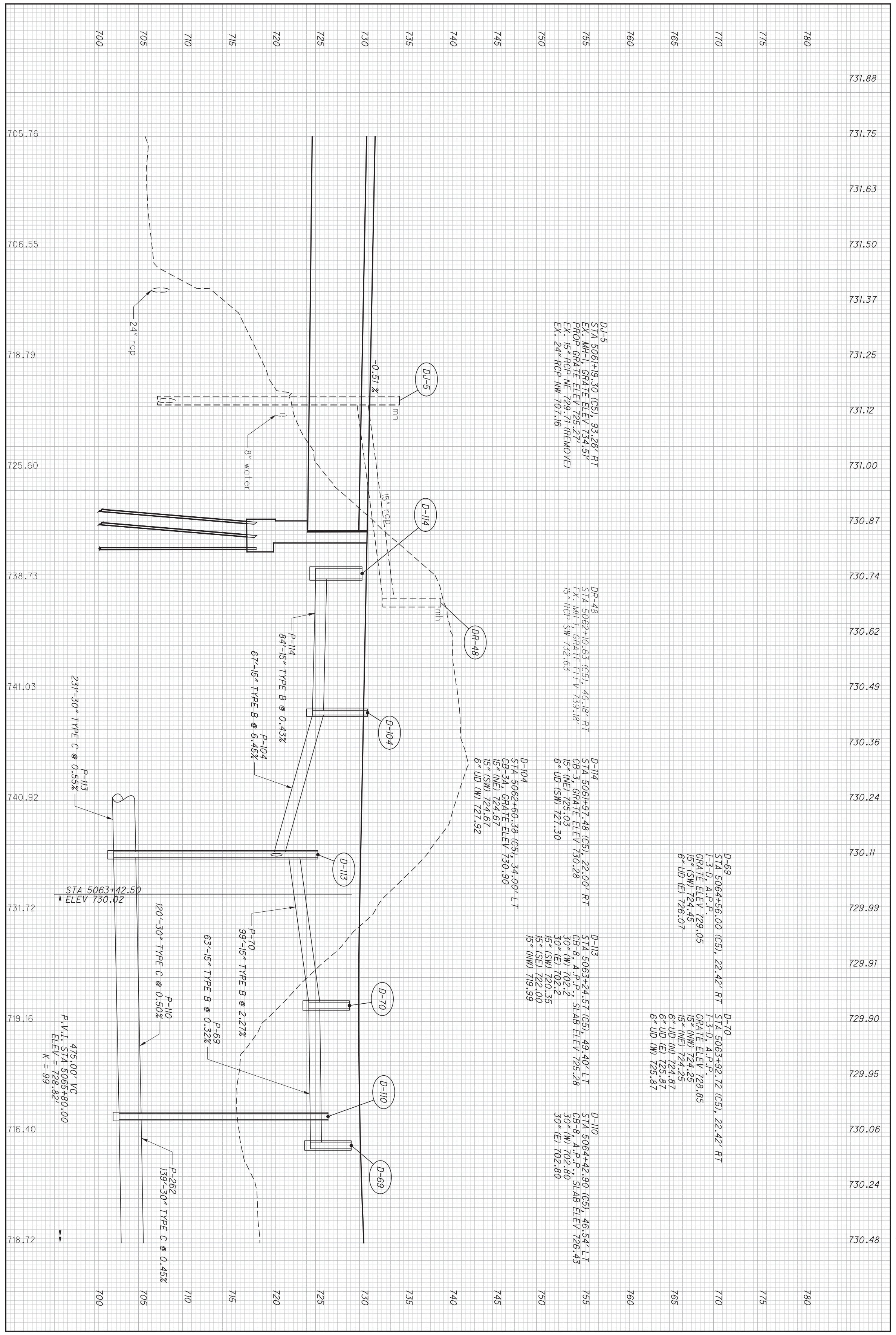
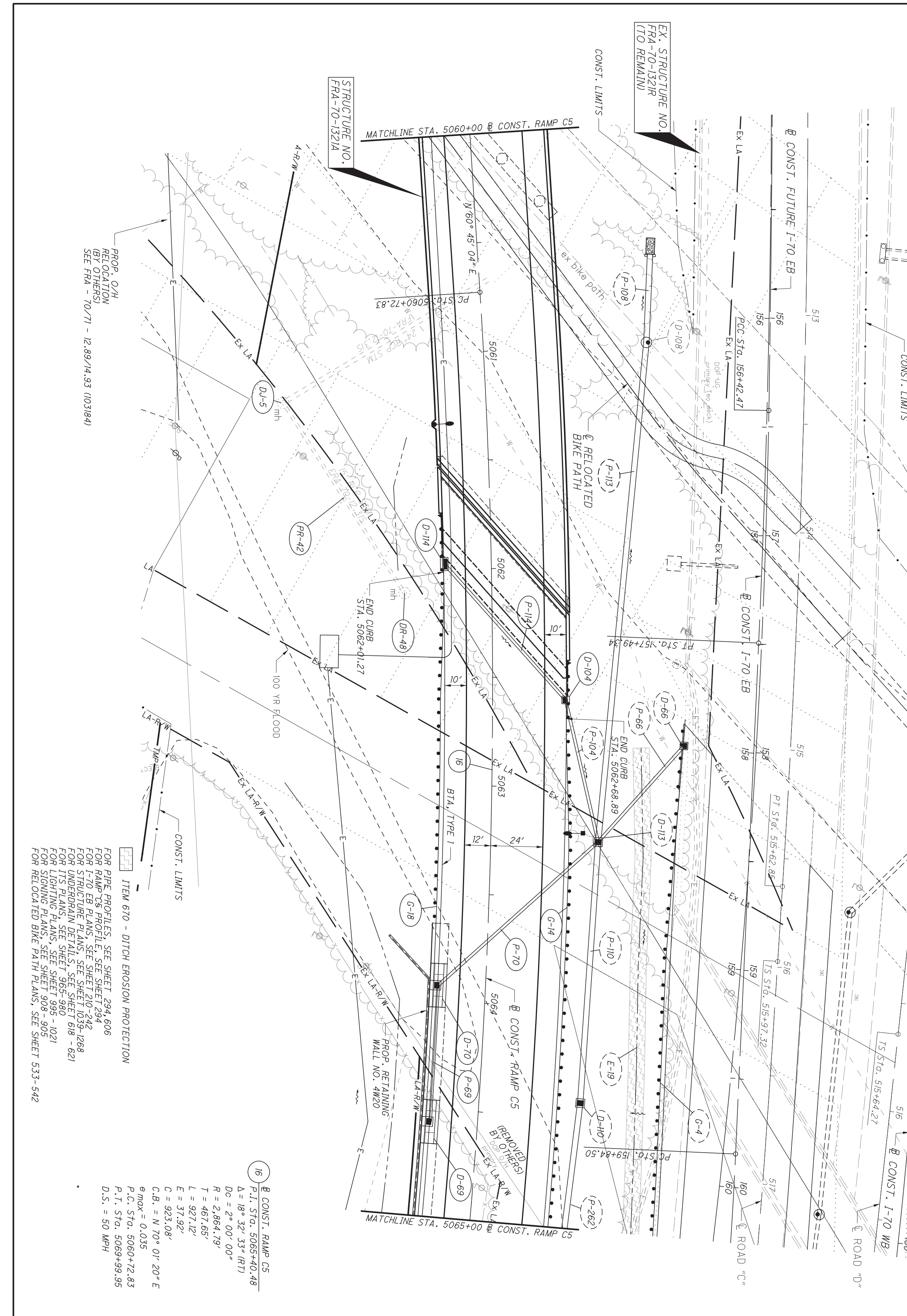
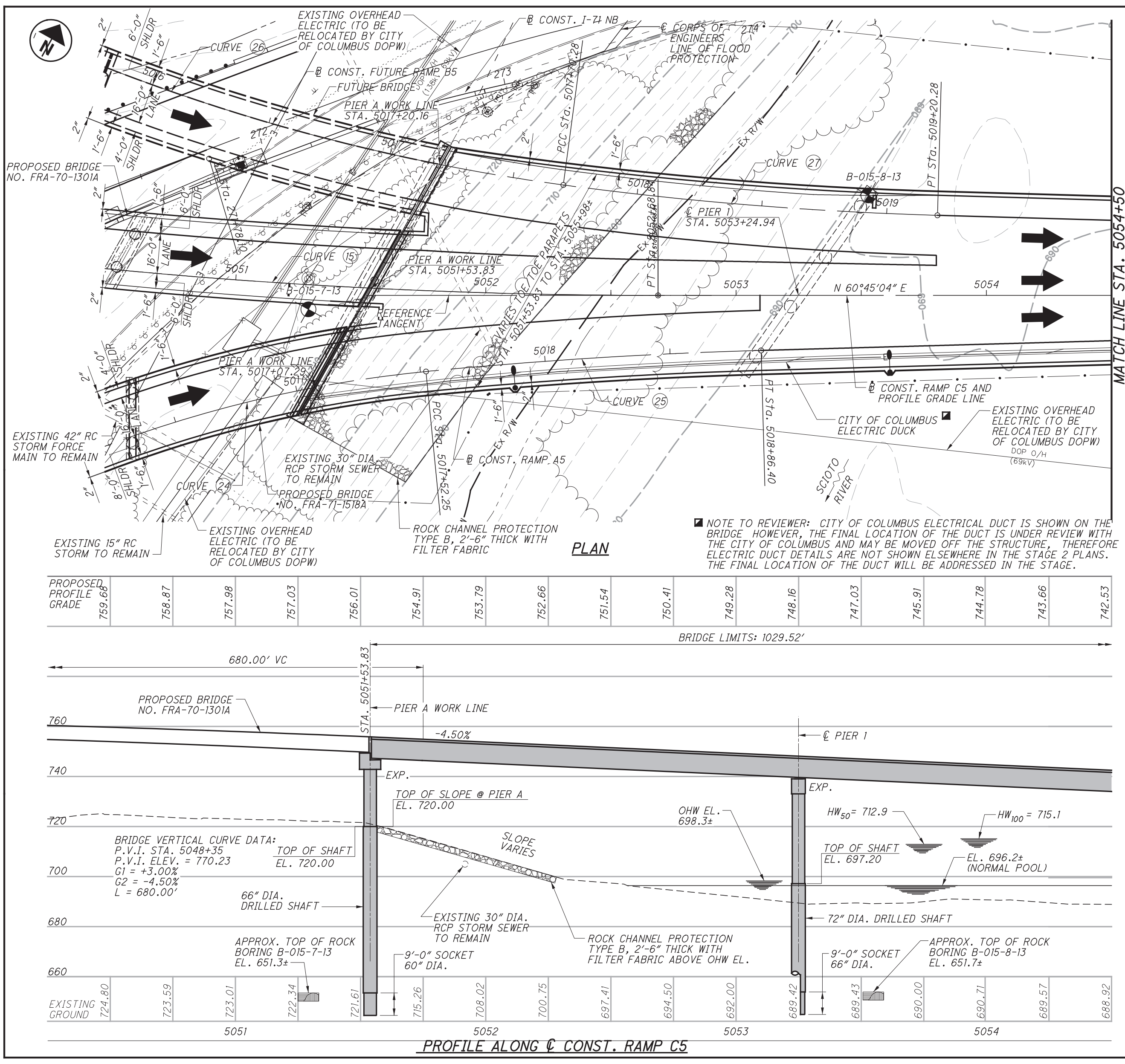
HORIZONTAL SCALE IN FEET



294 / 1675	FRA-70/71-12.68/14.86	PROFILE - RAMP C5 STA. 5060+00.00 TO STA. 5065+00.00	CALCULATED CHECKED



293 / 1675	FRA-70/71-12.68/14.86	PLAN - RAMP C5 STA. 5060+00.00 TO STA. 5065+00.00	CALCULATED CHECKED	HORIZONTAL SCALE IN FEET



BENCHMARK DATA

BM #1 STA.	, ELEV.	, OFFSET	,
BM #2 STA.	, ELEV.	, OFFSET	,
BM #3 STA.	, ELEV.	, OFFSET	,
BM #4 STA.	, ELEV.	, OFFSET	,

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET 17/1675

NOTES

1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
2. SEE SHEET 5/94 FOR GEOMETRIC LAYOUT PLAN.

DESIGN TRAFFIC:
2015 ADT = 17,250 2015 ADTT = 1812
2035 ADT = 17,440 2035 ADTT = 1832
DIRECTIONAL DISTRIBUTION = 100%

LEGEND

PROJECT BORING LOCATION
SEE SHEET 1177/1675 FOR BORING TABLE.
* = MEASURED ALONG THE REFERENCE TANGENT
BRGS. = BEARINGS
EXP. = EXPANSION

HYDRAULIC DATA

DRAINAGE AREA = 1629 SQ. MILES
Q (100) = 75,000 CFS V (100) = 5.67 FT/S
Q (50) = 62,100 CFS V (50) = 5.11 FT/S
STRUCTURE CLEARS THE 50-YEAR DESIGN HW BY 8.88 FEET.

HORIZONTAL CURVE DATA

SEE SHEET 2/94

EXISTING STRUCTURE - NONE

PROPOSED STRUCTURE

TYPE: FIVE SPAN CONTINUOUS HYBRID STEEL PLATE GIRDERS A709 GRADE 50W/HPS 70W WITH COMPOSITE REINFORCED CONCRETE DECK SUPPORTED BY REINFORCED CONCRETE SUBSTRUCTURES

SPANS: 170'-11 7/16", 212'-10 1/2", 231'-10 5/8", 224'-5 1/4" AND 183'-9 7/16" C/C BEARINGS, MEASURED ALONG REFERENCE TANGENT

ROADWAY: VARIES 56'-0" TO 94'-7" TOE/TOE PARAPET

LOADING: HL-93 AND 60 PSF FUTURE WEARING SURFACE

SKEW: 29°14'56" PIER A, 34°57'12" PIER 1, 40°39'27" PIER 2, 46°21'43" PIER 3, 52°03'59" PIER 4, 52°03'59" FRWD. ABUT.

APPROACH SLABS: 30' LONG (AS-1-15)

ALIGNMENT: 2°30' CURVE LEFT, TANGENT AND 2°00' CURVE RIGHT

WEARING SURFACE: 1" MONOLITHIC CONCRETE

SUPERELEVATION: VARIES

COORDINATES: LATITUDE 39°57'05" N
LONGITUDE 83°00'46" W

NOTE:
ALL HORIZONTAL DIMENSIONS ARE MEASURED ALONG ℄ RAMP C5 UNLESS NOTED OTHERWISE.

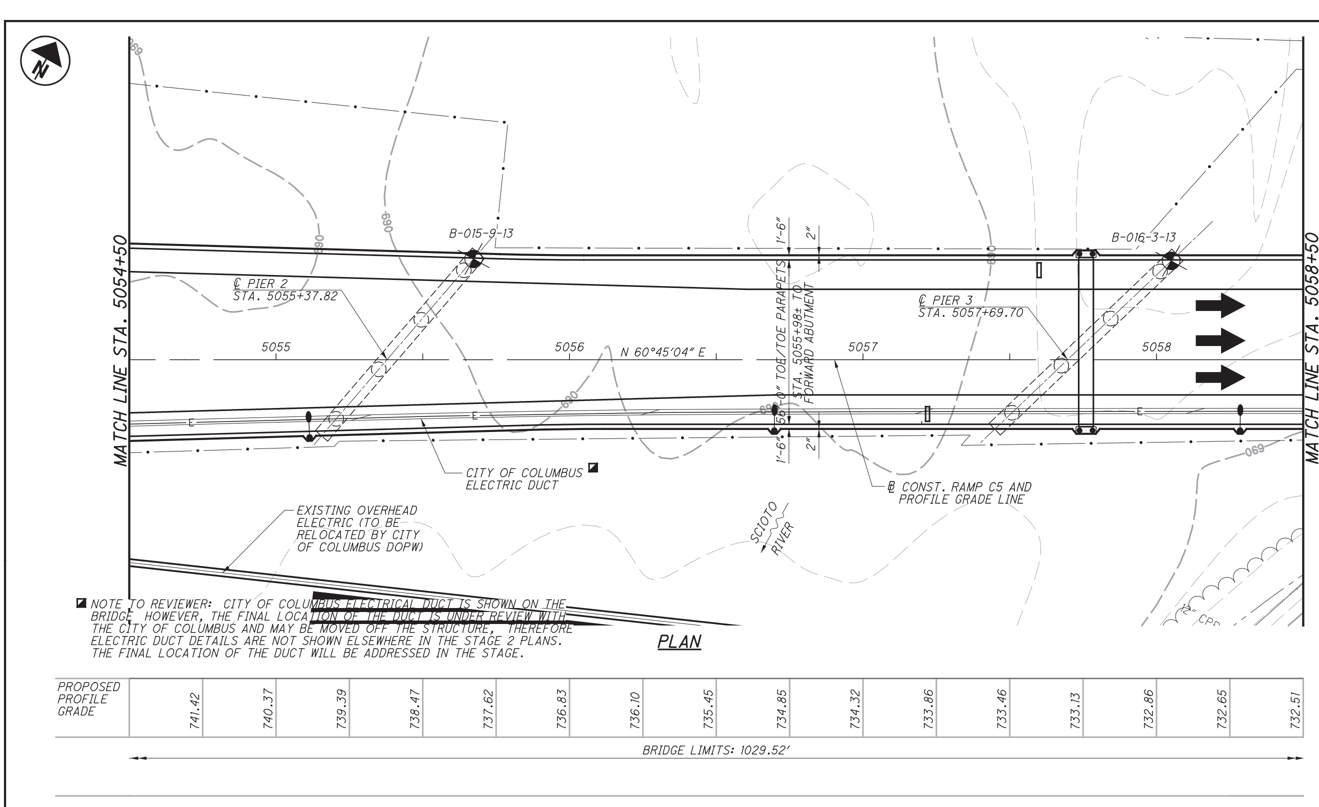
DESIGN AGENCY: GPD GROUP. Glaus, Pyle, Schomer, Burns & DeHaven, Inc. 1801 Watermark Drive, Suite 150, Columbus, Ohio 43215 614.210.0751

DESIGNED DGN | DRAWN RPR | REVIEWED DJC | DATE 7-16-18 | CHECKED TJW | REVISED | STRUCTURE FILE NUMBER 2510015

FRANKLIN COUNTY
STA. 5051+53.83
STA. 5061+83.35

SITE PLAN - 1
BRIDGE NO. FRA-70-1321A
RAMP A5/B5/C5 OVER THE SCIOTO RIVER

FRA-70/71-12.68/14.86
PID No. 105523



HORIZONTAL CURVE DATA

(15) ℄ CONST. RAMP C5
P.I. Sta. 5047+05.72
Δ = 28° 46' 35" (LT)
Dc = 2° 30' 00"
R = 2,291.83'
T = 587.94'
L = 1,151.06'
E = 74.21'
C = 1,139.00'
C.B. = N 75° 08' 21" E
e max = 0.04
P.C. = Sta. 5041+17.78
P.T. = Sta. 5052+68.84
D.S. = 50 MPH

(16) ℄ CONST. RAMP C5
P.I. Sta. 5065+40.48
Δ = 18° 32' 33" (RT)
Dc = 2° 00' 00"
R = 2,864.79'
T = 467.65'
L = 927.12'
E = 37.92'
C = 923.08'
C.B. = N 70° 01' 20" E
e max = 0.035
P.C. Sta. 5060+72.83
P.T. Sta. 5069+99.95
D.S. = 50 MPH

(24) ℄ CONST. RAMP A5
P.I. Sta. 5015+13.15
Δ = 60° 32' 16" (RT)
Dc = 11° 20' 00"
R = 505.55'
T = 295.05'
L = 534.16'
E = 79.80'
C = 509.66'
C.B. = N 24° 52' 00" E
e max = 0.060
P.C. Sta. 5012+18.10
P.C.C. Sta. 5017+52.25
D.S. = 40 MPH
HORZ. SSD = 259'
(NDC = 305')

(25) ℄ CONST. RAMP A5
P.I. Sta. 5018+19.35
Δ = 4° 01' 28" (RT)
Dc = 3° 00' 00"
R = 1,909.86'
T = 67.10'
L = 134.14'
E = 1.18'
C = 134.12'
C.B. = N 57° 08' 52" E
e 1 = 0.06
e 2 = N.C.
P.C.C. Sta. 5017+52.25
P.T. Sta. 5018+86.40
D.S. = 45 MPH

(26) ℄ CONST. FUTURE RAMP B5
P.I. Sta. 5013+32.82
Δ = 101° 35' 19" (LT)
Dc = 7° 10' 00"
R = 799.48'
T = 980.06'
L = 1,417.52'
E = 465.31'
V = 45 MPH
C = 1,239.00'
C.B. = S 60° 49' 05" E
e max = 0.058
P.C. Sta. 5003+52.76
P.C.C. Sta. 5017+70.28
D.S. = 45 MPH

(27) ℄ CONST. FUTURE RAMP B5
P.I. Sta. 5018+45.35
Δ = 6° 00' 00" (LT)
Dc = 4° 00' 00"
R = 1,432.39'
T = 75.07'
L = 150.00'
E = 1.97'
V = 45 MPH
C = 149.93'
C.B. = N 65° 23' 15" E
e 1 = 0.058
e 2 = N.C.
P.C.C. Sta. 5017+70.28
P.T. Sta. 5019+20.28
D.S. = 50 MPH

NOTE:
ALL HORIZONTAL DIMENSIONS ARE MEASURED ALONG ℄ RAMP C5 UNLESS NOTED OTHERWISE.
* = MEASURED ALONG THE REFERENCE TANGENT

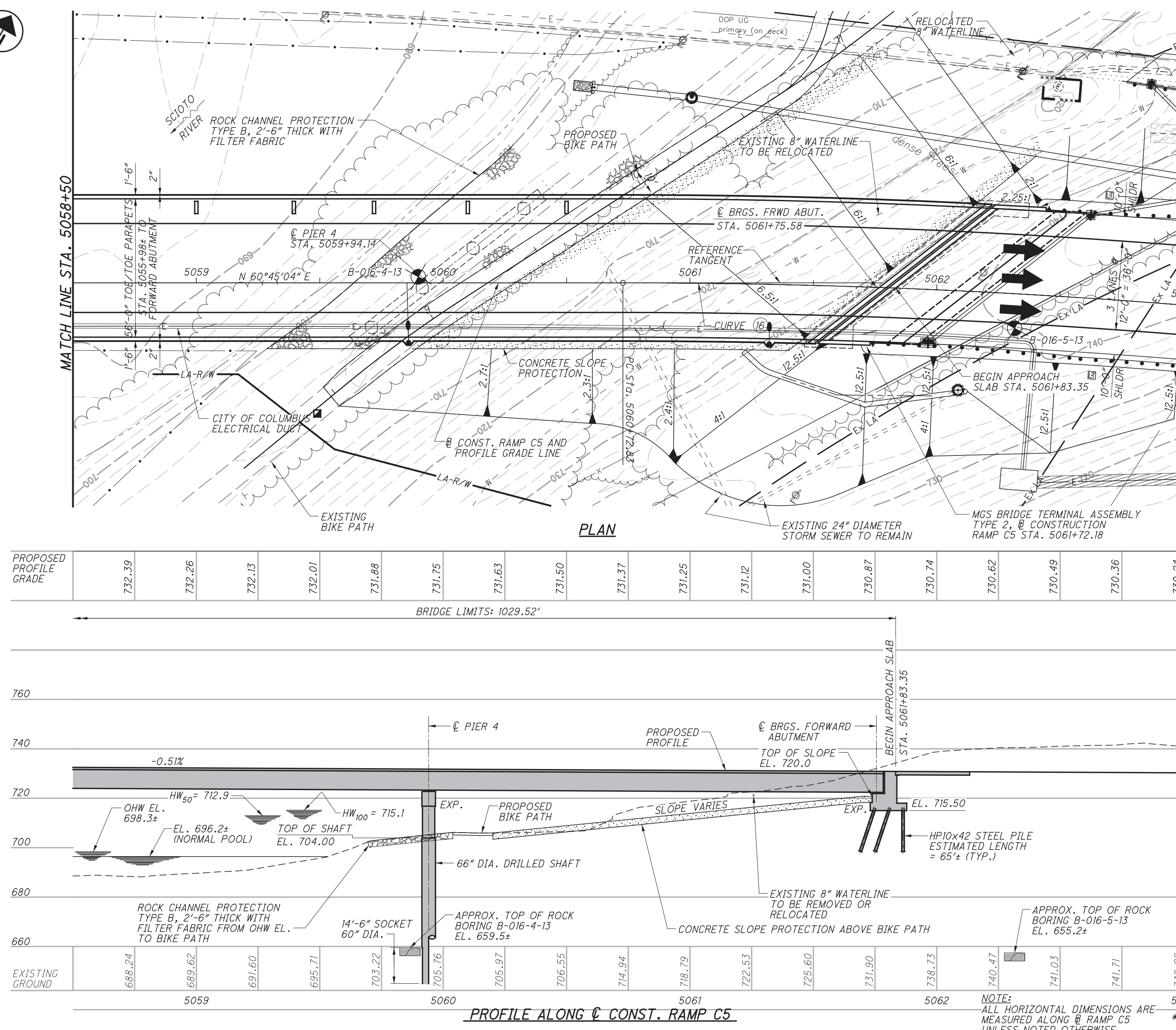
DESIGN AGENCY: GPD GROUP. Glaus, Pyle, Schomer, Burns & DeHaven, Inc. 1801 Watermark Drive, Suite 150, Columbus, Ohio 43215 614.210.0751

DESIGNED DGN | DRAWN RPR | REVIEWED DJC | DATE 7-16-18 | CHECKED TJW | REVISED | STRUCTURE FILE NUMBER 2510015

FRANKLIN COUNTY
STA. 5051+53.83
STA. 5061+83.35

SITE PLAN - 2
BRIDGE NO. FRA-70-1321A
RAMP A5/B5/C5 OVER THE SCIOTO RIVER

FRA-70/71-12.68/14.86
PID No. 105523


MATCH LINE STA. 5058+50
ROCK CHANNEL PROTECTION TYPE B, 2'-6" THICK WITH FILTER FABRIC
SCIOTO RIVER
PROPOSED BIKE PATH
EXISTING 8" WATERLINE TO BE RELOCATED
RELOCATED 8" WATERLINE
MGS BRIDGE TERMINAL ASSEMBLY TYPE 2, ℄ CONSTRUCTION RAMP C5 STA. 5062+40.38
℄ PIER 4 STA. 5059+94.14
℄ BRGS. FRWD ABUT. STA. 5061+75.58
REFERENCE TANGENT
N 60°45'04" E
B-016-4-13
B-016-5-13
CURVE 16
CONCRETE SLOPE PROTECTION
℄ CONST. RAMP C5 AND PROFILE GRADE LINE
CITY OF COLUMBUS ELECTRICAL DUCT
BEGIN APPROACH SLAB STA. 5061+83.35
EXISTING BIKE PATH
EXISTING 24" DIAMETER STORM SEWER TO REMAIN
MGS BRIDGE TERMINAL ASSEMBLY TYPE 2, ℄ CONSTRUCTION RAMP C5 STA. 5061+72.18
PLAN
PROPOSED PROFILE GRADE
732.39
732.26
732.13
732.01
731.88
731.75
731.63
731.50
731.37
731.25
731.12
731.00
730.87
730.74
730.62
730.49
730.36
730.24
BRIDGE LIMITS: 1029.52'
℄ PIER 4
PROPOSED PROFILE
℄ BRGS. FORWARD ABUTMENT
TOP OF SLOPE EL. 720.0
BEGIN APPROACH SLAB STA. 5061+83.35
-0.51%
OHW EL. 698.3±
EL. 696.2± (NORMAL POOL)
TOP OF SHAFT EL. 704.00
EXP.
PROPOSED BIKE PATH
SLOPE VARIES
EL. 715.50
HP10x42 STEEL PILE ESTIMATED LENGTH = 65'± (TYP.)
66" DIA. DRILLED SHAFT
ROCK CHANNEL PROTECTION TYPE B, 2'-6" THICK WITH FILTER FABRIC FROM OHW EL. TO BIKE PATH
14'-6" SOCKET 60" DIA.
APPROX. TOP OF ROCK BORING B-016-4-13 EL. 659.5±
EXISTING 8" WATERLINE TO BE REMOVED OR RELOCATED
CONCRETE SLOPE PROTECTION ABOVE BIKE PATH
APPROX. TOP OF ROCK BORING B-016-5-13 EL. 655.2±
EXISTING GROUND
688.24
689.62
691.60
695.71
703.22
705.76
705.97
706.55
714.94
718.79
722.53
725.60
731.90
738.73
740.47
741.03
741.71
740.92
5059
5060
5061
5062
PROFILE ALONG ℄ CONST. RAMP C5

NOTE: ALL HORIZONTAL DIMENSIONS ARE MEASURED ALONG ℄ RAMP C5 UNLESS NOTED OTHERWISE.

* = MEASURED ALONG THE REFERENCE TANGENT

SOIL BORING TABLE (NEW BORINGS)	
BORING NO.	APPROX. TOP OF BEDROCK ELEVATION
B-015-7-13	651.3±
B-015-8-13	651.7±
B-015-9-13	652.2±
B-016-3-13	643.8±
B-016-4-13	659.5±
B-016-5-13	655.2±

■ NOTE TO REVIEWER: CITY OF COLUMBUS ELECTRICAL DUCT IS SHOWN ON THE BRIDGE HOWEVER, THE FINAL LOCATION OF THE DUCT IS UNDER REVIEW WITH THE CITY OF COLUMBUS AND MAY BE MOVED OFF THE STRUCTURE. THEREFORE ELECTRIC DUCT DETAILS ARE NOT SHOWN ELSEWHERE IN THE STAGE 2 PLANS. THE FINAL LOCATION OF THE DUCT WILL BE ADDRESSED IN THE STAGE.

NOTE:

FOR CURVE DATA SEE SHT. 2/94.

LOW GIRDER ELEVATION	
LOCATION	ELEVATION
STA. 5061+51 RIGHT FASCIA	721.78

DESIGN AGENCY: GPD GROUP.

DESIGNED DGN | DRAWN RPR | REVIEWED DJC | DATE 7-16-18 | CHECKED TJW | REVISED | STRUCTURE FILE NUMBER 2510015

FRANKLIN COUNTY STA. 5051+53.83 STA. 5061+83.35

SITE PLAN - 3

BRIDGE NO. FRA-70-1321A

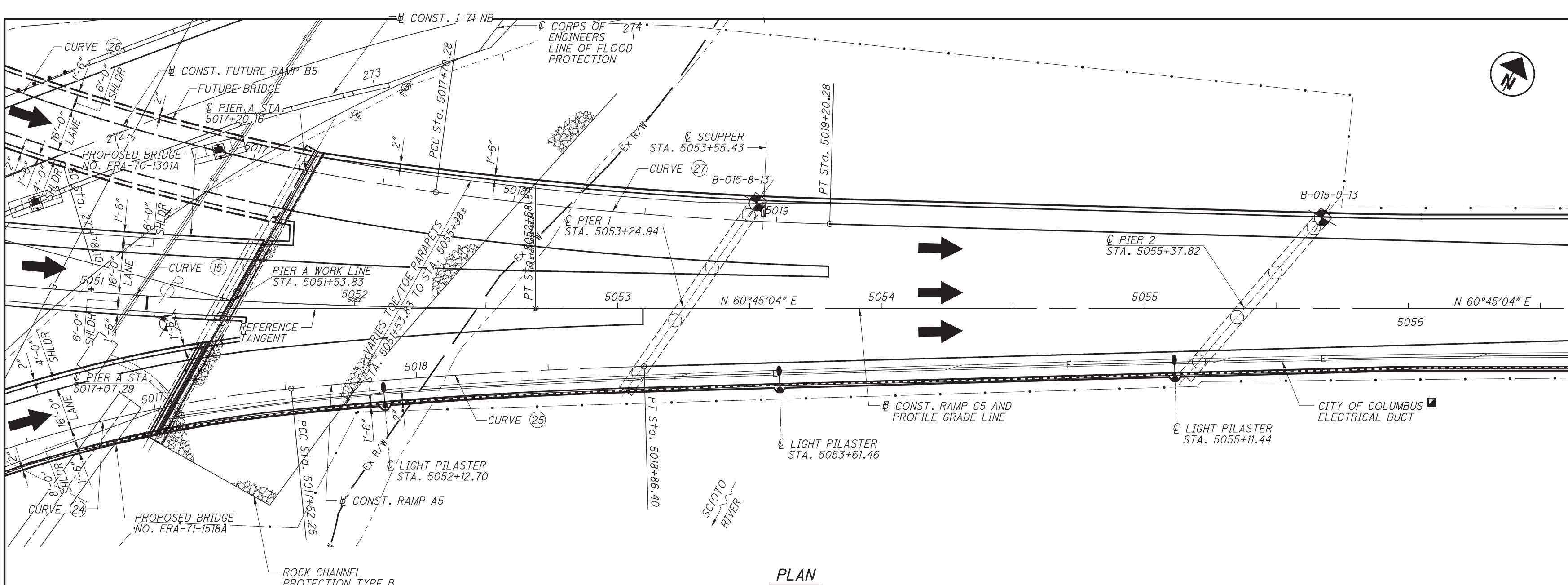
RAMP A5/B5/C5 OVER THE SCIOTO RIVER

FRA-70/71-12.68/14.86

PID No. 105523

3/94

1177/1675


CURVE 26
℄ CONST. FUTURE RAMP B5
FUTURE BRIDGE
℄ PIER A STA. 5017+20.16
PROPOSED BRIDGE NO. FRA-70-1301A
℄ CONST. I-71 NB
℄ CORPS OF ENGINEERS LINE OF FLOOD PROTECTION
PCC STA. 5017+76.28
℄ SCUPPER STA. 5053+55.43
CURVE 27
B-015-8-13
PT STA. 5019+20.28
B-015-9-13
℄ PIER 1 STA. 5053+24.94
℄ PIER 2 STA. 5055+37.82
CURVE 15
PIER A WORK LINE STA. 5051+53.83
REFERENCE TANGENT
VARIES TOE/TOE PARAPETS
N 60°45'04" E
5053
5054
5055
5056
℄ PIER A STA. 5017+07.29
CURVE 25
CURVE 24
℄ LIGHT PILASTER STA. 5052+12.70
℄ CONST. RAMP A5
PCC STA. 5017+52.25
PT STA. 5018+86.40
℄ CONST. RAMP C5 AND PROFILE GRADE LINE
℄ LIGHT PILASTER STA. 5053+61.46
℄ LIGHT PILASTER STA. 5055+11.44
CITY OF COLUMBUS ELECTRICAL DUCT
SCIOTO RIVER
PROPOSED BRIDGE NO. FRA-71-1518A
ROCK CHANNEL PROTECTION TYPE B, WITH FILTER FABRIC
MATCH LINE STA. 5056+67.33
PLAN

NOTE:

FOR CURVE DATA, SEE SHT. NO. 2/94.

■ NOTE TO REVIEWER: CITY OF COLUMBUS ELECTRICAL DUCT IS SHOWN ON THE BRIDGE HOWEVER, THE FINAL LOCATION OF THE DUCT IS UNDER REVIEW WITH THE CITY OF COLUMBUS AND MAY BE MOVED OFF THE STRUCTURE. THEREFORE ELECTRIC DUCT DETAILS ARE NOT SHOWN ELSEWHERE IN THE STAGE 2 PLANS. THE FINAL LOCATION OF THE DUCT WILL BE ADDRESSED IN THE STAGE.

DESIGN AGENCY: GPD GROUP.

DESIGNED DGN | DRAWN RPR | REVIEWED TJW | DATE 7-16-18 | CHECKED DJC | REVISED | STRUCTURE FILE NUMBER 2510015

GENERAL PLAN - 1

BRIDGE NO. FRA-70-1321A

RAMP A5/B5/C5 OVER THE SCIOTO RIVER

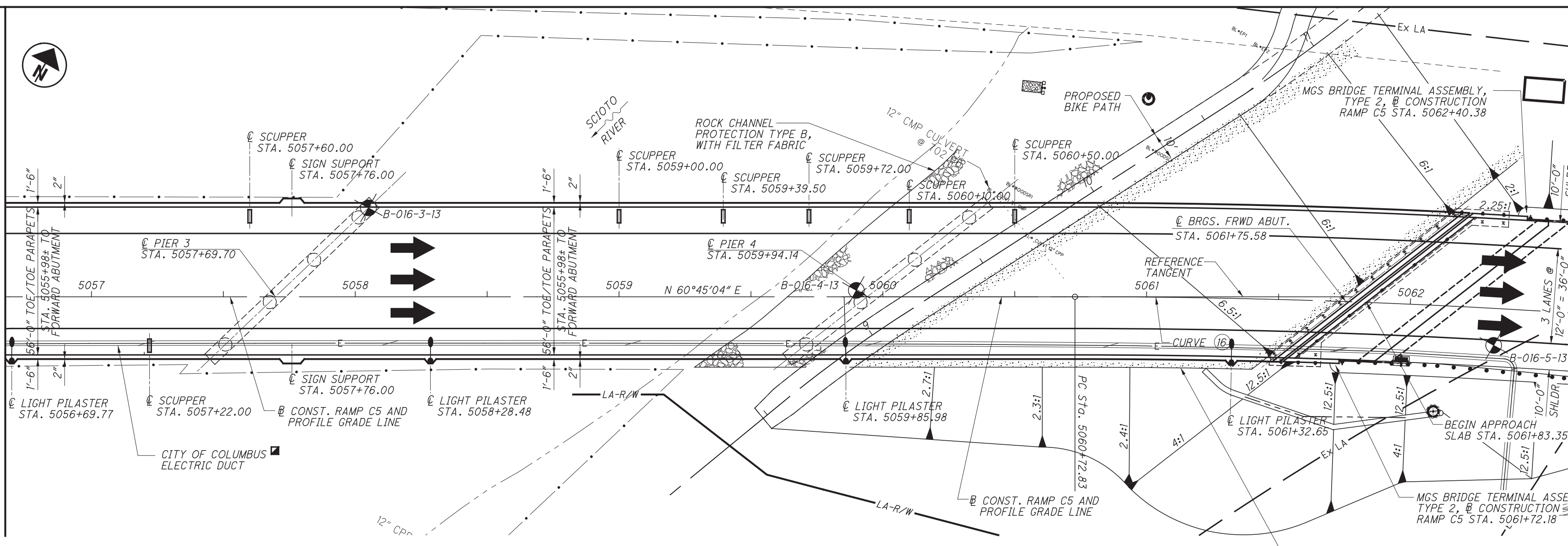
FRA-70/71-12.68/14.86

PID No. 105523

6/94

1180/1675

MATCH LINE STA. 5056+67.33



PLAN

◪ NOTE TO REVIEWER: CITY OF COLUMBUS ELECTRICAL DUCT IS SHOWN ON THE BRIDGE. HOWEVER, THE FINAL LOCATION OF THE DUCT IS UNDER REVIEW WITH THE CITY OF COLUMBUS AND MAY BE MOVED OFF THE STRUCTURE. THEREFORE ELECTRIC DUCT DETAILS ARE NOT SHOWN ELSEWHERE IN THE STAGE 2 PLANS. THE FINAL LOCATION OF THE DUCT WILL BE ADDRESSED IN THE STAGE.

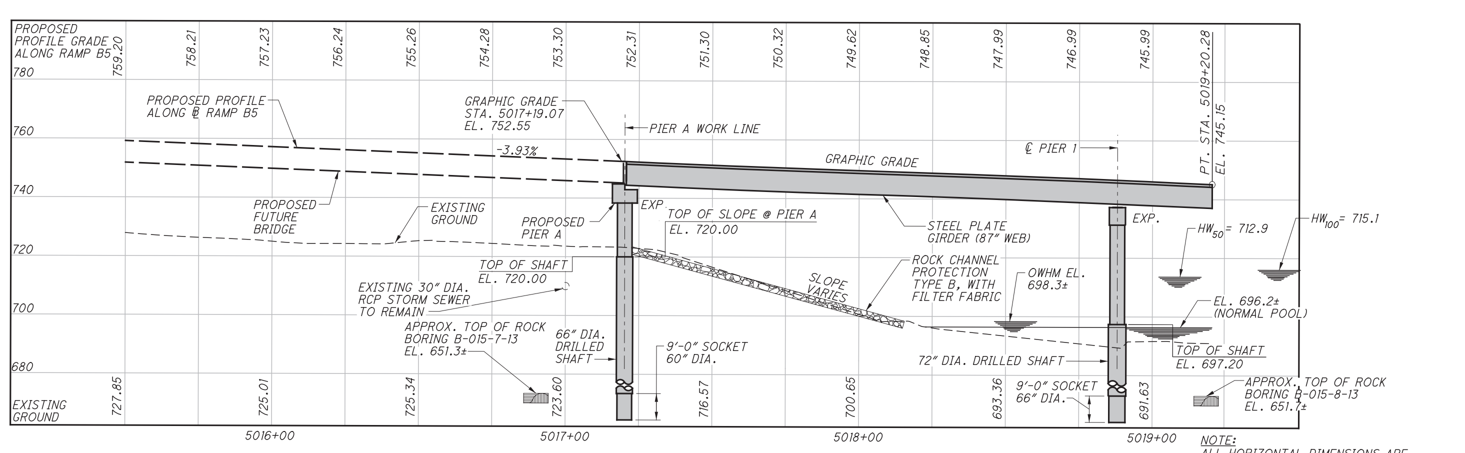
NOTE:
FOR CURVE DATA, SEE SHT. NO. 2/94.

GENERAL PLAN - 2
BRIDGE NO. FRA-70-1321A
RAMP A5/B5/C5 OVER THE SCIOTO RIVER

FRA-70/71-12.68/14.86
PID No. 105523

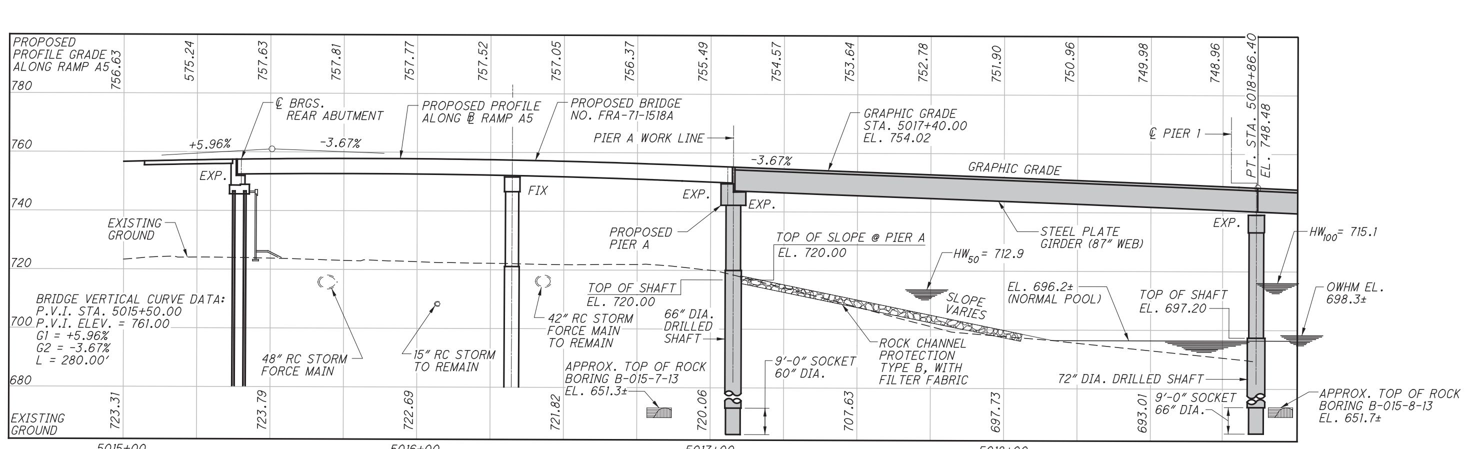
DESIGNED DGN | DRAWN RPR | REVIEWED TJW | DATE 7-16-18 | CHECKED DJC | STRUCTURE FILE NUMBER 2510015

DESIGN AGENCY: GPD GROUP



NOTE:
ALL HORIZONTAL DIMENSIONS ARE MEASURED ALONG ℄ RAMP B5 UNLESS NOTED OTHERWISE.

ELEVATION ALONG ℄ RAMP B5



NOTE:
ALL HORIZONTAL DIMENSIONS ARE MEASURED ALONG ℄ RAMP A5 UNLESS NOTED OTHERWISE.

ELEVATION ALONG ℄ RAMP A5

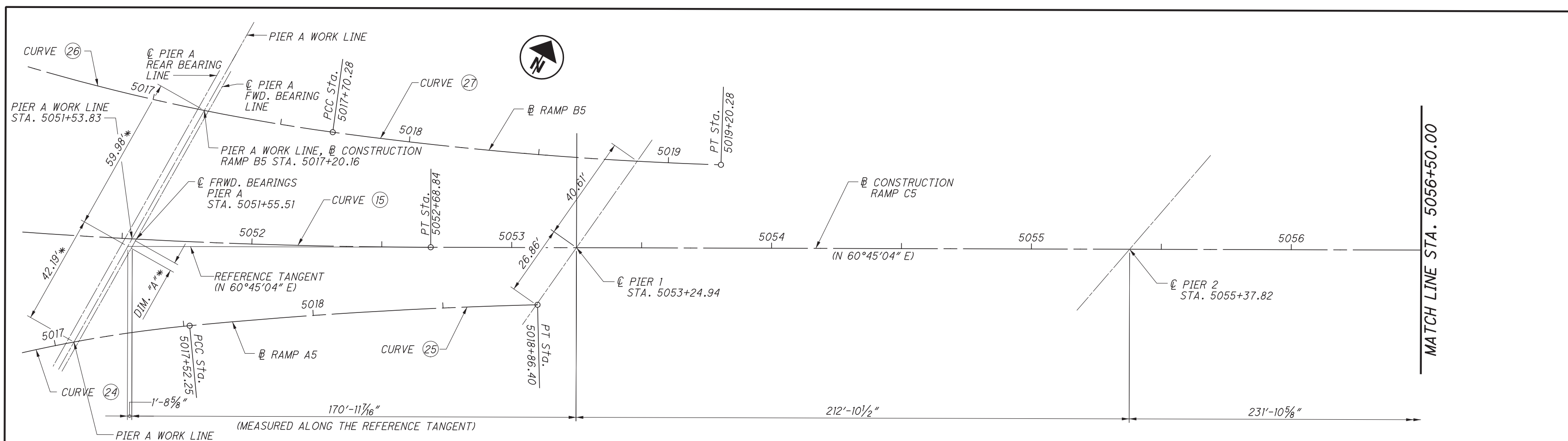
SITE PLAN - 4
BRIDGE NO. FRA-70-1321A
RAMP A5/B5/C5 OVER THE SCIOTO RIVER

FRANKLIN COUNTY
STA. 5051+53.83
STA. 5061+83.35

FRA-70/71-12.68/14.86
PID No. 105523

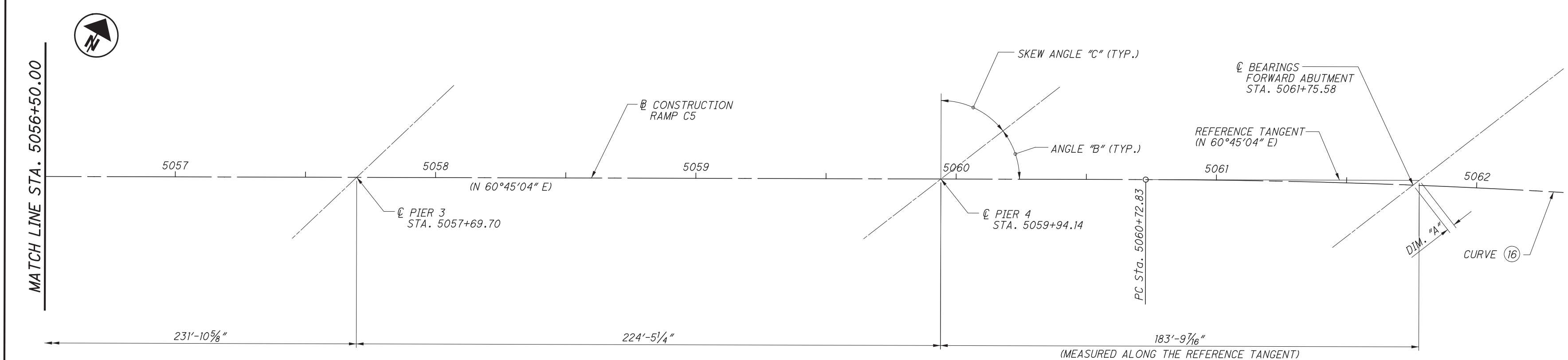
DESIGNED DGN | DRAWN RPR | REVIEWED TJW | DATE 7-16-18 | CHECKED DJC | STRUCTURE FILE NUMBER 2510015

DESIGN AGENCY: GPD GROUP



BRIDGE LAYOUT

(FROM PIER A TO STA. 5056+50.00)



BRIDGE LAYOUT

(FROM STA. 5056+50.00 TO FORWARD ABUTMENT)

LAYOUT DIMENSIONS

	"A"	ANGLE "B"	ANGLE "C"
PIER A	3.31'	60°45'04"	29°14'56"
PIER 1	-	55°02'48"	34°57'12"
PIER 2	-	49°20'33"	40°39'27"
PIER 3	-	43°38'17"	46°21'43"
PIER 4	-	37°56'01"	52°03'59"
FWD. ABUT.	3.00'	37°56'01"	52°03'59"

LEGEND

* = MEASURED ALONG THE CENTERLINE OF PIER A
FWD. = FORWARD

HORIZONTAL CURVE DATA

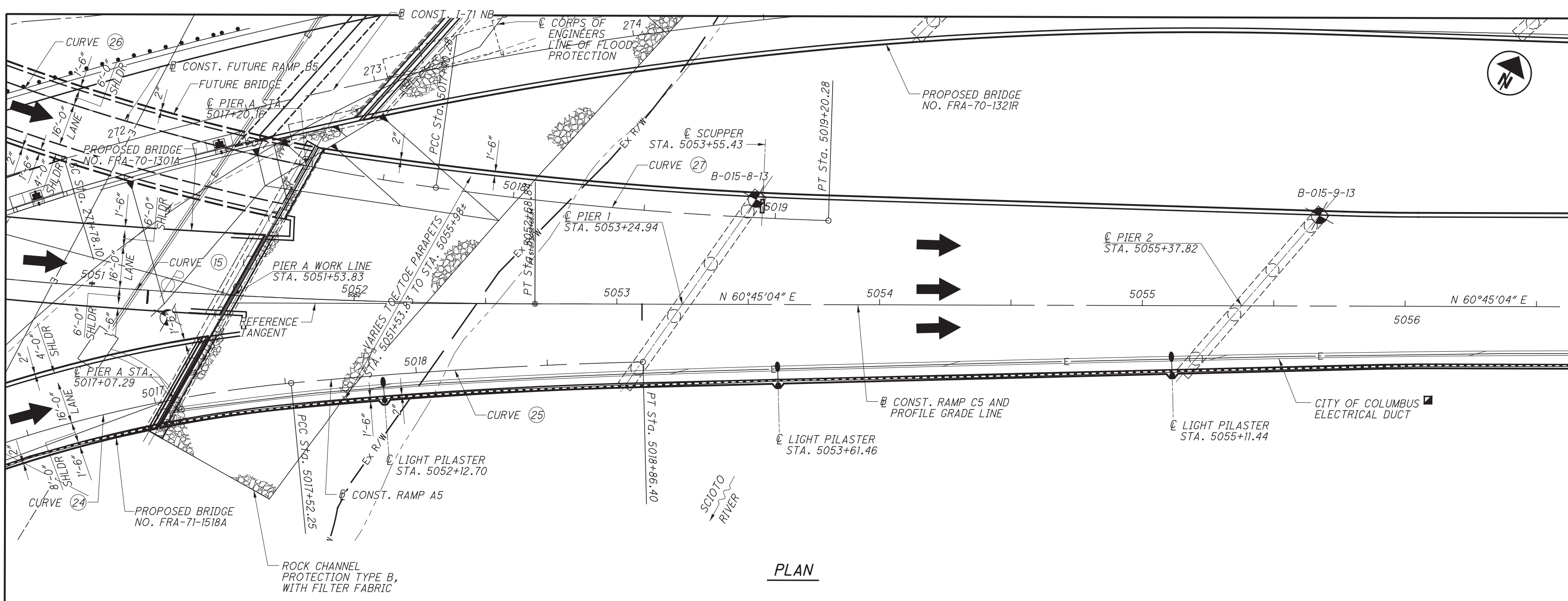
SEE SHEET 2/94

DESIGNED DGN | DRAWN RPR | REVIEWED TJW | DATE 7-16-18 | CHECKED RHC | REVISED | STRUCTURE FILE NUMBER 2510015

DESIGN AGENCY GPD GROUP.

GEOMETRIC LAYOUT PLAN
BRIDGE NO. FRA-70-1321A
RAMP A5/B5/C5 OVER THE SCIOTO RIVER

FRA-70/71-12.68/14.86
PID No. 105523



PLAN

NOTE:

FOR CURVE DATA, SEE SHT. NO. 2/94.

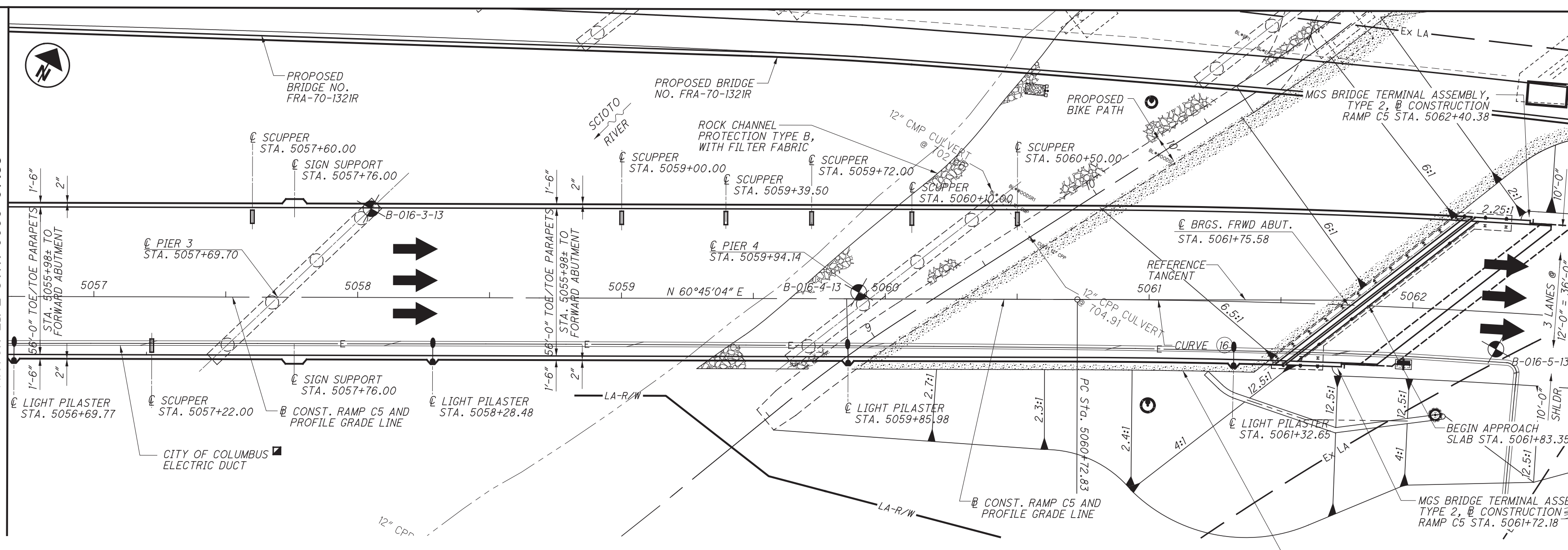
■ NOTE TO REVIEWER: CITY OF COLUMBUS ELECTRICAL DUCT IS SHOWN ON THE BRIDGE. HOWEVER, THE FINAL LOCATION OF THE DUCT IS UNDER REVIEW WITH THE CITY OF COLUMBUS AND MAY BE MOVED OFF THE STRUCTURE. THEREFORE ELECTRIC DUCT DETAILS ARE NOT SHOWN ELSEWHERE IN THE STAGE 2 PLANS. THE FINAL LOCATION OF THE DUCT WILL BE ADDRESSED IN THE STAGE.

DESIGNED DGN | DRAWN RPR | REVIEWED TJW | DATE 7-16-18 | CHECKED DJC | REVISED | STRUCTURE FILE NUMBER 2510015

DESIGN AGENCY GPD GROUP.

GENERAL PLAN - 1
BRIDGE NO. FRA-70-1321A
RAMP A5/B5/C5 OVER THE SCIOTO RIVER

FRA-70/71-12.68/14.86
PID No. 105523



PLAN

NOTE TO REVIEWER: CITY OF COLUMBUS ELECTRICAL DUCT IS SHOWN ON THE BRIDGE. HOWEVER, THE FINAL LOCATION OF THE DUCT IS UNDER REVIEW WITH THE CITY OF COLUMBUS AND MAY BE MOVED OFF THE STRUCTURE, THEREFORE ELECTRIC DUCT DETAILS ARE NOT SHOWN ELSEWHERE IN THE STAGE 2 PLANS. THE FINAL LOCATION OF THE DUCT WILL BE ADDRESSED IN THE STAGE.

NOTE:

FOR CURVE DATA, SEE SHT. NO. 2/84.

DESIGNED	DRAWN	REVIEWED	DATE		
DGN	RPR	TJW	7-16-18	GENERAL PLAN - 2	FRA-70/71-12.68/14.86
CHECKED	REVISED	STRUCTURE FILE NUMBER		BRIDGE NO. FRA-70-1321A	PID No. 105523
DJC		2510015		RAMP A5/B5/C5 OVER THE SCIOTO RIVER	7/94

DESIGN AGENCY: GPD GROUP. 1181/1675

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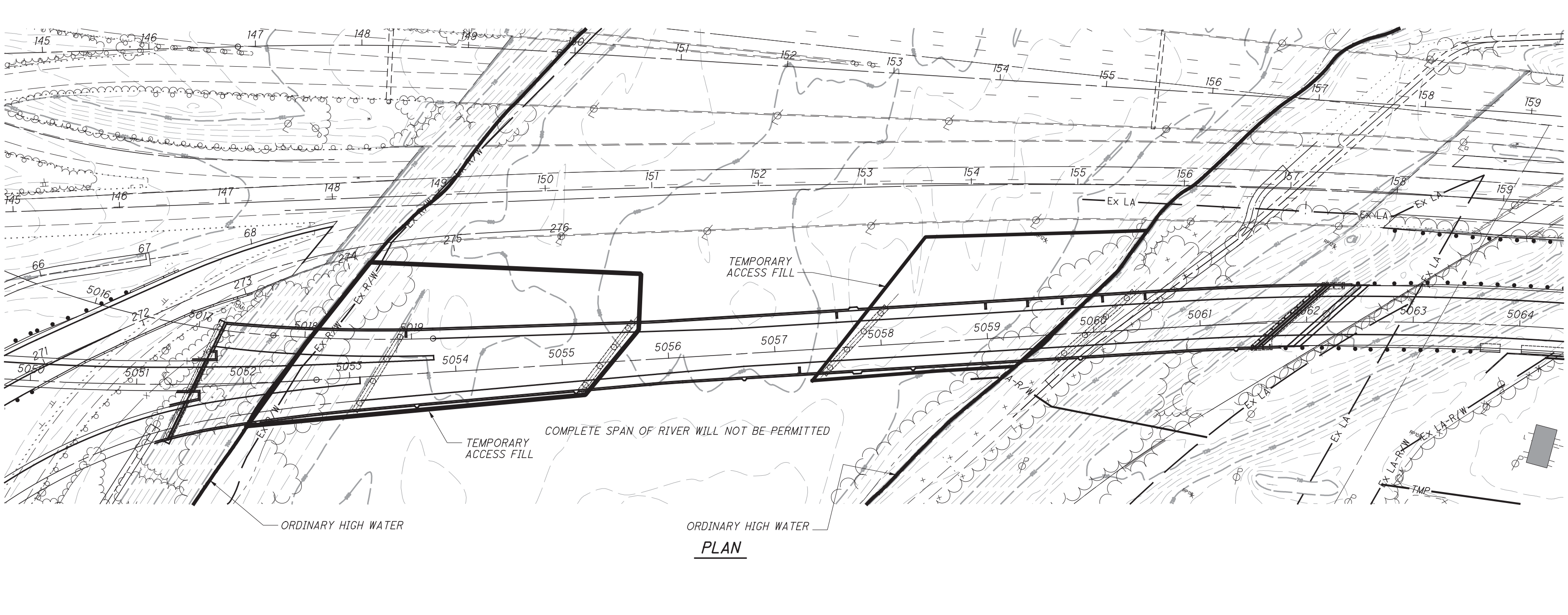
Anticipated Temporary Causeway Design

FRA-70-1321A

39,000 SF + 26,000 SF = 65,000 SF
300 LF + 180 LF = 480 LF



PLAN

PROFILE

DESIGNED	DRAWN	REVIEWED	DATE		
DGN	JMH	XXX	5-31-19	SITE PLAN - CAUSEWAY	FRA-70/71-12.68/14.86
CHECKED	REVISED	STRUCTURE FILE NUMBER		BRIDGE NO. FRA-70-1321A	PID No. 105523
XXX		2510015		RAMP A5/B5/C5 OVER THE SCIOTO RIVER	

DESIGN AGENCY: GPD GROUP.

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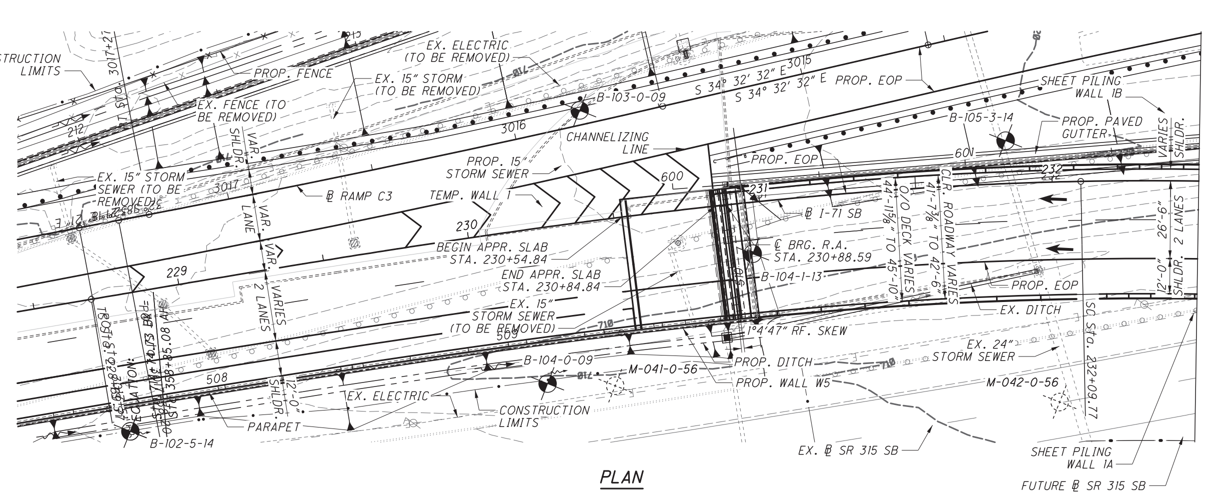
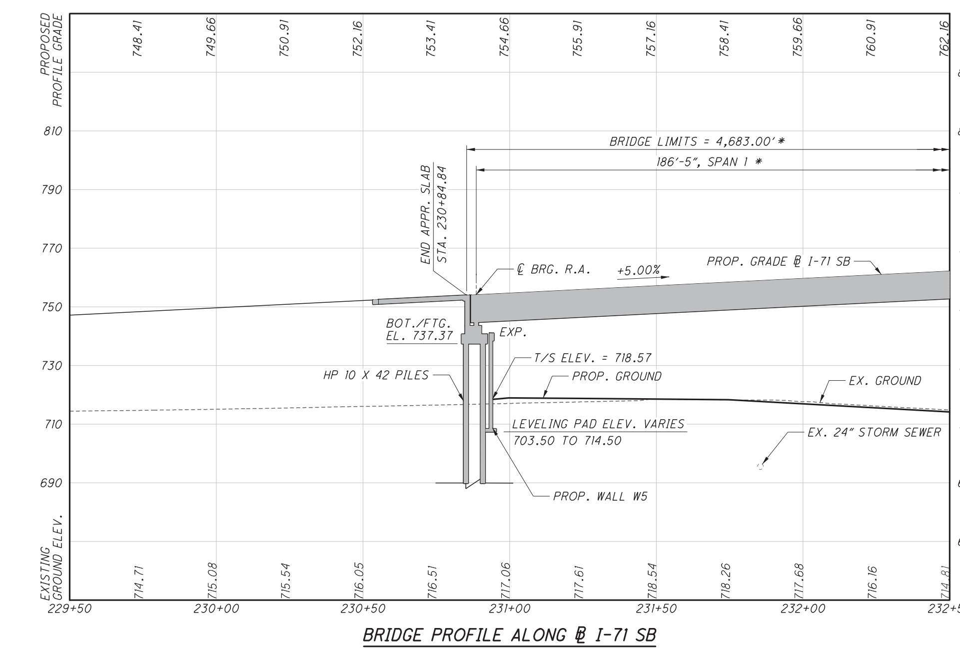




ESTIMATED PILE LENGTH	
LOCATION	EST. LENGTH
REAR ABUT.	85.0 FT.
FWD. ABUT.	100.0 FT.

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-104-1-13	-	654.0±

BENCHMARK DATA

BM #1 STA. 6002+17.25 , ELEV. 737.79 , OFFSET 42.35 RT, RAMP D6
BM #2 STA. 332+44.01 , ELEV. 719.82 , OFFSET 2.30 RT, SR 315 NB
BM #3 STA. 6004+80.97, ELEV. 707.50 , OFFSET 48.23 RT, RAMP A6

FOR ADDITIONAL BENCHMARK INFORMATION. SEE ROADWAY PLAN SHEET

NOTES

FOR HORIZONTAL GEOMETRY SEE SHEETS 13 TO 15 OF 268
EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
ALL EXISTING UTILITIES TO REMAIN (U.N.O.)

DESIGN TRAFFIC:

RAMP TO I-71 SB/315 OVER SCIOTO RIVER
2015 ADT = 29,650 2015 ADTT = 4,450
2035 ADT = 38,300 2035 ADTT = 5,745
DIRECTIONAL DISTRIBUTION = 1.0

I-71 SB (WEST OF SR 315 SPLIT)
2015 ADT = 16,950 2015 ADTT = 3,220
2035 ADT = 21,100 2035 ADTT = 4,000
DIRECTIONAL DISTRIBUTION = 1.0

LEGEND

PROJECT BORING LOCATION

HISTORIC BORING LOCATION

* DISTANCE MEASURED ALONG ℄ I-71 SB

HYDRAULIC DATA

DRAINAGE AREA = 1,629 SQ. MILES
Q (100) = 75,000 CFS V (100) = 5.4 FT/S
Q (50) = 62,100 CFS V (50) = 5.0 FT/S
STRUCTURE CLEARS THE 50 YEAR DESIGN HW BY 29.92 FEET

EXISTING STRUCTURE

TYPE: CONTINUOUS CURVED STEEL W/ REINFORCED CONCRETE DECK AND CONCRETE COLUMN PIERS AND CONCRETE STUB ABUTMENTS
SPANS: 58.5'±, 95.25±', 90.25±', 93.5±', 108.0±' & 124.0±' (C/C BRGS.)
ROADWAY: 30'-0" FACE TO FACE OF PARAPET
LOADING: HS20-44 & INTERSTATE ALTERNATE
SKEW: VARIES
APPROACH SLABS: AS-1-67, 25'-0" LONG
ALIGNMENT: VARIES
SUPERELEVATION: 0.0833'/FT
WEARING SURFACE: 1" MONOLITHIC CONCRETE
STRUCTURE FILE NO.: 2507579
DATE BUILT: 1975
DISPOSITION: TO BE REMOVED

PROPOSED STRUCTURE

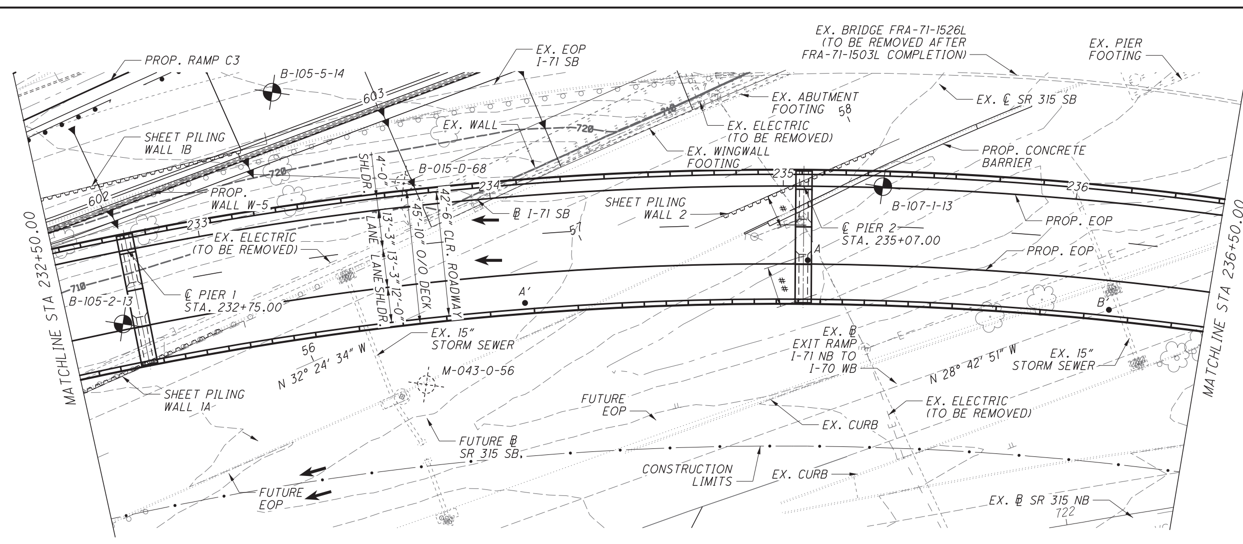
TYPE: 3 UNIT (9 SPAN, 7 SPAN, AND 7 SPAN) COMPOSITE HYBRID STEEL GIRDER (ASTM A709 GRADE 50W & GRADE 70W) WITH REINFORCED CONC. DECK, REAR AND FORWARD ABUTMENTS ON PILES BEHIND MSE WALLS, PIERS ON DRILLED SHAFTS
SPANS: 186.41', 232.00', 223.89', 253.82', 253.82', 253.82', 240.85', 176.35', 102.78', 213.46', 242.05', 219.22', 214.52', 200.00', 197.27', 163.40', 198.49', 237.00', 210.00', 201.5', 217.00', 101.50', 126.34' C/C BEARINGS, MEASURED ALONG BASE LINE
ROADWAY: VARIES - MIN. 41'-7⅜", MAX. 95'-2" T/T PARAPET
LOADING: HL93 AND FUTURE WEARING SURFACE 0.06 KSF
SKEWS: VARIES, SEE REF. CHORD DIAGRAMS
WEARING SURFACE: 1" MONOLITHIC CONCRETE
APPROACH SLABS: AS-1-15, 30' LONG (MODIFIED)
ALIGNMENT: VARIES
SUPERELEVATION: VARIES, MAX. 0.06
COORDINATES: LATITUDE 39° 56' 55"
LONGITUDE 83° 00' 59"

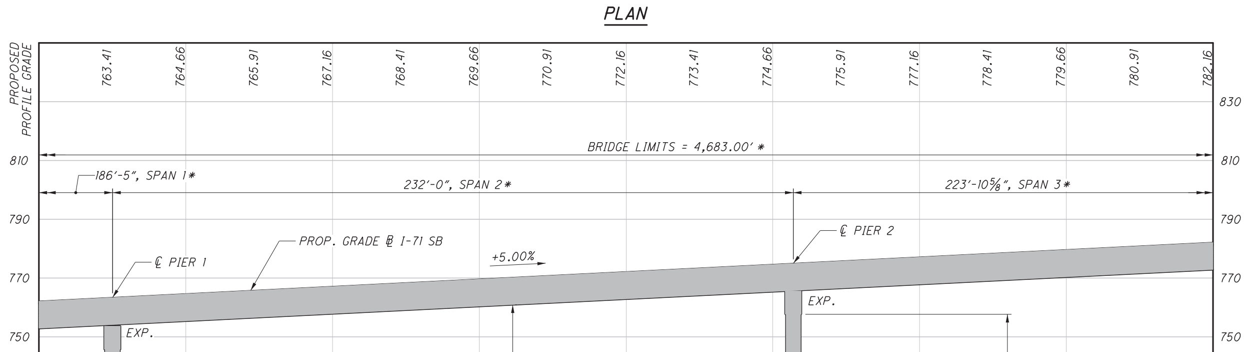
ms consultants, inc. 2221 Schrock Road Columbus, Ohio 43229 — DESIGN AGENCY
DESIGNED CMA | CHECKED FBW | DRAWN CMA | REVISED | REVIEWED GLG | DATE 15-Sep | STRUCTURE FILE NUMBER 2510025
FRANKLIN COUNTY STA. 230+84.84 STA. 277+67.84

SITE PLAN (1 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

1/268 — 905/1239





LEGEND

PROJECT BORING LOCATION

HISTORIC BORING LOCATION

* DISTANCE MEASURED ALONG ℄ I-71 SB

• 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE

PT. A = 42.50' ACTUAL VERTICAL CLEARANCE

PT. A' = 52.41' ACTUAL VERTICAL CLEARANCE

PT. B' = 64.00' ACTUAL VERTICAL CLEARANCE (SHOWN IN PROFILE VIEW ON NEXT SHEET)

\# = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
11'-5⅞" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

\#\# = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
13'-10¼" = ACTUAL HORIZONTAL CLEARANCE (TO BE PROTECTED BY BARRIER)

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-105-2-13	-	651.0±
B-107-1-13	-	650.2±

ms consultants, inc. 2221 Schrock Road Columbus, Ohio 43229 — DESIGN AGENCY
DESIGNED CMA | CHECKED FBW | DRAWN CMA | REVISED | REVIEWED GLG | DATE 15-Sep | STRUCTURE FILE NUMBER 2510025
FRANKLIN COUNTY STA. 230+84.84 STA. 277+67.84

SITE PLAN (2 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

2/268 — 906/1239

FRA-70-13.10
PID No. 89464

SITE PLAN (4 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRANKLIN COUNTY
STA. 235+61.84
STA. 271+61.84

DESIGNED	DRAWN	REVIEWED	DATE
CHECKED	CHECKED	STRUCTURE FILE NUMBER	
FBM	CMA	GLG	15-Sep
	CMA		2510025

DESIGN AGENCY
ms consultants, Inc.
2221 Schrock Road
Columbus, Ohio 43229

PROJECT BORING LOCATION

HISTORIC BORING LOCATION

DISTANCE MEASURED ALONG ℄ I-71 SB

- 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
- PT. B' = 64.00', ACTUAL VERTICAL CLEARANCE (PT. ON PREVIOUS SHEET IN PLAN VIEW)
- PT. B = 39.22', ACTUAL VERTICAL CLEARANCE
- PT. C = 57.87', ACTUAL VERTICAL CLEARANCE
- PT. C' = 76.22', ACTUAL VERTICAL CLEARANCE
- PT. D = 20.25', ACTUAL VERTICAL CLEARANCE
- PT. D' = 80.09', ACTUAL VERTICAL CLEARANCE
- PT. E' = 42.54', ACTUAL VERTICAL CLEARANCE (PT. ON NEXT SHEET IN PLAN VIEW)

Δ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
17'-10½" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

□□ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
9'-8¾" = ACTUAL HORIZONTAL CLEARANCE (TO BE PROTECTED BY BARRIER)

□□□ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
19'-0½" = ACTUAL HORIZONTAL CLEARANCE (TO BE PROTECTED BY BARRIER)

□□□□ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
14'-5⅝" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-108-4-13		653.2±
B-108-5-13	-	645.8±

NOTES:
1. FOR ADDITIONAL INFORMATION, SEE SHEET U/268.

FRA-70-13.10
PID No. 89464

SITE PLAN (3 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRANKLIN COUNTY
STA. 235+61.84
STA. 271+61.84

DESIGNED	DRAWN	REVIEWED	DATE
CHECKED	CHECKED	STRUCTURE FILE NUMBER	
FBM	CMA	GLG	15-Sep
	CMA		2510025

DESIGN AGENCY
ms consultants, Inc.
2221 Schrock Road
Columbus, Ohio 43229

PROJECT BORING LOCATION

HISTORIC BORING LOCATION

DISTANCE MEASURED ALONG ℄ I-71 SB

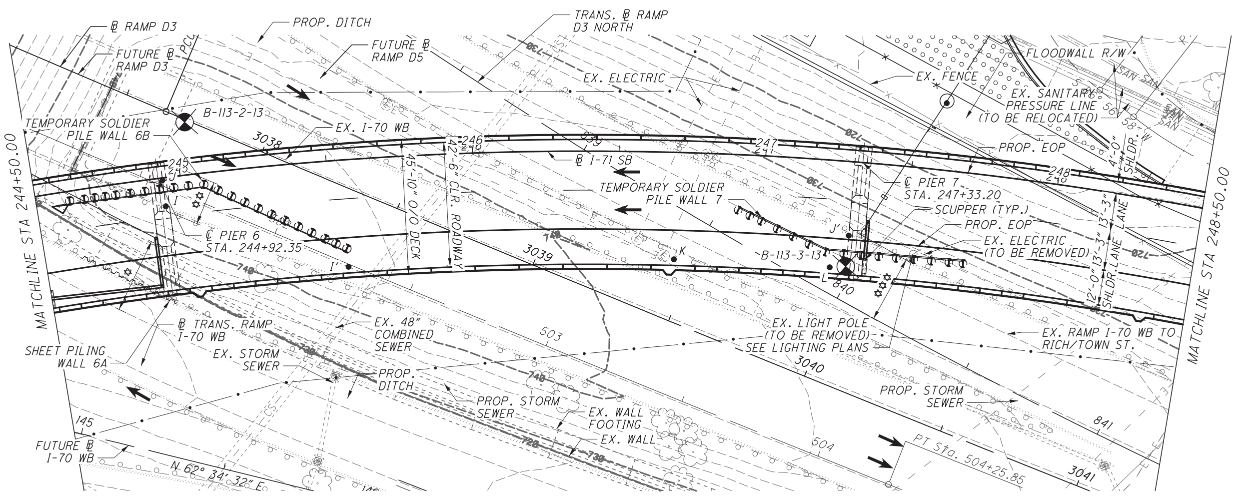
- 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
- PT. B = 39.22', ACTUAL VERTICAL CLEARANCE
- PT. B' = 64.00', ACTUAL VERTICAL CLEARANCE (PT. ON PREVIOUS SHEET IN PLAN VIEW)
- PT. C = 57.87', ACTUAL VERTICAL CLEARANCE
- PT. C' = 76.22', ACTUAL VERTICAL CLEARANCE
- PT. D = 20.25', ACTUAL VERTICAL CLEARANCE
- PT. D' = 80.09', ACTUAL VERTICAL CLEARANCE
- PT. E = 42.54', ACTUAL VERTICAL CLEARANCE (PT. ON NEXT SHEET IN PLAN VIEW)
- PT. E' = 40.10', ACTUAL VERTICAL CLEARANCE
- PT. F = 16.37', ACTUAL VERTICAL CLEARANCE
- PT. G = 35.84', ACTUAL VERTICAL CLEARANCE
- PT. G' = 54.74', ACTUAL VERTICAL CLEARANCE
- PT. H = 60.88', ACTUAL VERTICAL CLEARANCE
- PT. H' = 66.33', ACTUAL VERTICAL CLEARANCE

⊗ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
10'-4⅝" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

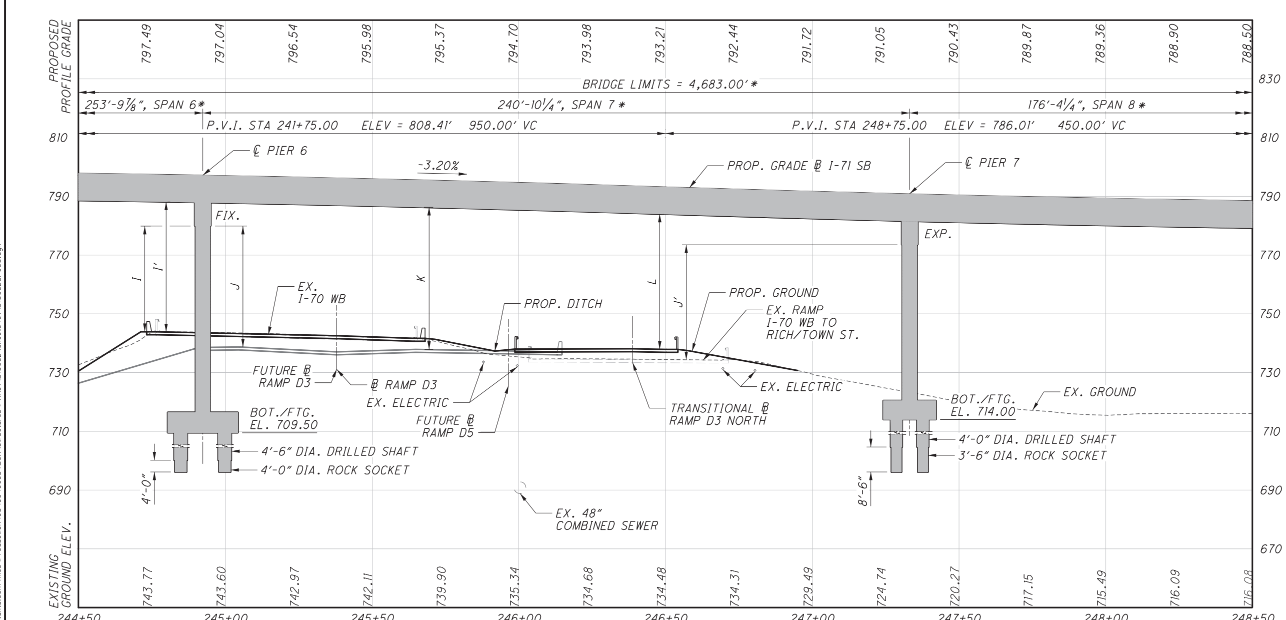
⊗⊗ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
14'-1⅞" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-108-6-13	-	657.0±

NOTES:
1. FOR ADDITIONAL INFORMATION, SEE SHEET U/268.



PLAN



BRIDGE PROFILE ALONG ℄ I-71 SB

LEGEND

- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG ℄ I-71 SB

● 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE

PT. I = 22.73' ACTUAL VERTICAL CLEARANCE
PT. I' = 42.01' ACTUAL VERTICAL CLEARANCE
PT. J = 37.91' ACTUAL VERTICAL CLEARANCE
PT. J' = 35.14' ACTUAL VERTICAL CLEARANCE
PT. K = 43.71' ACTUAL VERTICAL CLEARANCE
PT. L = 40.77' ACTUAL VERTICAL CLEARANCE

✲ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
25'-6¾" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

✲✲ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
15'-0¾" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

✲✲✲ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
22'-10⅜" ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-113-2-13	-	654.1±
B-113-3-13	658.3±	653.3±

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

DESIGNED	DRAWN	REVIEWED	DATE
CMA	CMA	GLG	15-Sep
CHECKED	REVISED	STRUCTURE FILE NUMBER	
FBW		2510025	

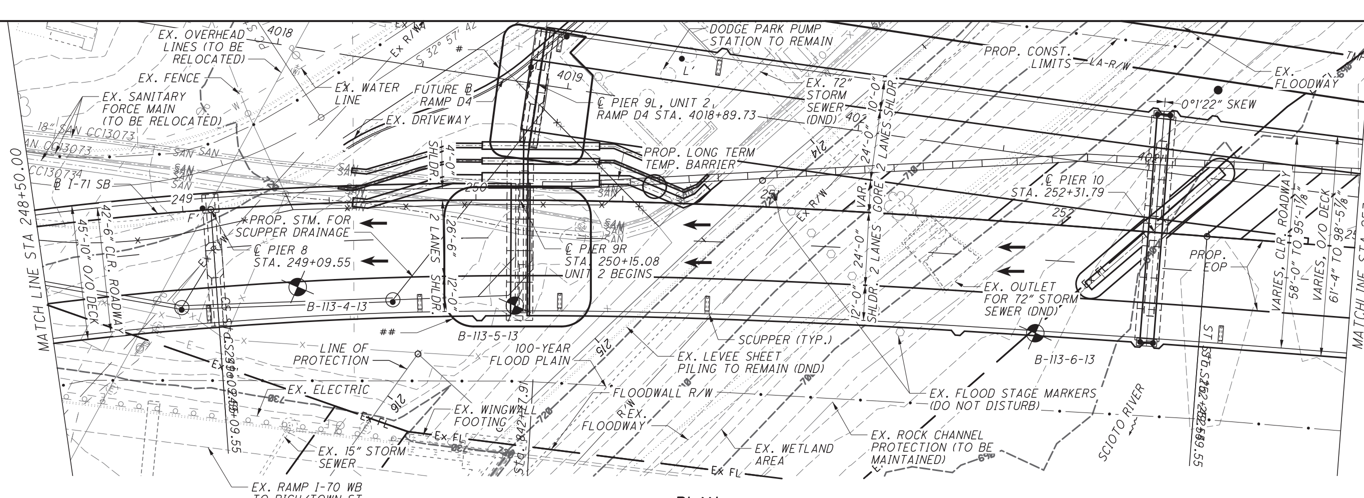
DESIGN AGENCY: ms consultants, inc. 2221 Schrock Road, Columbus, Ohio 43229

FRANKLIN COUNTY
STA. 230+84.84
STA. 277+67.84

SITE PLAN (5 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

5/268
909/1239



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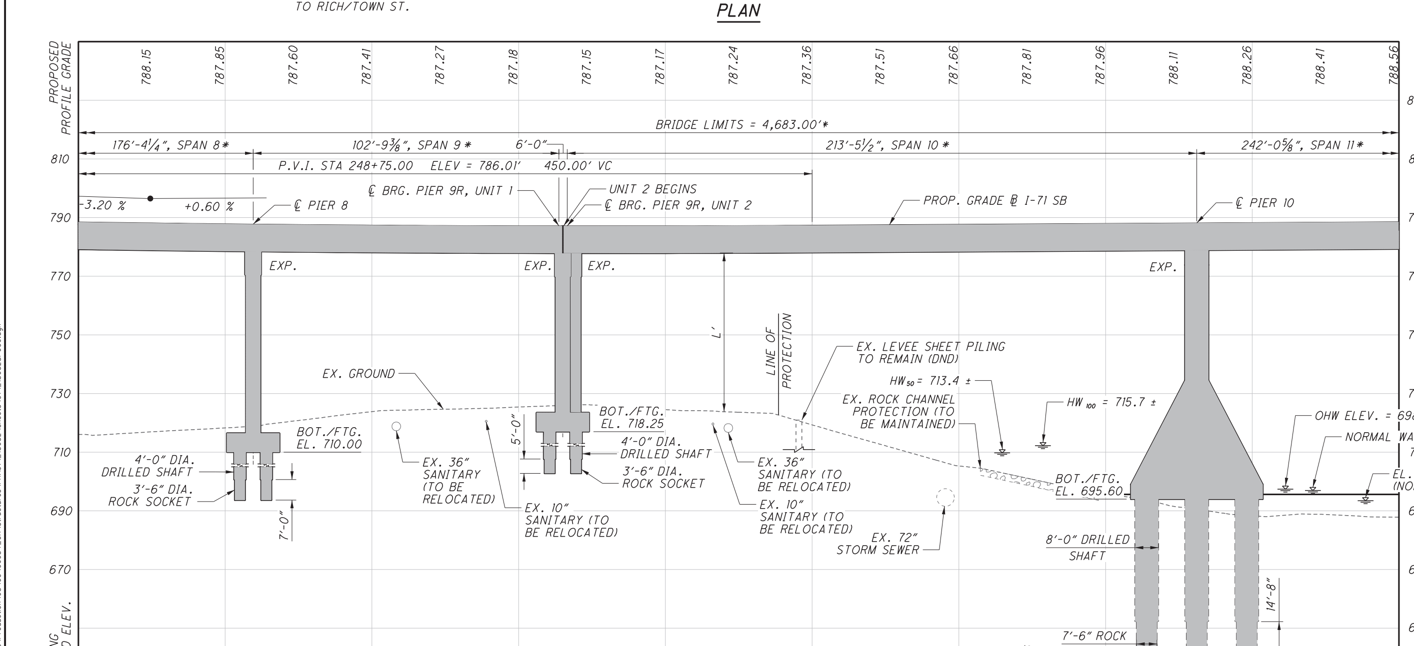


BRIDGE PROFILE ALONG ℄ I-71 SB

LEGEND

- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG ℄ I-71 SB
- \# APPROX. LIMITS OF EXCAVATION - 41' x 37' x 7.5' DEEP
- \#\# APPROX. LIMITS OF EXCAVATION - 41.5' x 41.5' x 8' DEEP

● 15'-6" MIN. REQUIRED VERTICAL CLEARANCE

PT. F' = 51.94' ACTUAL VERTICAL CLEARANCE

● 50'-0" MIN. REQUIRED VERTICAL CLEARANCE (OVER EX. LIFT STATIONS)

PT. L' = 52.87' ACTUAL VERTICAL CLEARANCE

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-113-4-13	652.7±	649.2±
B-113-5-13	652.2±	650.8±
B-113-6-13	652.2±	647.6±

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

DESIGNED	DRAWN	REVIEWED	DATE
CMA	CMA	GLG	15-Sep
CHECKED	REVISED	STRUCTURE FILE NUMBER	
FBW		2510025	

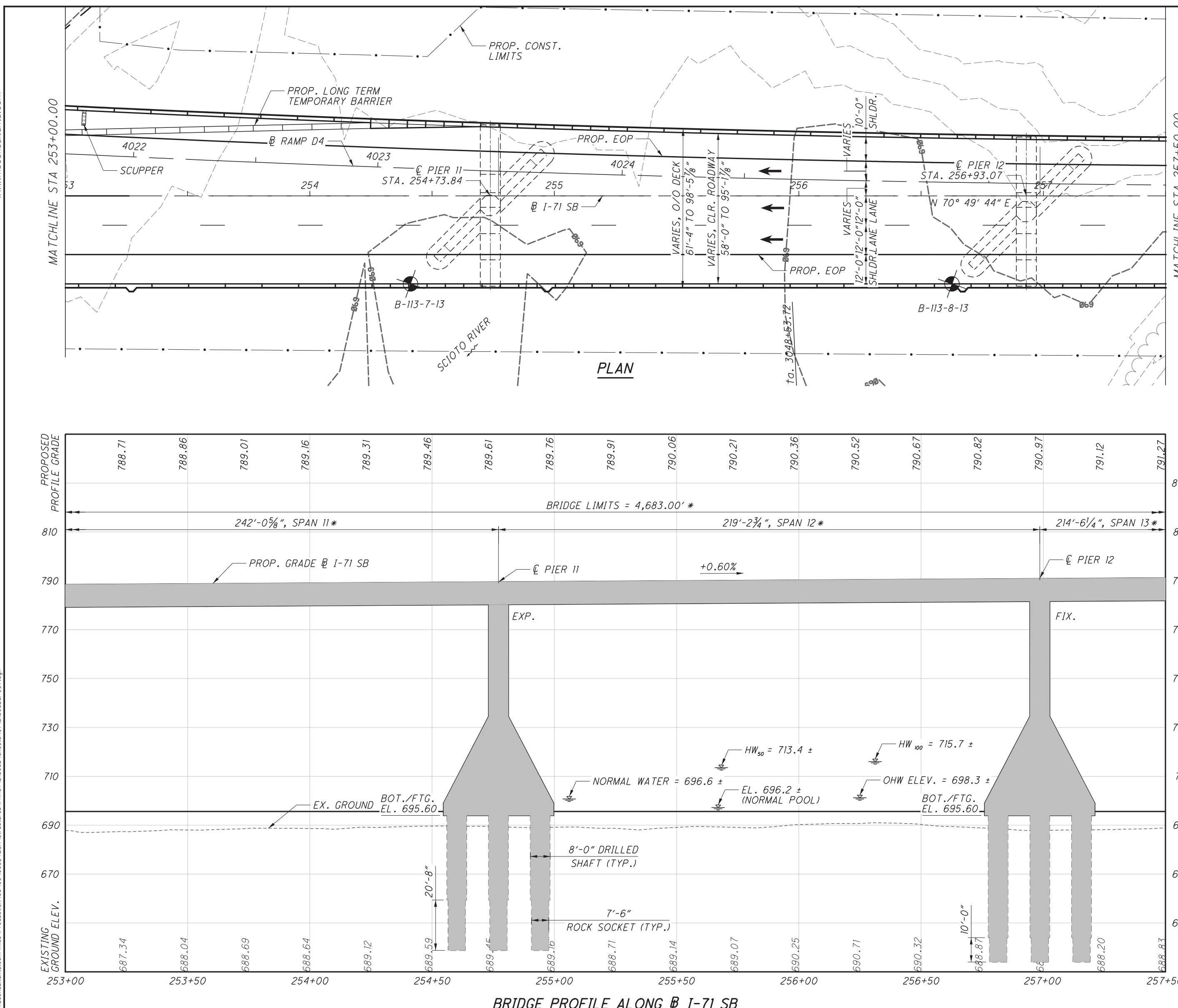
DESIGN AGENCY: ms consultants, inc. 2221 Schrock Road, Columbus, Ohio 43229

FRANKLIN COUNTY
STA. 230+84.84
STA. 277+67.84

SITE PLAN (6 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

6/268
910/1239



TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-113-7-13	659.4±	648.8±
B-113-8-13	-	644.0±

LEGEND

- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG ℄ I-71 SB

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

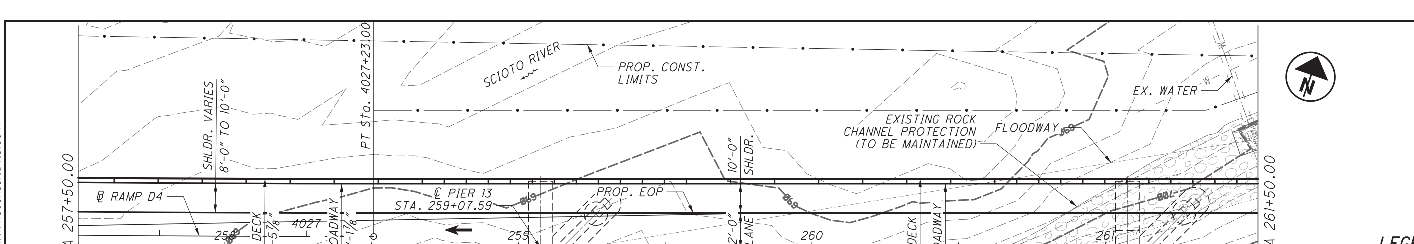
FRANKLIN COUNTY
STA. 230+84.84
STA. 277+67.84

SITE PLAN (7 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

DESIGNED	DRAWN	REVIEWED	DATE
CMA	CMA	GLG	15-Sep
CHECKED	REVISED	STRUCTURE FILE NUMBER	
FBW		2510025	

DESIGN AGENCY
ms consultants, inc.
2221 Schrock Road
Columbus, Ohio 43229



LEGEND

- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG ℄ I-71 SB
- ** ROCK CHANNEL PROTECTION, TYPE B WITH FILTER FABRIC PAID FOR UNDER ROADWAY ITEM 601

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-113-9-13	656.3±	645.6±
B-114-1-13	655.3±	634.8±

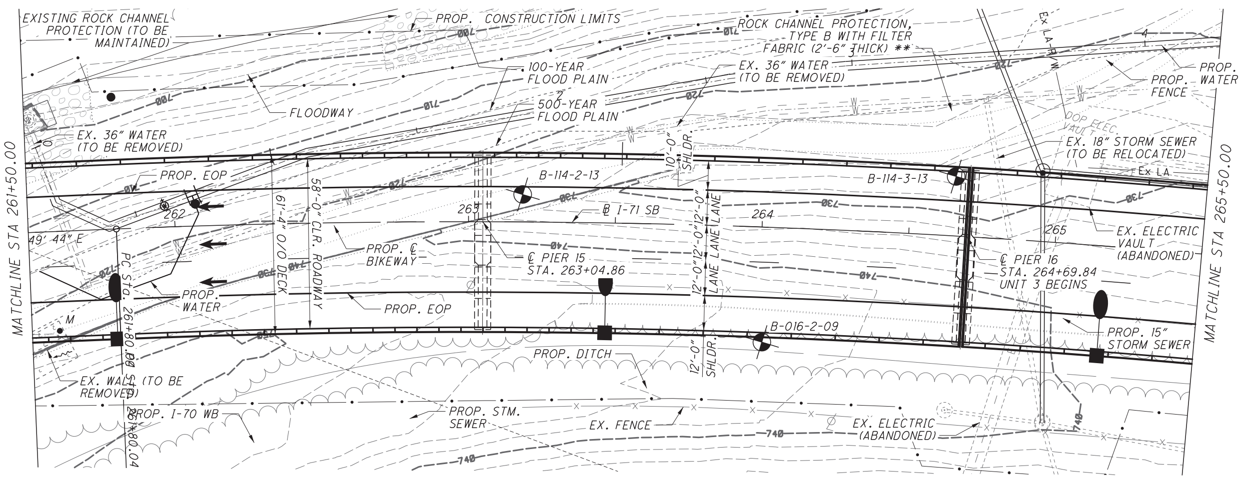
FRANKLIN COUNTY
STA. 230+84.84
STA. 277+67.84

SITE PLAN (8 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

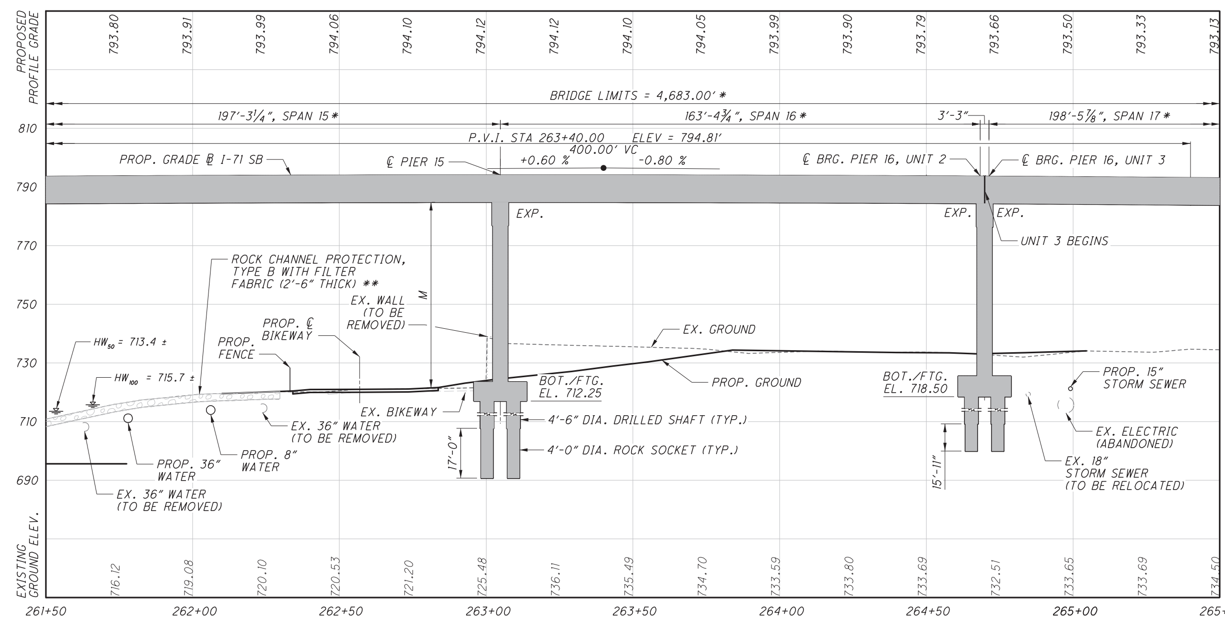
FRA-70-13.10
PID No. 89464

DESIGNED	DRAWN	REVIEWED	DATE
CMA	CMA	GLG	15-Sep
CHECKED	REVISED	STRUCTURE FILE NUMBER	
FBW		2510025	

DESIGN AGENCY
ms consultants, inc.
2221 Schrock Road
Columbus, Ohio 43229



PLAN



BRIDGE PROFILE ALONG ℄ I-71 SB

LEGEND

- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG ℄ I-71 SB
- ** ROCK CHANNEL PROTECTION, TYPE B WITH FILTER FABRIC PAID FOR UNDER ROADWAY ITEM 601

● 10'-0" MIN. REQUIRED VERTICAL CLEARANCE

PT. M = 62.76' ACTUAL VERTICAL CLEARANCE

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-114-2-13	660.0±	643.0±
B-114-3-13	661.1±	645.2±

DESIGN AGENCY: ms consultants, inc. 2221 Schrock Road Columbus, Ohio 43229

DESIGNED	DRAWN	REVIEWED	DATE
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FRANKLIN COUNTY
STA. 230+84.84
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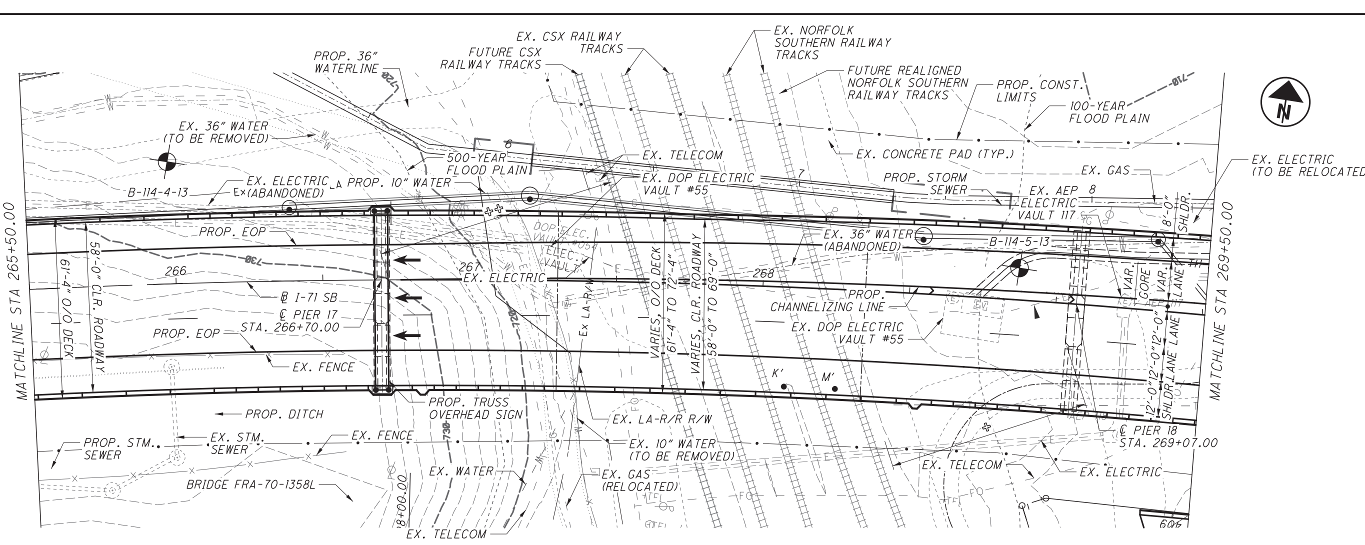
SITE PLAN (9 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

9/268

913/1239

ms consultants, inc.



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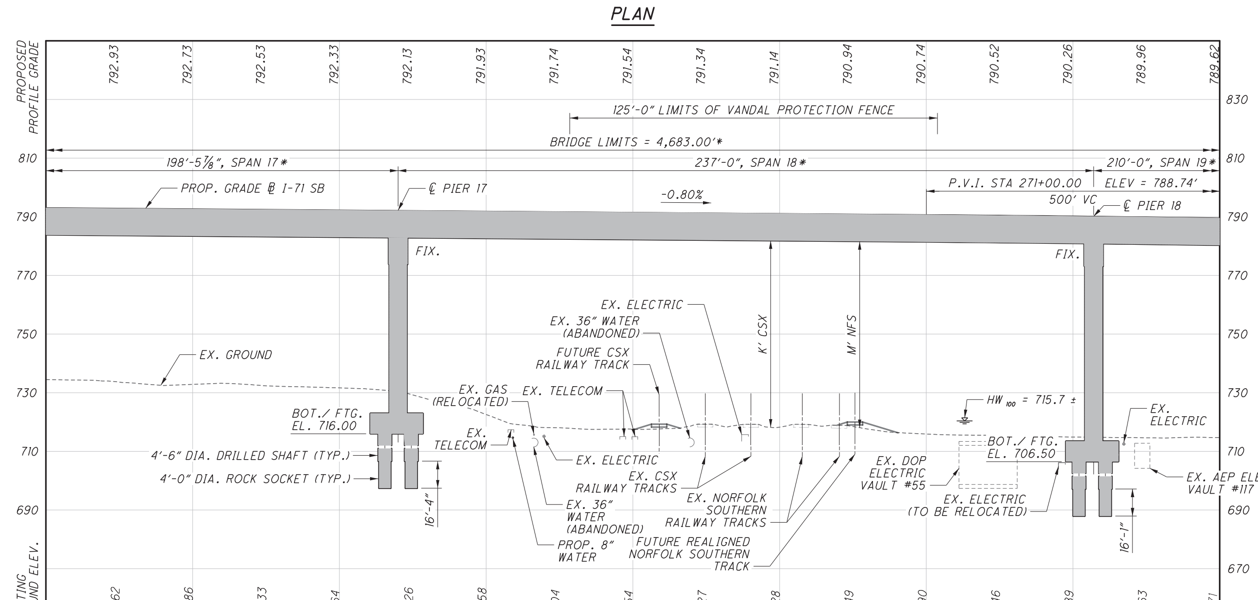


BRIDGE PROFILE ALONG ℄ I-71 SB

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-114-4-13	660.6±	644.3±
B-114-5-13	651.8±	635.7±

LEGEND

- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG ℄ I-71 SB

● 23'-0" MIN. REQUIRED VERTICAL CLEARANCE (OVER RAILROAD)

PT. K' = 62.01' ACTUAL VERTICAL CLEARANCE

PT. M' = 61.36' ACTUAL VERTICAL CLEARANCE

✥ = 25'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON NS RAILROAD REQUIREMENTS) 68'-9⅞" = ACTUAL HORIZONTAL CLEARANCE

✥✥ = 25'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CSX RAILROAD REQUIREMENTS) 82'-3⅞" = ACTUAL HORIZONTAL CLEARANCE

NOTES:

1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

DESIGN AGENCY: ms consultants, inc. 2221 Schrock Road Columbus, Ohio 43229

DESIGNED	DRAWN	REVIEWED	DATE
CMA	CMA	GLG	15-Sep
CHECKED	REVISED	STRUCTURE FILE NUMBER	
FBW		2510025	

FRANKLIN COUNTY
STA. 230+84.84
STA. 277+67.84

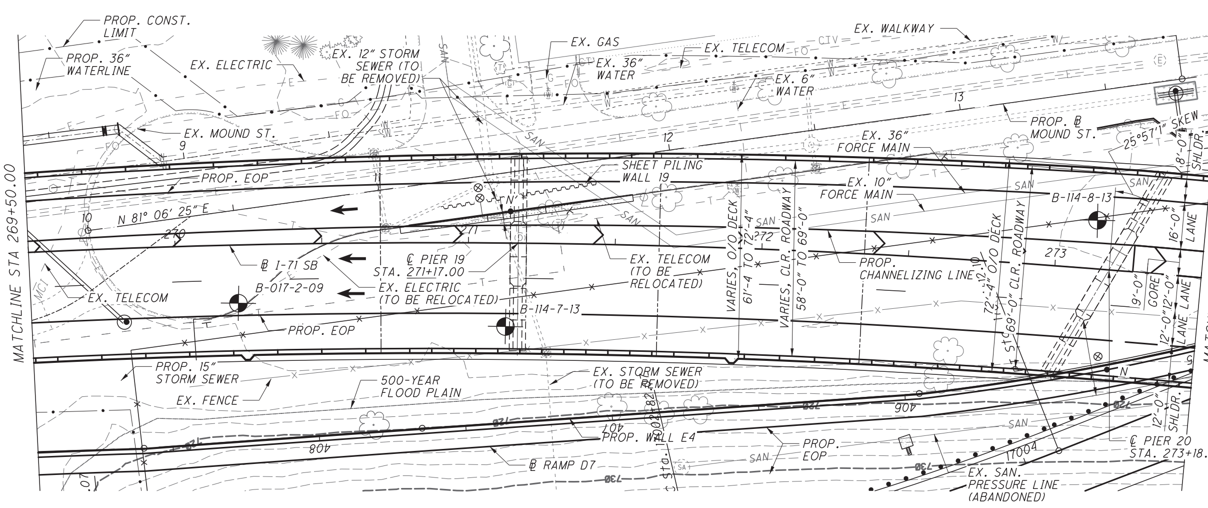
SITE PLAN (10 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

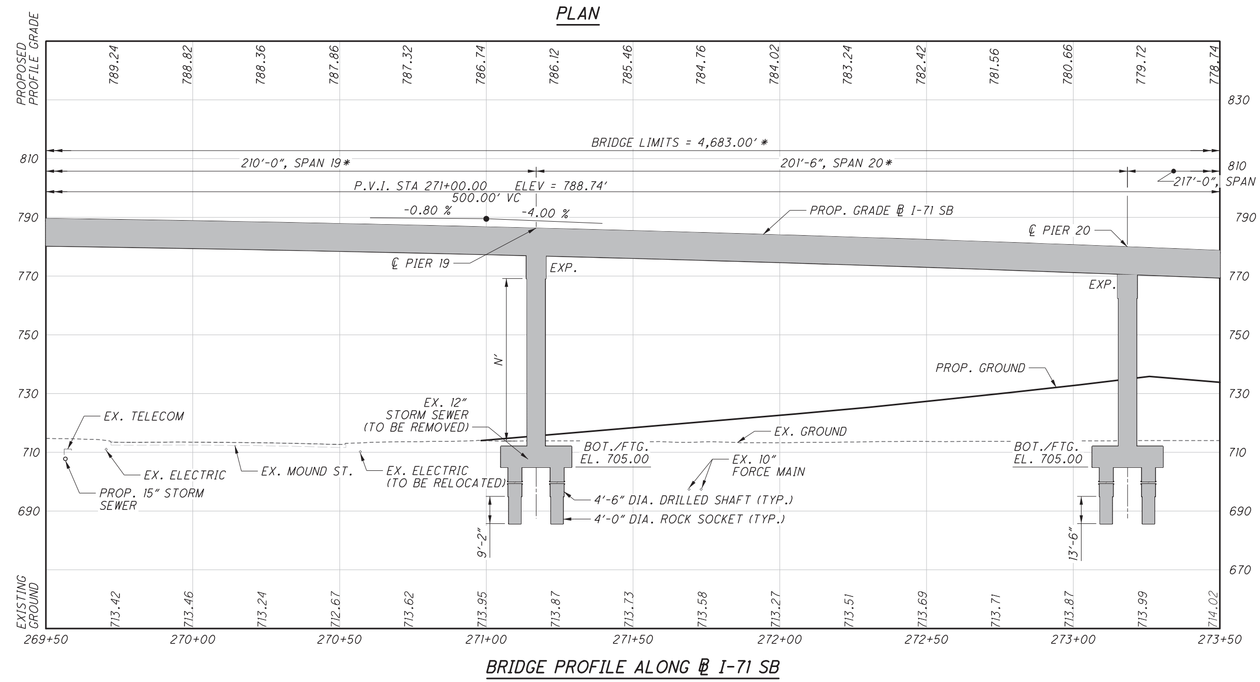
FRA-70-13.10
PID No. 89464

10/268

914/1239

ms consultants, inc.





BRIDGE PROFILE ALONG ℄ I-71 SB

LEGEND

- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG ℄ I-71 SB

HORIZONTAL CURVE DATA I-71 SB

CURVE C11
P.I. Sta. 269+71.54
Δ = 30° 53' 23" (RT)
Dc = 2° 00' 00"
R = 2,864.79'
T = 791.51'
L = 1,544.48'
E = 107.33'
PC Sta. 261+80.04
PT Sta. 277+24.52
V (des) = 60 MPH
e (max) = 0.045
WIDENING = N/A

- 15'-6" MIN. REQUIRED VERTICAL CLEARANCE

PT N = 16.80' ACTUAL VERTICAL CLEARANCE (SHOWN IN PROFILE VIEW ON NEXT SHEET)

PT N' = 44.72' ACTUAL VERTICAL CLEARANCE

⊗ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE) 25'-10⅝" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

⊗⊗ = 8'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE) 3'-6⅞" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-114-7-13	648.4±	639.3±
B-114-8-13	650.5±	637.0±

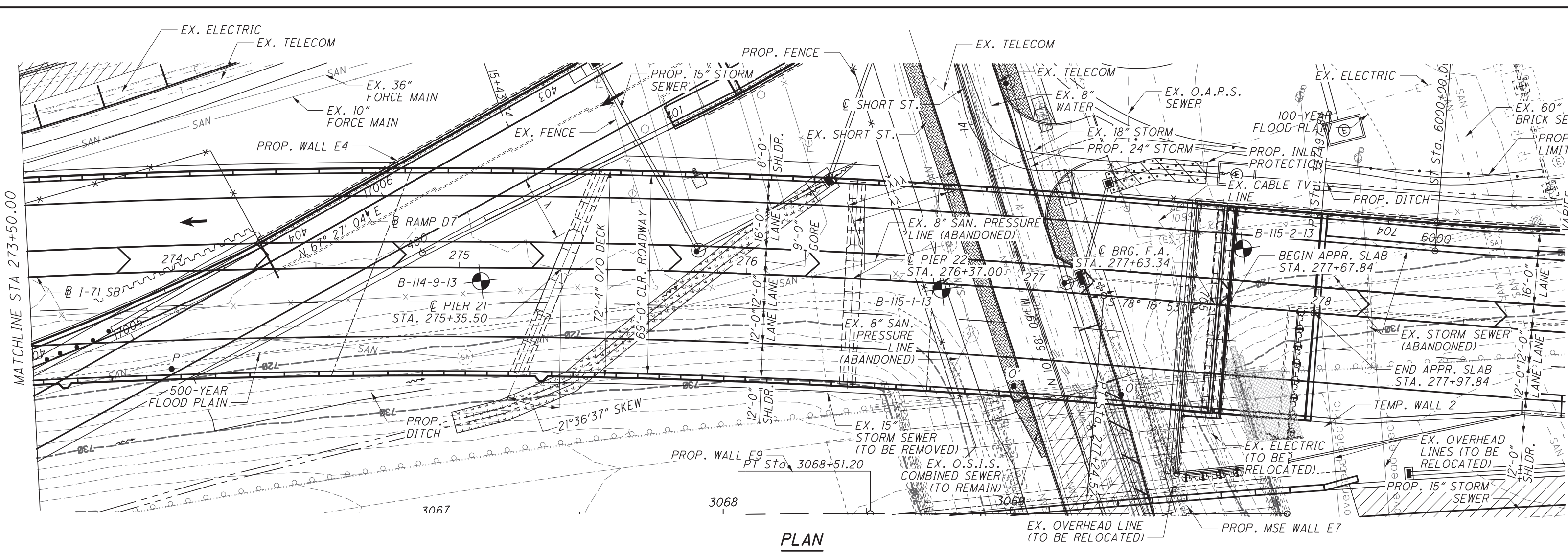
NOTES:

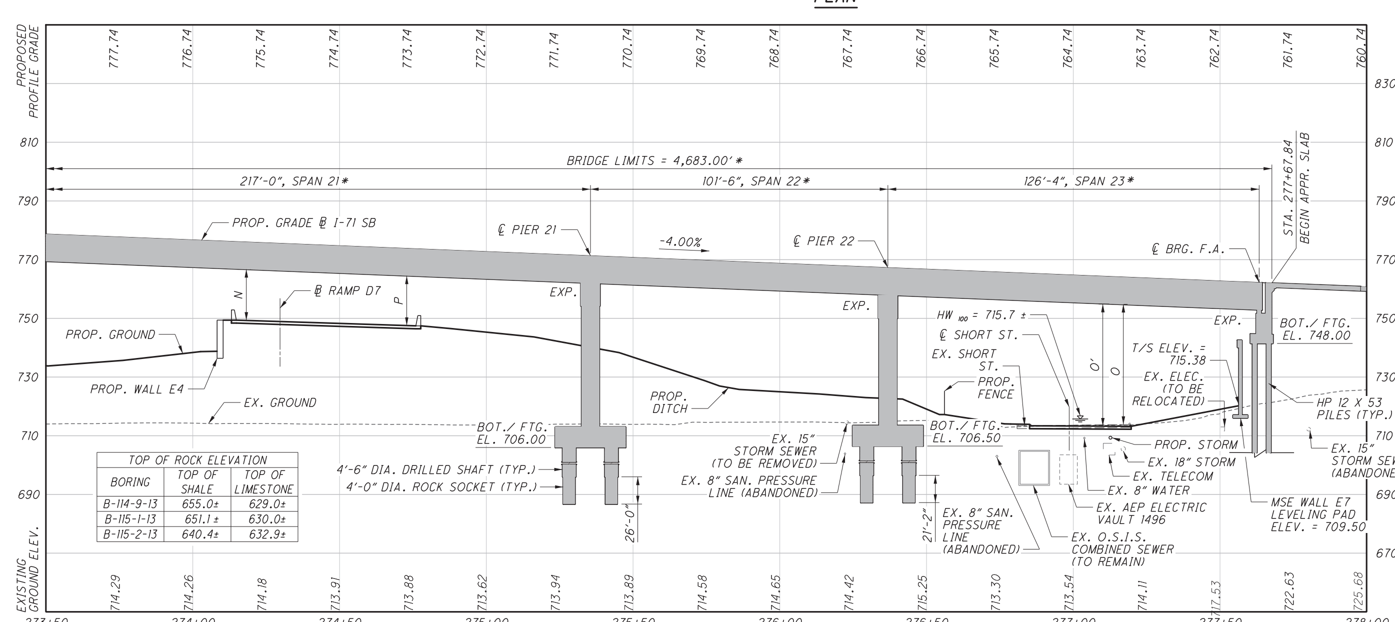
1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

DESIGN AGENCY					
ms consultants, inc. 2221 Schrock Road Columbus, Ohio 43229	REVIEWED GLG	DATE 15-Sep	DESIGNED CMA	DRAWN CMA	FRANKLIN COUNTY STA. 230+84.84 STA. 277+67.84
	STRUCTURE FILE NUMBER 2510025		CHECKED FBW	REVISED	

SITE PLAN (11 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464
11/268
915/1239





BRIDGE PROFILE ALONG ℄ I-71 SB

TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-114-9-13	655.0±	629.0±
B-115-1-13	651.1 ±	630.0±
B-115-2-13	640.4±	632.9±

LEGEND

- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG ℄ I-71 SB

- 15'-6" MIN. REQUIRED VERTICAL CLEARANCE

PT. N = 16.80' ACTUAL VERTICAL CLEARANCE (PT. ON PREVIOUS SHEET IN PLAN VIEW)

PT. O = 41.94' ACTUAL VERTICAL CLEARANCE

PT. O' = 43.57' ACTUAL VERTICAL CLEARANCE

PT. P = 16.82' ACTUAL VERTICAL CLEARANCE

λ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE) 22'-7⅞" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

λλ = 17'-0" = REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE) 34'-3⅜" = ACTUAL HORIZONTAL CLEARANCE

λλλ = 17'-0" = REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE) 39'-0¼" = ACTUAL HORIZONTAL CLEARANCE

✣ = 17'-0" = REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE) 9'-2" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

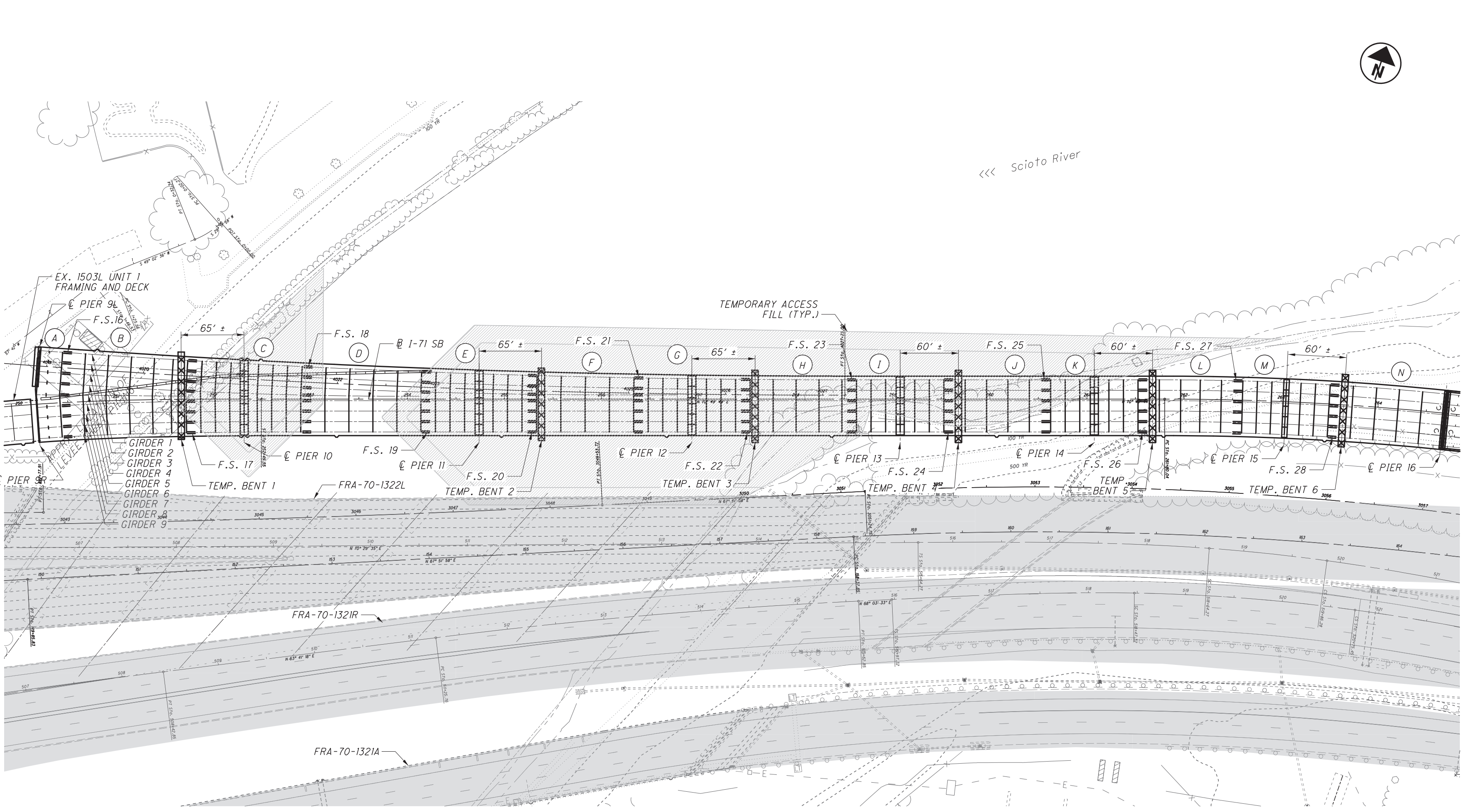
NOTES:

1. FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

DESIGN AGENCY					
ms consultants, inc. 2221 Schrock Road Columbus, Ohio 43229	REVIEWED GLG	DATE 15-Sep	DESIGNED CMA	DRAWN CMA	FRANKLIN COUNTY STA. 230+84.84 STA. 277+67.84
	STRUCTURE FILE NUMBER 2510025		CHECKED FBW	REVISED	

SITE PLAN (12 OF 12)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464
12/268
916/1239



LEGEND:

○ DENOTES GIRDER SEGMENT

ACTIVE ROADWAYS

F.S. FIELD SPLICE

NOTES:

1. FOR FRAMING PLAN, SEE SHEETS 132/268 THRU 133/268.
2. FOR STEEL ERECTION NOTES AND DETAILS, SEE SHEETS 259/268 THRU 262/268.

UNIT 2 SUGGESTED ERECTION SEQUENCE (1 OF 5)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

DESIGNED	DRAWN	REVIEWED	DATE
CMA	CMA	GLG	15-Sep
CHECKED FBW	REVISED	STRUCTURE FILE NUMBER 2510025	

DESIGN AGENCY: ms consultants, inc. 2221 Schrock Road Columbus, Ohio 43229

NOTES FOR STEEL ERECTION

THE ERECTION STAGES SHOWN ON SHEETS 259/268 THROUGH 262/268 ARE PRESENTED AS A CONCEPTUAL ERECTION PROCEDURE. CONTRACTOR TO SUBMIT THE ERECTION PROCEDURE FOR APPROVAL, THIS PROCEDURE MAY INCLUDE MODIFICATION OF THE CONCEPTUAL ERECTION PROCEDURE. CONTRACTOR MUST SUBMIT FOR APPROVAL A FULLY DEVELOPED SET OF DRAWINGS AND CALCULATIONS PREPARED, SIGNED, SEALED, AND DATED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF OHIO, INDICATING THE PROPOSED ERECTION PROCEDURE, WHICH INCLUDES ALL ASSUMPTIONS, CRANE PLACEMENTS, AND TEMPORARY BENT LOCATIONS INCLUDING DESIGN OF TEMPORARY BENTS, TEMPORARY BENT FOUNDATIONS (AS INDICATED BELOW) AND NECESSARY TEMPORARY EXCAVATION SUPPORT AND PROTECTION SYSTEMS REQUIRED TO CONSTRUCT TEMPORARY BENT FOUNDATIONS. THE PREPARER AND CHECKER SHALL BE TWO DIFFERENT ENGINEERS. REFER TO 501.05(B)(4) IN THE ODOT CMS.

CONTRACTOR MUST ENSURE STABILITY OF THE TEMPORARY BENTS AT ALL TIMES. PROVIDE FOR LONGITUDINAL TRANSLATION AT THE TOP OF TEMPORARY BENTS TO ALLOW FOR ADJUSTMENT OF THE GAP BETWEEN GIRDER SEGMENTS Ⓒ AND Ⓔ.

TEMPORARY BENTS:

THE DESIGN OF TEMPORARY BENTS AND FOUNDATIONS FOR TEMPORARY BENTS SHALL BE PREPARED, SIGNED, SEALED AND DATED BY AN OHIO REGISTERED ENGINEER. THE PREPARER AND CHECKER SHALL BE TWO DIFFERENT ENGINEERS. REFER TO 501.05(B)(4) IN THE ODOT CMS.

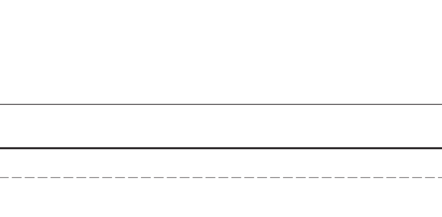
DESIGN THE FOUNDATIONS FOR TEMPORARY BENTS IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CURRENT FHWA GUIDELINES AND AASHTO GUIDE SPECIFICATIONS. DESIGN THE FOUNDATIONS FOR THE TEMPORARY BENTS FOR FINAL CONDITIONS AND ALL CONSTRUCTION STAGES. WHERE APPROPRIATE, INCLUDE SURCHARGE LOADS DUE TO VEHICLE TRAFFIC AND SURCHARGE DUE TO CONSTRUCTION EQUIPMENT IN THE DESIGN. SUBMIT DESIGN CALCULATIONS AND DETAILED DRAWINGS, SIGNED AND SEALED BY A PROFFESSIONAL ENGINEER IN THE STATE OF OHIO, TO THE STATE'S REPRESENTATIVE FOR REVIEW. INCLUDE IN THE DESIGN CALCULATIONS ALL MATERIAL PROPERTIES (PILE SIZE AND STRENGTH TIMBER SIZES AND CONCRETE STRENGTHS), DESIGN LOADS, AND DESIGN ASSUMPTIONS. INCLUDE THE COMPLETED DETAILED DRAWINGS OF THE FOUNDATIONS ALL DESIGN DIMENSIONS, LIMIT OF WORK, ELEVATIONS, AND MATERIALS, SPECIFIC CONSTRUCTION PROCEDURES AND TESTING REQUIREMENTS ARE TO BE INCLUDED AS PART OF THE SUBMITTAL. ALLOW 14 DAYS FOR REVIEW OF THE SUBMISSION BY THE DEPARTMENT.

TYPICAL STEEL ERECTION NOTES FOR INTERMEDIATE SEGMENT

(SEQUENCE DESCRIBED FOR GIRDER SEGMENTS Ⓚ AND Ⓛ. SEGMENTS Ⓘ AND Ⓙ, Ⓔ AND Ⓕ SIMILAR.)

A. ERECT GIRDER 9, SEGMENT Ⓛ. PLACE THE SEGMENT ON THE TEMPORARY BENT AND INSTALL FIELD SPLICE 27, TIGHTENING ALL BOLTS. CONTINUE TO SUPPORT THE SEGMENT WITH THE CRANE.
B. USING A SECOND CRANE, ERECT GIRDER 9, SEGMENT Ⓚ. PLACE THE SEGMENT ON THE PIER BEARINGS. INSTALL FIELD SPLICE 26, TIGHTENING ALL BOLTS. CONTINUE TO SUPPORT SEGMENTS Ⓛ AND Ⓚ WITH THE TWO CRANES.
C. INSTALL A-FRAME BRACING AT THE PIER TO SECURE GIRDER 9.
D. RELEASE GIRDER Ⓚ FROM THE SECOND CRANE AND REHOOK NEAR THE FIELD SPLICE 25.
E. ONCE THE SECOND CRANE IS REHOOKED NEAR FIELD SPLICE 25, THE FIRST CRANE MAY RELEASE GIRDER SEGMENT Ⓛ.
F. USING THE FIRST CRANE, ERECT GIRDER 8, SEGMENT Ⓛ. PLACE THE SEGMENT ON THE TEMPORARY BENT AND INSTALL FIELD SPLICE 27, TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN GIRDER 9 AND GIRDER 8.
G. RELEASE THE SUPPORT FROM THE SECOND CRANE AT THE SPLICE. ERECT GIRDER 8, SEGMENT Ⓚ. PLACE THE SEGMENT ON THE PIER BEARINGS AND INSTALL FIELD SPLICE 26, TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN GIRDER 9 AND GIRDER 8.
H. ONCE ALL SPLICES AND CROSS FRAMES ARE INSTALLED, BOTH CRANES MAY RELEASE THE GIRDER SEGMENTS.
I. REPEAT STEPS "F" THROUGH "H" FOR GIRDERS 7 THROUGH 1, AS APPLICABLE.

REACTIONS AT SUPPORTS (KIPS)								
SUPPORT	STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5	STAGE 6	STAGE 7	BENTS REMOVED
PIER 9	-	-	-	-	-	360.0	360.0	456.3
TEMPORARY BENT 1	-	-	-	-	-	542.7	540.9	-
PIER 10	-	-	-	-	-	543.2	794.4	1188.8
PIER 11	-	-	-	-	391.5	391.5	648.3	958.4
TEMPORARY BENT 2	-	-	-	-	387.8	387.8	407.4	-
PIER 12	-	-	-	348.8	454.5	454.5	436.1	808.5
TEMPORARY BENT 3	-	-	-	328.2	328.2	328.2	341.4	-
PIER 13	-	-	291.0	390.6	390.6	390.6	377.4	703.2
TEMPORARY BENT 4	-	-	303.6	303.6	303.6	303.6	318.6	-
PIER 14	-	291.0	376.8	376.8	376.8	376.8	361.8	681.6
TEMPORARY BENT 5	-	295.2	295.2	295.2	295.2	295.2	306.0	-
PIER 15	291.0	376.8	376.8	376.8	376.8	376.8	365.4	627.6
TEMPORARY BENT 6	264.6	264.6	264.6	264.6	264.6	264.6	263.4	-
PIER 16	166.8	166.8	166.8	166.8	166.8	166.8	166.8	245.4



STAGE 1 NOTES:

A. INSTALL TEMPORARY BENT 6.
B. SET ALL BEARINGS ON PIER 16.
C. BLOCK ALL BEARINGS AT PIER 16 TO PREVENT TRANSLATION IN THE LONGITUDINAL DIRECTION.
D. SET ALL BEARINGS ON PIER 15.
E. WHILE ON THE GROUND, INSTALL ALL CROSSFRAMES BETWEEN SEGMENT Ⓝ GIRDER 9 AND GIRDER 8.
F. WHILE ON THE GROUND, INSTALL ALL CROSSFRAMES BETWEEN SEGMENT Ⓜ GIRDER 9 AND GIRDER 8.
G. LIFT SEGMENT Ⓝ GIRDER 9 AND GIRDER 8 TOGETHER AND PLACE ON PIER 16 BEARINGS AND TEMPORARY BENT 6. CONTINUE TO HOLD THE STEEL SEGMENTS WITH CRANE.
H. USING A SECOND CRANE, LIFT SEGMENT Ⓜ GIRDER 9 AND GIRDER 8 TOGETHER. POSITION THE GIRDER SEGMENT ON THE PIER BEARINGS AND INSTALL FIELD SPLICE 28 FOR GIRDER 9 AND GIRDER 8 WHILE SUPPORTING THE STEEL WITH THE CRANE. TIGHTEN ALL FIELD SPLICE BOLTS.
I. WHILE CONTINUING TO SUPPORT SEGMENT Ⓝ WITH THE FIRST CRANE AND SEGMENT Ⓜ WITH THE SECOND CRANE, INSTALL ALL A-FRAME BRACING, BLOCKING, AND TIE-DOWNS REQUIRED.
J. RELEASE BOTH CRANES AFTER ASSURING STABILITY OF THE STEEL.
K. ERECT SEGMENT Ⓝ GIRDER 7, PLACING IT ON THE PIER 16 BEARING AND TEMPORARY BENT 6. INSTALL ALL CROSS FRAMES BETWEEN GIRDER 7 AND GIRDER 8, FULLY TIGHTENING BOLTS. CONTINUE TO SUPPORT THE STEEL SEGMENT WITH THE CRANE.
L. USING A SECOND CRANE, ERECT SEGMENT Ⓜ GIRDER 7. POSITION THE SEGMENT ON THE PIER 15 BEARING AND INSTALL FIELD SPLICE 28 WHILE SUPPORTING THE STEEL WITH THE CRANE. TIGHTEN ALL FIELD SPLICE BOLTS. INSTALL ALL CROSS FRAMES BETWEEN GIRDER 7 AND GIRDER 8.
M. RELEASE BOTH CRANES AFTER ASSURING STABILITY OF THE STEEL.
N. REPEAT STEPS "K" THROUGH "M" FOR GIRDERS 6, 4, 3, 2, AND 1.
O. LEAVE TEMPORARY BENT 6 IN PLACE.

STAGE 1

STEEL ERECTION NOTES FOR STAGE 4

(SEQUENCE DESCRIBED FOR GIRDER SEGMENTS Ⓖ AND Ⓗ.)

A. ERECT GIRDER 9, SEGMENT Ⓗ. PLACE THE SEGMENT ON THE TEMPORARY BENT AND INSTALL FIELD SPLICE 23, TIGHTENING ALL BOLTS. CONTINUE TO SUPPORT THE SEGMENT WITH THE CRANE.
B. USING A SECOND CRANE, ERECT GIRDER 9, SEGMENT Ⓖ. PLACE THE SEGMENT ON THE PIER BEARINGS. INSTALL FIELD SPLICE 22, TIGHTENING ALL BOLTS. CONTINUE TO SUPPORT SEGMENTS Ⓗ AND Ⓖ WITH THE TWO CRANES.
C. INSTALL A-FRAME BRACING AT THE PIER TO SECURE GIRDER 9.
D. RELEASE GIRDER SEGMENT Ⓖ FROM THE SECOND CRANE AND REHOOK NEAR THE FIELD SPLICE 21.
E. ONCE THE SECOND CRANE IS REHOOKED NEAR FIELD SPLICE 21, THE FIRST CRANE MAY RELEASE GIRDER SEGMENT Ⓗ.
F. USING THE FIRST CRANE, ERECT GIRDER 8, SEGMENT Ⓗ. PLACE THE SEGMENT ON THE TEMPORARY BENT AND INSTALL FIELD SPLICE 23, TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN GIRDER 9 AND GIRDER 8.
G. RELEASE THE SUPPORT FROM THE SECOND CRANE AT THE SPLICE. ERECT GIRDER 8, SEGMENT Ⓖ. PLACE THE SEGMENT ON THE PIER BEARINGS AND INSTALL FIELD SPLICE 22, TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN GIRDER 9 AND GIRDER 8.
H. ONCE ALL SPLICES AND CROSS FRAMES ARE INSTALLED, BOTH CRANES MAY RELEASE THE GIRDER SEGMENTS.
I. REPEAT STEPS "F" THROUGH "H" FOR GIRDER 7 AND GIRDER 6.
J. ERECT GIRDER 2, SEGMENT Ⓗ. PLACE THE SEGMENT ON THE TEMPORARY BENT AND INSTALL FIELD SPLICE 23, TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN GIRDER 9 AND GIRDER 8.
K. USING A SECOND CRANE, ERECT GIRDER 2, SEGMENT Ⓖ. PLACE THE SEGMENT ON THE PIER BEARINGS. INSTALL FIELD SPLICE 22, TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN GIRDER 6 AND GIRDER 2, INCLUDING HEADER "C".
L. RELEASE GIRDER SEGMENT Ⓖ FROM THE SECOND CRANE AND REHOOK NEAR FIELD SPLICE 21.
M. ONCE THE SECOND CRANE IS REHOOKED NEAR FIELD SPLICE 21, THE FIRST CRANE MAY RELEASE GIRDER SEGMENT Ⓗ.
N. USING THE FIRST CRANE, ERECT GIRDER 1, SEGMENT Ⓗ. PLACE THE SEGMENT ON THE TEMPORARY BENT AND INSTALL FIELD SPLICE 23, TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN GIRDER 2 AND GIRDER 1.
O. RELEASE THE SUPPORT FROM THE SECOND CRANE AT THE SPLICE. ERECT GIRDER 1, SEGMENT Ⓖ. PLACE THE SEGMENT ON THE PIER BEARINGS AND INSTALL FIELD SPLICE 22, TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN GIRDER 2 AND GIRDER 1.
P. ONCE ALL SPLICES AND CROSS FRAMES ARE INSTALLED, BOTH CRANES MAY RELEASE THE GIRDER SEGMENTS.
Q. SET PARTIAL LENGTH GIRDER 3, SEGMENT Ⓖ INTO PLACE AND HOLD WITH THE CRANE. INSTALL SPLICE AT HEADER "C", TIGHTENING ALL BOLTS. INSTALL CROSS FRAMES BETWEEN PARTIAL LENGTH GIRDER 3 AND GIRDER 6. INSTALL CROSS FRAMES BETWEEN PARTIAL LENGTH GIRDER 3 AND GIRDER 2. CRANE MAY RELEASE PARTIAL LENGTH GIRDER 3, SEGMENT Ⓖ.

WEIGHT OF EACH GIRDER IN A SEGMENT									
	G1 (KIPS)	G2 (KIPS)	G3 (KIPS)	G4 (KIPS)	G5 (KIPS)	G6 (KIPS)	G7 (KIPS)	G8 (KIPS)	G9 (KIPS)
SEGMENT A	12.24	12.25	12.05	12.06	12.09	12.52	12.47	12.43	12.38
SEGMENT B	51.58	51.63	50.79	50.84	49.09	51.38	51.18	50.98	50.78
SEGMENT C	64.00	64.06	58.63	58.69	-	64.22	64.15	64.08	64.00
SEGMENT D	47.12	47.16	47.21	45.40	-	47.31	47.31	47.31	47.31
SEGMENT E	55.15	51.11	48.99	-	-	51.14	51.12	51.14	55.23
SEGMENT F	42.42	42.46	42.49	-	-	42.48	42.48	42.48	42.48
SEGMENT G	51.32	51.37	15.46	-	-	51.47	51.47	51.47	51.47
SEGMENT H	42.29	42.33	-	-	-	42.29	42.29	42.29	42.29
SEGMENT I	44.75	44.75	-	-	-	44.75	44.75	44.75	44.75
SEGMENT J	38.62	38.62	-	-	-	38.62	38.62	38.62	38.62
SEGMENT K	44.75	44.75	-	-	-	44.75	44.75	44.75	44.75
SEGMENT L	37.85	37.74	-	-	-	37.63	37.52	37.41	37.31
SEGMENT M	44.85	44.69	-	-	-	44.54	44.38	44.22	44.04
SEGMENT N	44.70	44.54	-	-	-	44.37	44.20	44.04	43.89

LEGEND:

○ DENOTES GIRDER SEGMENT

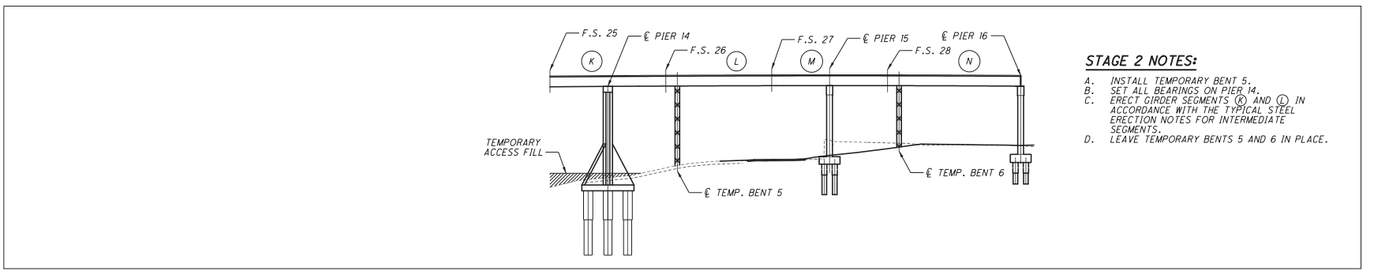
F.S. DENOTES FIELD SPLICE - FOR LOCATIONS SEE SHEETS 132/268 THRU 133/268.

UNIT 2 SUGGESTED ERECTION SEQUENCE (2 OF 5)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

DESIGNED	DRAWN	REVIEWED	DATE
CMA	CMA	GLG	15-Sep
CHECKED FBW	REVISED	STRUCTURE FILE NUMBER 2510025	

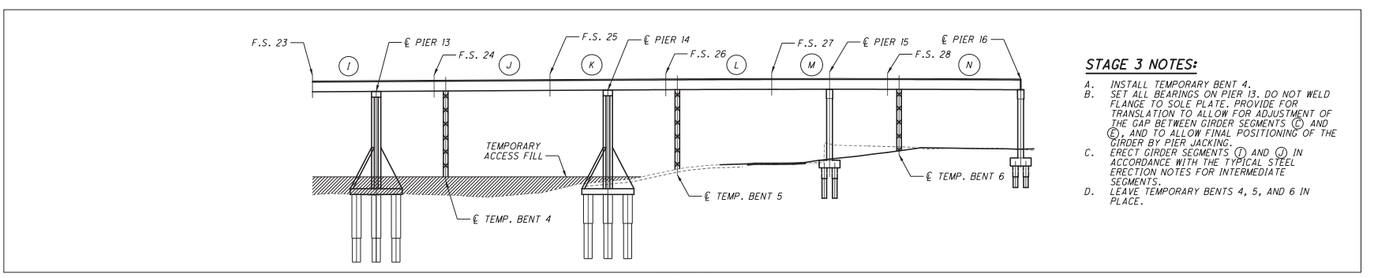
DESIGN AGENCY: ms consultants, inc. 2221 Schrock Road Columbus, Ohio 43229



STAGE 2

STAGE 2 NOTES:

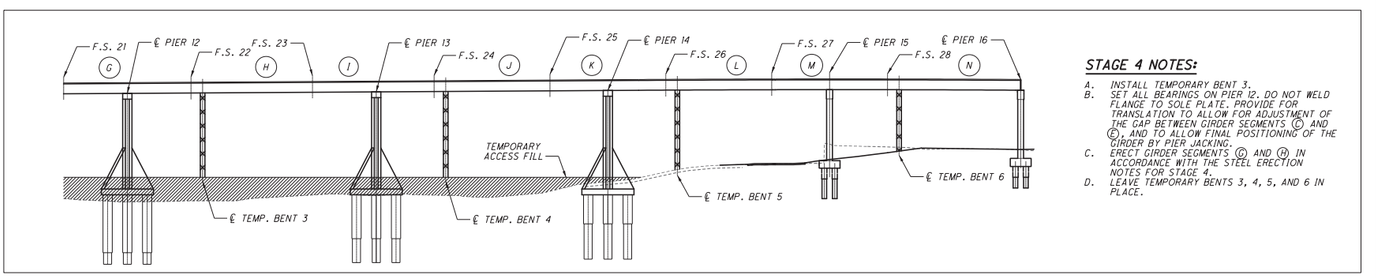
A. INSTALL TEMPORARY BENT 5.
B. SET ALL BEARINGS ON PIER 14.
C. ERECT GIRDER SEGMENTS (K) AND (L) IN ACCORDANCE WITH THE TYPICAL STEEL ERECTION NOTES FOR INTERMEDIATE SEGMENTS.
D. LEAVE TEMPORARY BENTS 5 AND 6 IN PLACE.



STAGE 3

STAGE 3 NOTES:

A. INSTALL TEMPORARY BENT 4.
B. SET ALL BEARINGS ON PIER 13. DO NOT WELD FLANGE TO SOLE PLATE. PROVIDE FOR TRANSLATION TO ALLOW FOR ADJUSTMENT OF THE GAP BETWEEN GIRDER SEGMENTS (D) AND (E), AND TO ALLOW FINAL POSITIONING OF THE GIRDER BY PIER JACKING.
C. ERECT GIRDER SEGMENTS (I) AND (J) IN ACCORDANCE WITH THE TYPICAL STEEL ERECTION NOTES FOR INTERMEDIATE SEGMENTS.
D. LEAVE TEMPORARY BENTS 4, 5, AND 6 IN PLACE.



STAGE 4

STAGE 4 NOTES:

A. INSTALL TEMPORARY BENT 3.
B. SET ALL BEARINGS ON PIER 12. DO NOT WELD FLANGE TO SOLE PLATE. PROVIDE FOR TRANSLATION TO ALLOW FOR ADJUSTMENT OF THE GAP BETWEEN GIRDER SEGMENTS (D) AND (E), AND TO ALLOW FINAL POSITIONING OF THE GIRDER BY PIER JACKING.
C. ERECT GIRDER SEGMENTS (G) AND (H) IN ACCORDANCE WITH THE STEEL ERECTION NOTES FOR STAGE 4.
D. LEAVE TEMPORARY BENTS 3, 4, 5, AND 6 IN PLACE.

NOTES:

1. FOR TYPICAL NOTES AND LEGEND, SEE SHEET 259/268.
2. FOR ERECTION PLAN, SEE SHEET 258/268.

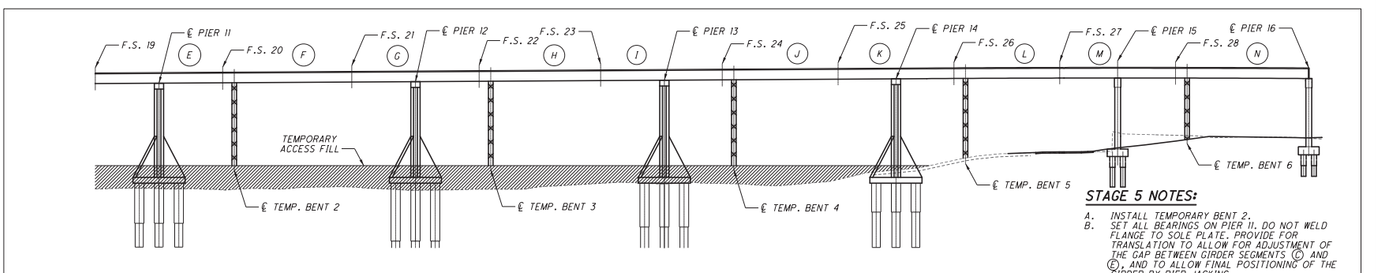
DESIGN AGENCY: ms consultants, inc. 2221 Schrock Road, Columbus, Ohio 43229
DESIGNED CMS | DRAWN CMS | REVIEWED CLC | DATE 12-Sep-25
CHECKED FBW | REVISED | STAGE FILE NAME: 2510025

UNIT 2 SUGGESTED ERECTION SEQUENCE (3 OF 5)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

260/268
1166/1239

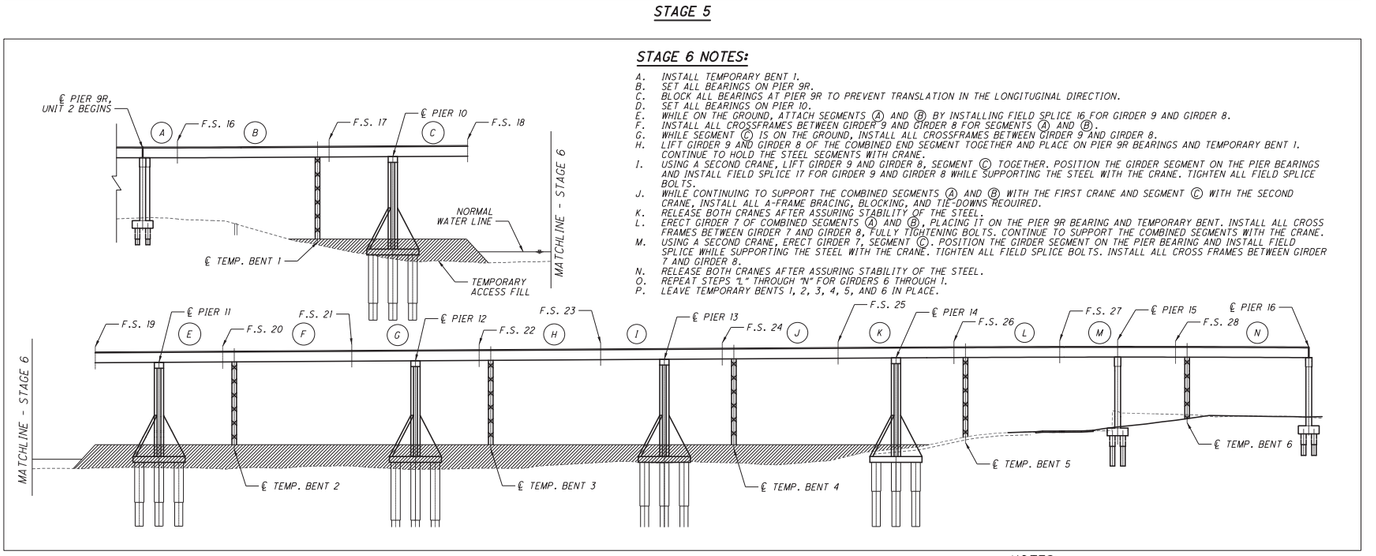
ms consultants, inc.



STAGE 5

STAGE 5 NOTES:

A. INSTALL TEMPORARY BENT 2.
B. SET ALL BEARINGS ON PIER 11. DO NOT WELD FLANGE TO SOLE PLATE. PROVIDE FOR TRANSLATION TO ALLOW FOR ADJUSTMENT OF THE GAP BETWEEN GIRDER SEGMENTS (C) AND (D), AND TO ALLOW FINAL POSITIONING OF THE GIRDER BY PIER JACKING.
C. ERECT GIRDER SEGMENTS (E) AND (F) IN ACCORDANCE WITH THE TYPICAL STEEL ERECTION NOTES FOR INTERMEDIATE SEGMENTS.
D. LEAVE TEMPORARY BENTS 2, 3, 4, 5 AND 6 IN PLACE.



STAGE 6

STAGE 6 NOTES:

A. INSTALL TEMPORARY BENT 1.
B. SET ALL BEARINGS ON PIER 9R.
C. BLOCK ALL BEARINGS AT PIER 9R TO PREVENT TRANSLATION IN THE LONGITUDINAL DIRECTION.
D. SET ALL BEARINGS ON PIER 10.
E. WHILE ON THE GROUND, ATTACH SEGMENTS (A) AND (B) BY INSTALLING FIELD SPLICE 16 FOR GIRDER 9 AND GIRDER 8.
F. INSTALL ALL CROSSFRAMES BETWEEN GIRDER 9 AND GIRDER 8 FOR SEGMENTS (A) AND (B).
G. WHILE SEGMENT (C) IS ON THE GROUND, INSTALL ALL CROSSFRAMES BETWEEN GIRDER 9 AND GIRDER 8.
H. LIFT GIRDER 9 AND GIRDER 8 OF THE COMBINED END SEGMENT TOGETHER AND PLACE ON PIER 9R BEARINGS AND TEMPORARY BENT 1. CONTINUE TO HOLD THE STEEL SEGMENTS WITH CRANE.
I. USING A SECOND CRANE, LIFT GIRDER 9 AND GIRDER 8, SEGMENT (C) TOGETHER. POSITION THE GIRDER SEGMENT ON THE PIER BEARINGS AND INSTALL FIELD SPLICE 17 FOR GIRDER 9 AND GIRDER 8 WHILE SUPPORTING THE STEEL WITH THE CRANE. TIGHTEN ALL FIELD SPLICE BOLTS.
J. WHILE CONTINUING TO SUPPORT THE COMBINED SEGMENTS (A) AND (B) WITH THE FIRST CRANE AND SEGMENT (C) WITH THE SECOND CRANE, INSTALL ALL A-FRAME BRACING, BLOCKING, AND TIE-DOWNS REQUIRED.
K. RELEASE BOTH CRANES AFTER ASSURING STABILITY OF THE STEEL.
L. ERECT GIRDER 7 OF COMBINED SEGMENTS (A) AND (B), PLACING IT ON THE PIER 9R BEARING AND TEMPORARY BENT. INSTALL ALL CROSS FRAMES BETWEEN GIRDER 7 AND GIRDER 8, FULLY TIGHTENING BOLTS. CONTINUE TO SUPPORT THE COMBINED SEGMENTS WITH THE CRANE.
M. USING A SECOND CRANE, ERECT GIRDER 7, SEGMENT (C). POSITION THE GIRDER SEGMENT ON THE PIER BEARING AND INSTALL FIELD SPLICE WHILE SUPPORTING THE STEEL WITH THE CRANE. TIGHTEN ALL FIELD SPLICE BOLTS. INSTALL ALL CROSS FRAMES BETWEEN GIRDER 7 AND GIRDER 8.
N. RELEASE BOTH CRANES AFTER ASSURING STABILITY OF THE STEEL.
O. REPEAT STEPS "I." THROUGH "N" FOR GIRDERS 6 THROUGH 1.
P. LEAVE TEMPORARY BENTS 1, 2, 3, 4, 5, AND 6 IN PLACE.

NOTES:

1. FOR TYPICAL NOTES AND LEGEND, SEE SHEET 259/268.
2. FOR ERECTION PLAN, SEE SHEET 258/268.

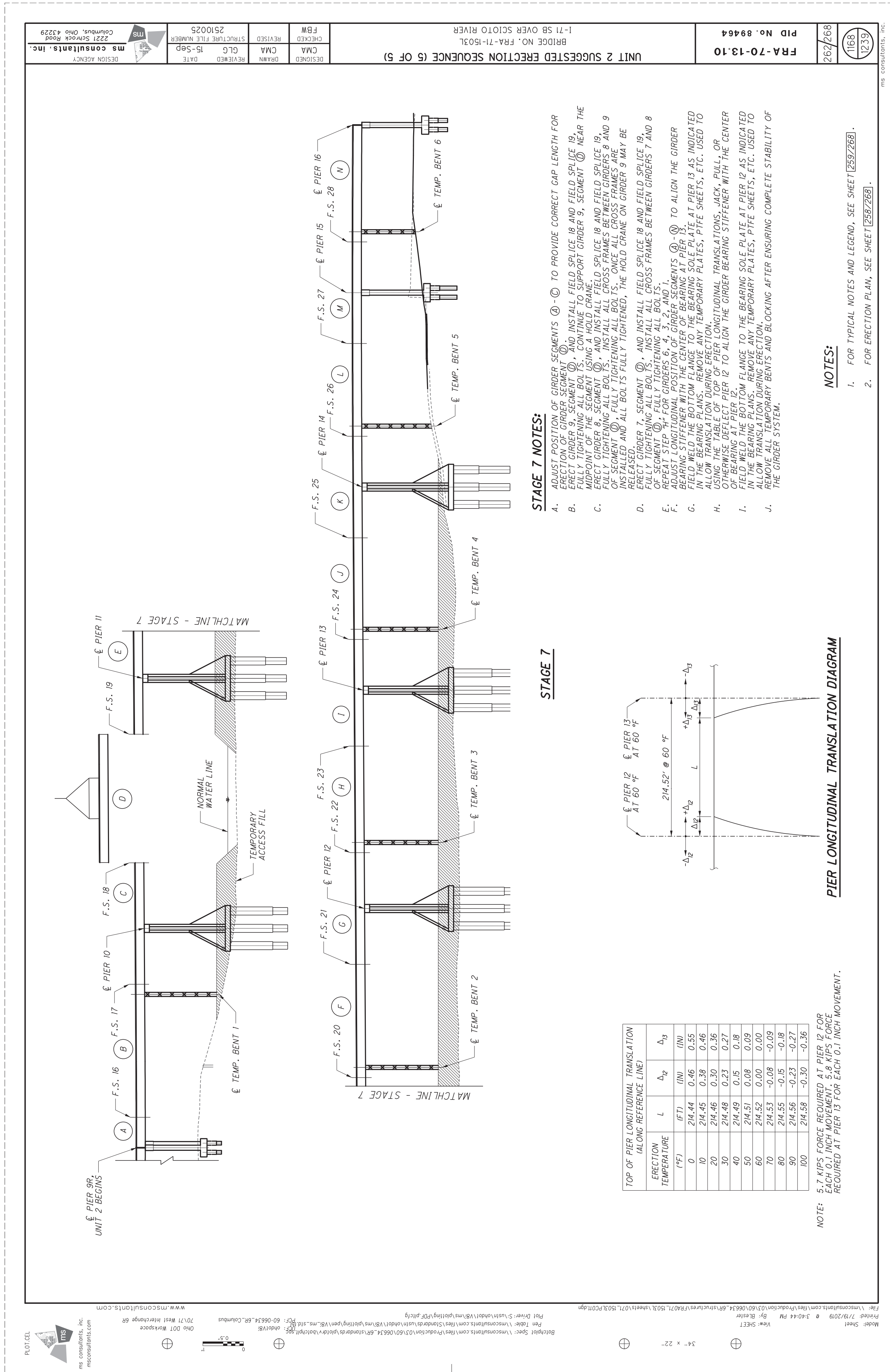
DESIGN AGENCY: ms consultants, inc. 2221 Schrock Road, Columbus, Ohio 43229
DESIGNED CMS | DRAWN CMS | REVIEWED CLC | DATE 12-Sep-25
CHECKED FBW | REVISED | STAGE FILE NAME: 2510025

UNIT 2 SUGGESTED ERECTION SEQUENCE (4 OF 5)
BRIDGE NO. FRA-71-1503L
I-71 SB OVER SCIOTO RIVER

FRA-70-13.10
PID No. 89464

261/268
1167/1239

ms consultants, inc.



US Army Corps of Engineers
Huntington District

Permit Number: 2020-00476-SCR

Name of Permittee: Ohio Department of Transportation

Date of Issuance:

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers - Huntington District
Building 10/ Section 10
PO Box 3990
Columbus, OH 43218-3990

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

__________________________ ________________________
Signature of Permittee Date

US Army Corps of Engineers
Huntington District

Permit Number: 2018-01012-SCR

Name of Permittee: Ohio Department of Transportation

Date of Issuance:

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers - Huntington District
Building 10/ Section 10
PO Box 3990
Columbus, OH 43218-3990

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____
Signature of Permittee Date