

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

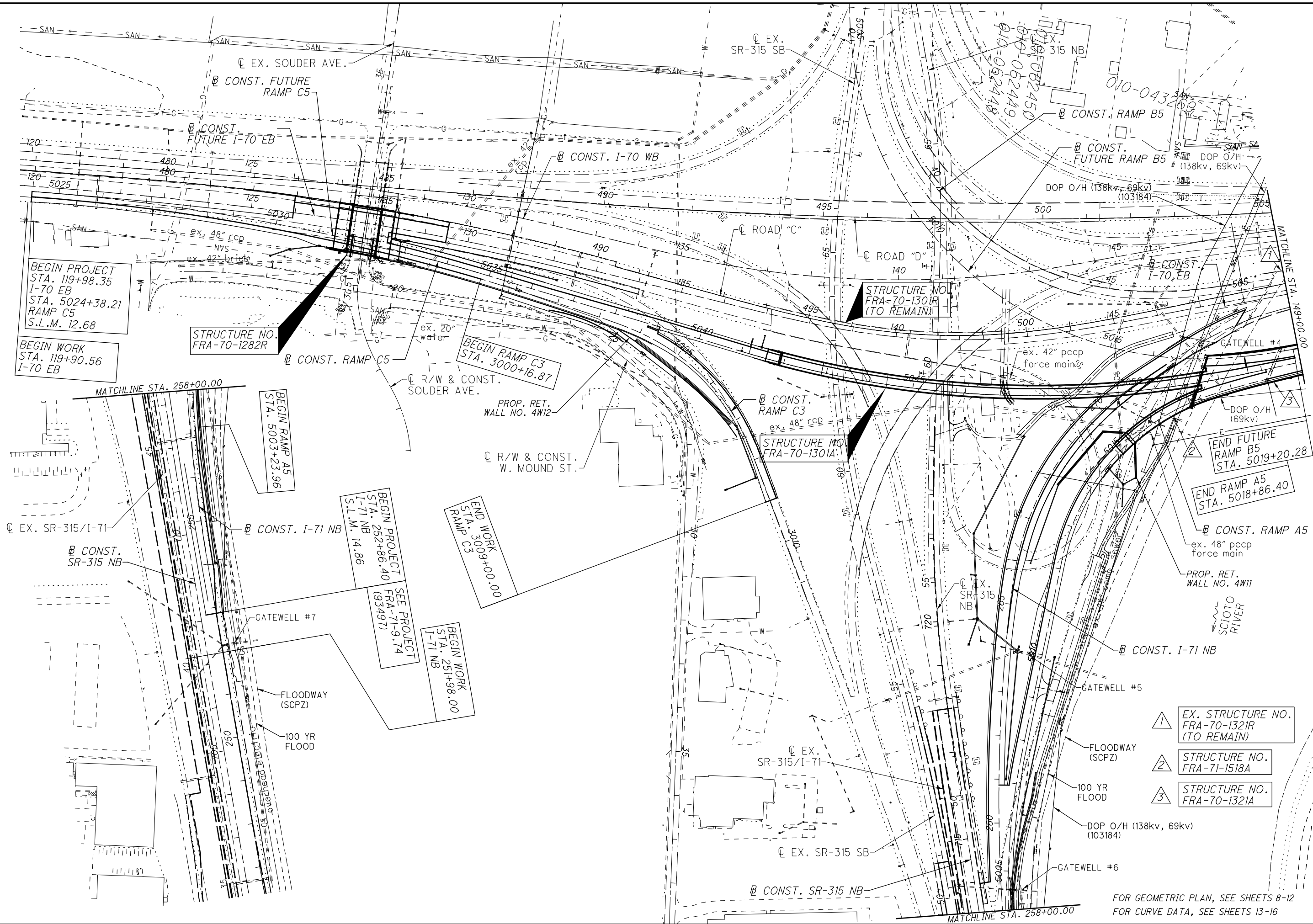
TABLE A. DISCHARGE AND FILL QUANTITIES

STREAMS						Permanent Fill Within/Below OHWM												Total Permanent Fill Within OHWM			Total Temporary Fill Within OHWM			TOTAL IMPACT (Upstream to Downstream)	TOTAL NEW IMPACT (Total Impact Minus Pre-Existing Impacts)
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.)										
						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	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												Total Permanent Fill Within OHWM			Total Temporary Fill Within OHWM			TOTAL IMPACT (Upstream to Downstream)	TOTAL NEW IMPACT (Total Impact Minus Pre-Existing Impacts)
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.)										
						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



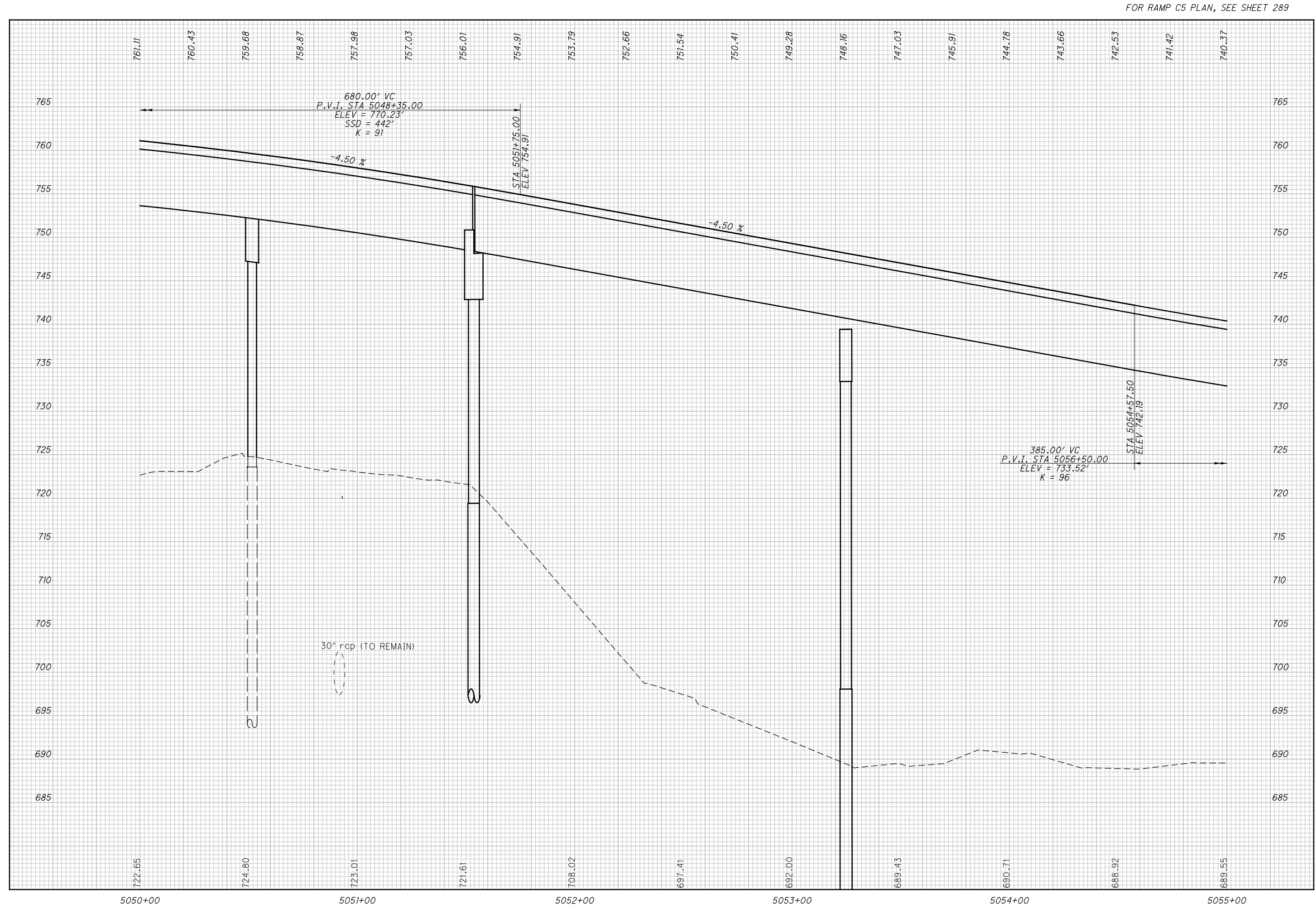
SCHEMATIC PLAN

FOR GEOMETRIC PLAN, SEE SHEETS 8-12
FOR CURVE DATA, SEE SHEETS 13-16

TAPER TABLE									
TAPER CODE	BEGINNING STATION		ENDING STATION		SIDE	DESCRIPTION	BEGIN WIDTH	END WIDTH	TAPER RATE
Q	5051+75.92	RAMP C5	5053+80.21	RAMP C5	LT	PAVEMENT	16.00'	12.00'	51:1
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

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

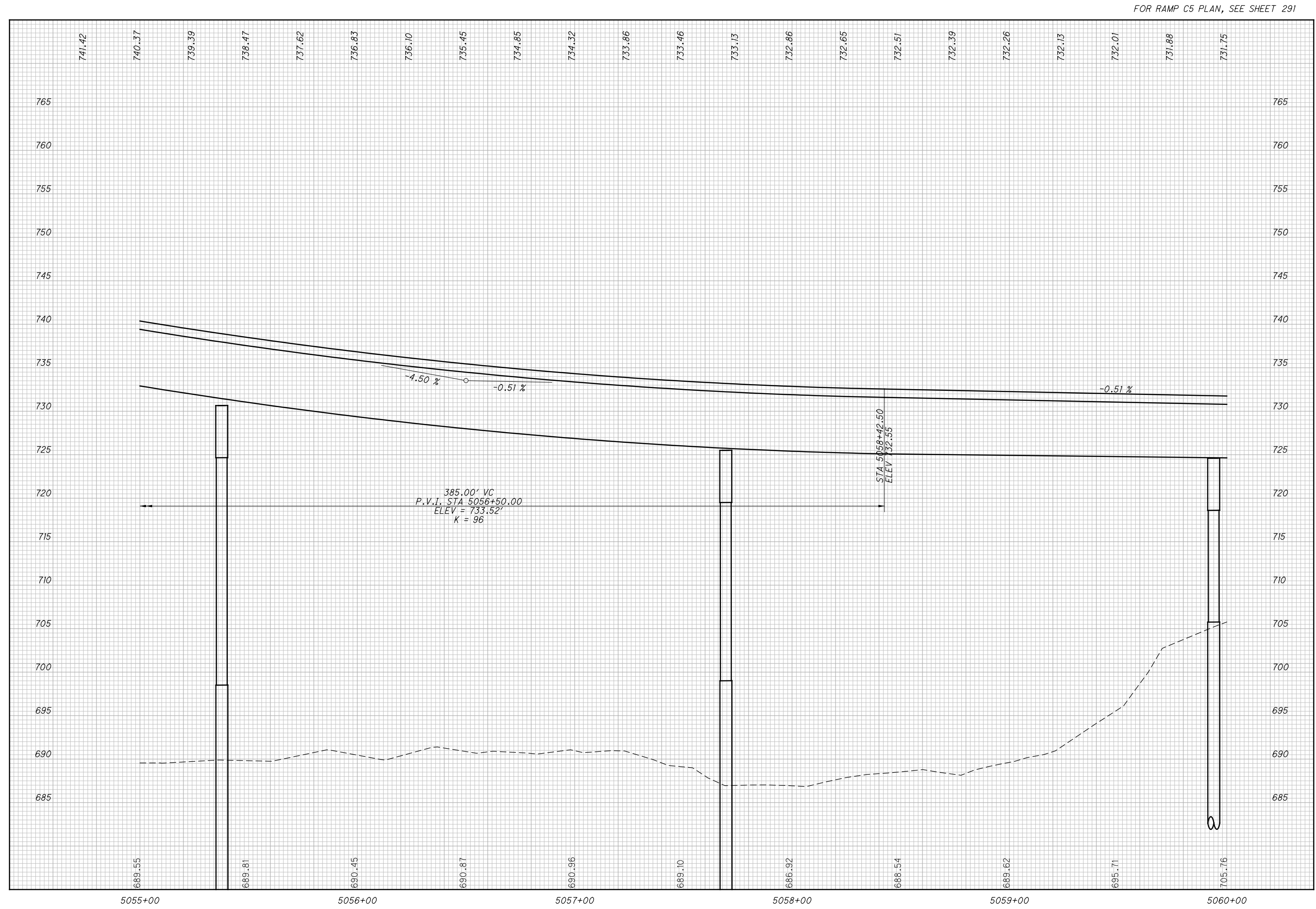
D:\2012\2012048\FRA\105523\ROADWAY\SHEETS\105523\F057.DGN
7/17/2018
10:38:21 AM
G00TV81STD_USER



FOR RAMP C5 PLAN, SEE SHEET 289

CALCULATED	CHECKED	PROFILE - RAMP C5 STA. 5050+00.00 TO STA. 5055+00.00	FRA - 70 / 71 - 12.68 / 14.86	290
				1675

D:\2012\2012048\FRA\105523\ROADWAY\105523\RD\058.DGN
7/17/2018
10:39:51 AM
G00TV61STD_USER



FOR RAMP C5 PLAN, SEE SHEET 291

CALCULATED

CHECKED

PROFILE - RAMP C5

STA. 5055+00.00 TO STA. 5060+00.00

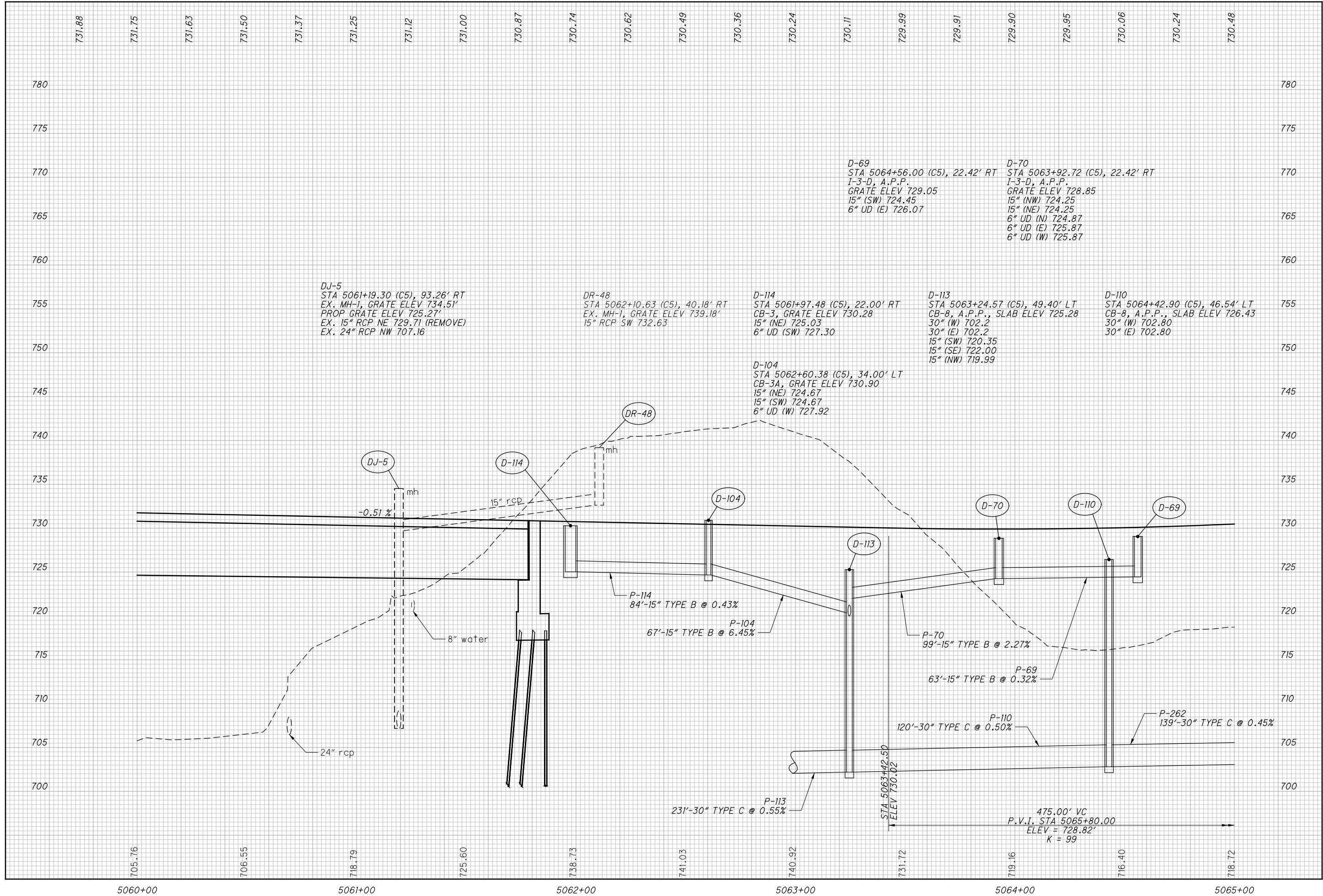
FRA -70/ 71-12.68/ 14.86

292
1675

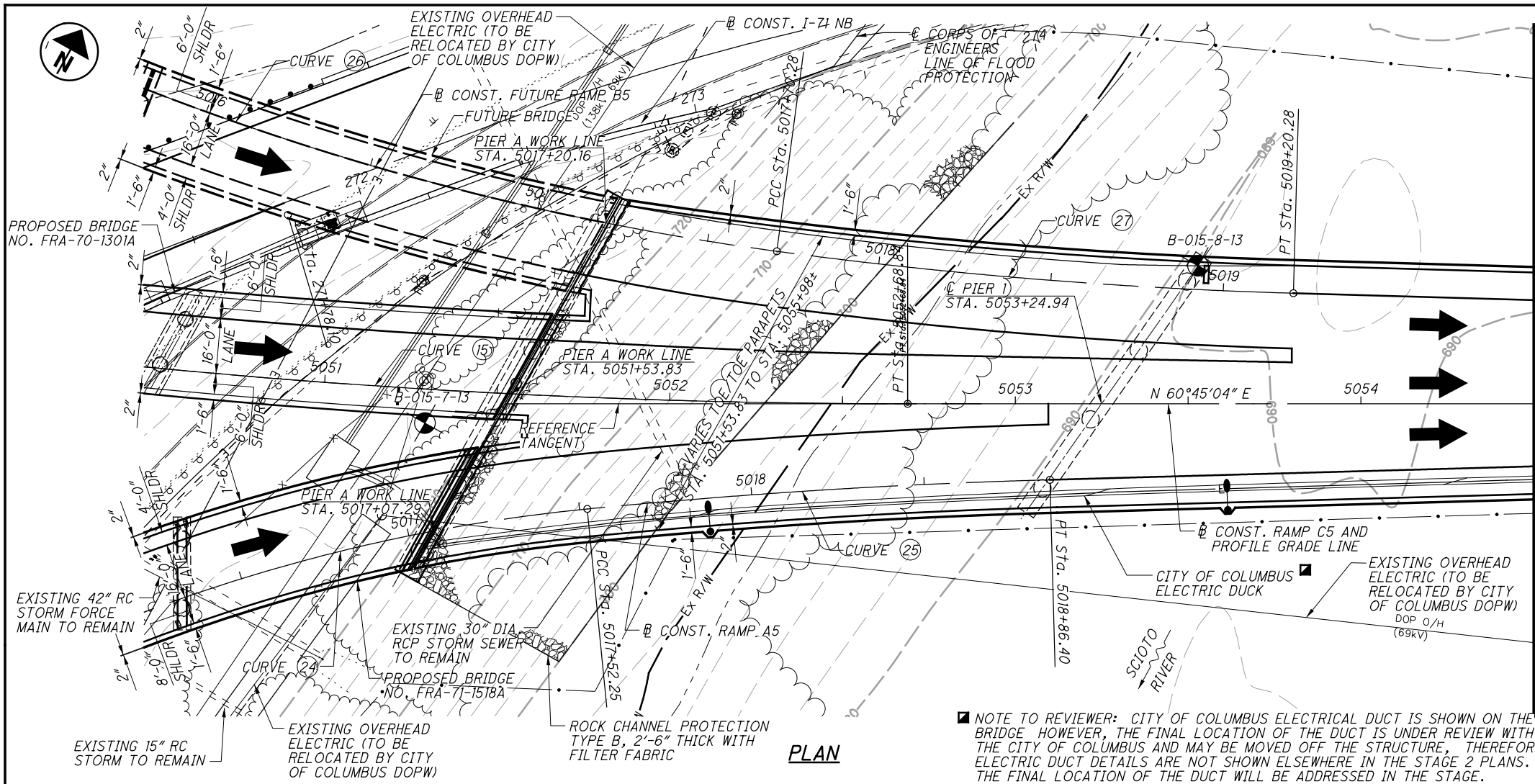
CALCULATED
CHECKED

PROFILE - RAMP C5
STA. 5060+00.00 TO STA. 5065+00.00

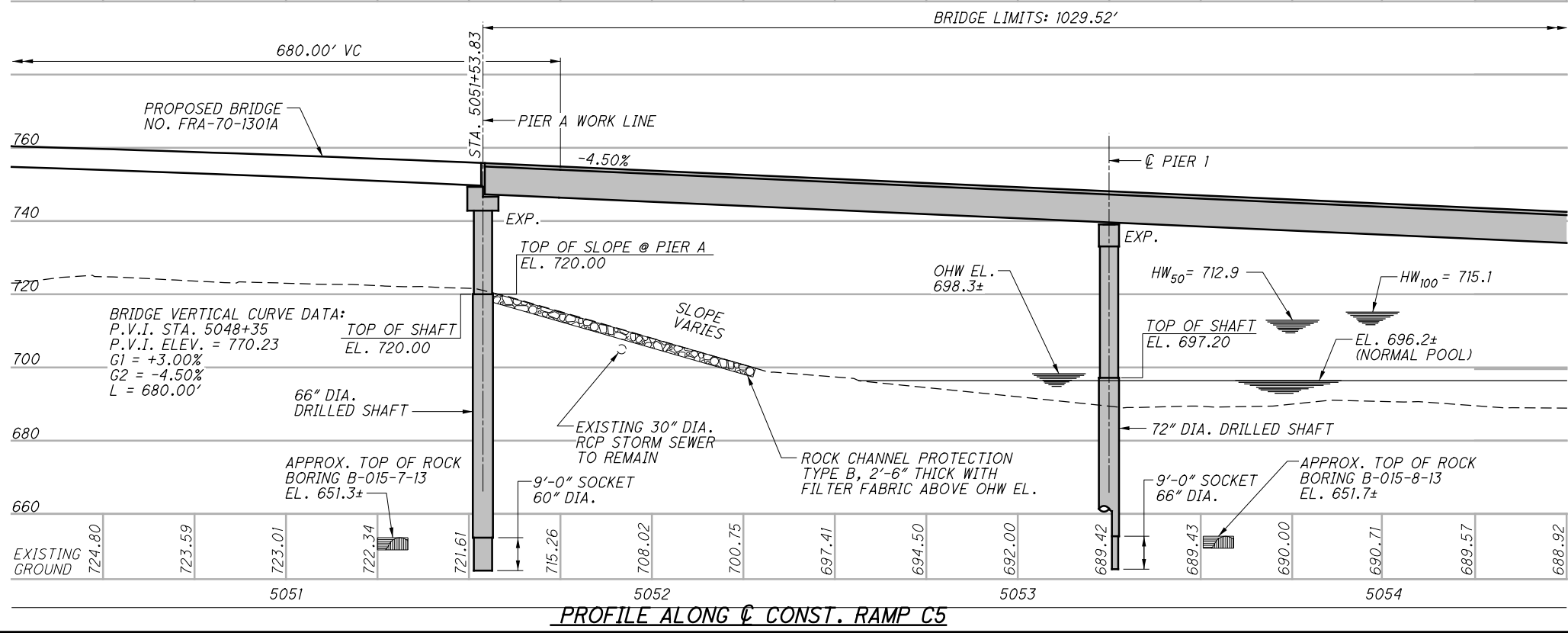
FRA -70/ 71-12.68/ 14.86
294
1675



0:\2012\2012046\FRA\105523\STRUCTURES\FRA70_1321A SHEETS\070_1321ASP001.DGN
12/13/2018 10:33:22 AM
D00TY81STD_USER



PROPOSED PROFILE GRADE	759.68	758.87	757.98	757.03	756.01	754.91	753.79	752.66	751.54	750.41	749.28	748.16	747.03	745.91	744.78	743.66	742.53
------------------------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------	--------



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**
- EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
 - 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 AT 09 GRADE 50W/HPS 70W WITH COMPOSITE REINFORCED CONCRETE DECK SUPPORTED BY REINFORCED CONCRETE SUBSTRUCTURES

SPANS: 170'-11¹/₆", 212'-10¹/₂", 231'-10⁵/₈", 224'-5¹/₄" AND 183'-9⁷/₁₆" 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

SKREW: 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

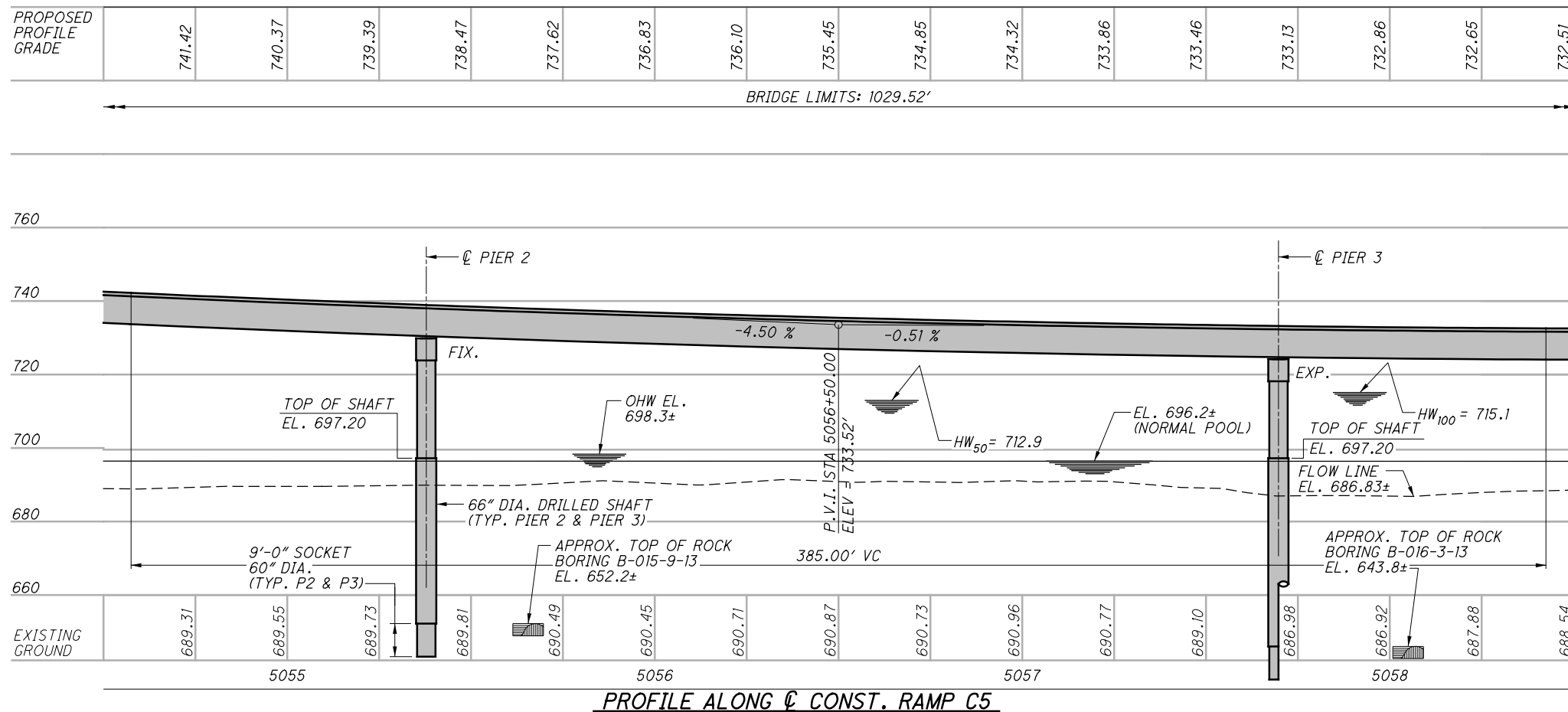
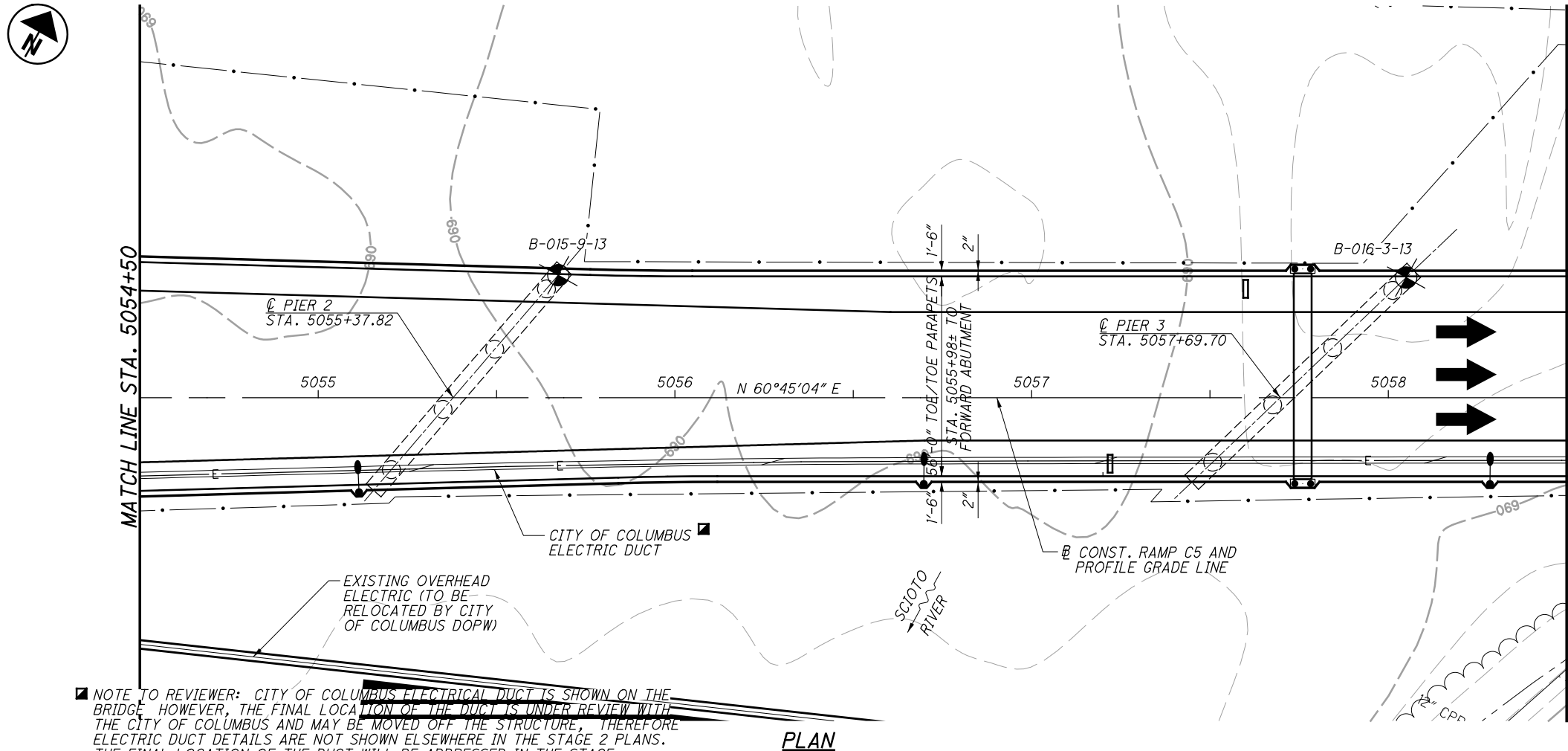
WEARING SURFACE: 1" MONOLITHIC CONCRETE

SUPERELEVATION: VARIES

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

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

01\2012\2012048\FRA\105523\STRUCTURES\FRA070_1321A SHEETS\070_1321.ASP002.DGN
12/13/2018
10:34:31 AM
D:\TY81STD_USER



HORIZONTAL CURVE DATA

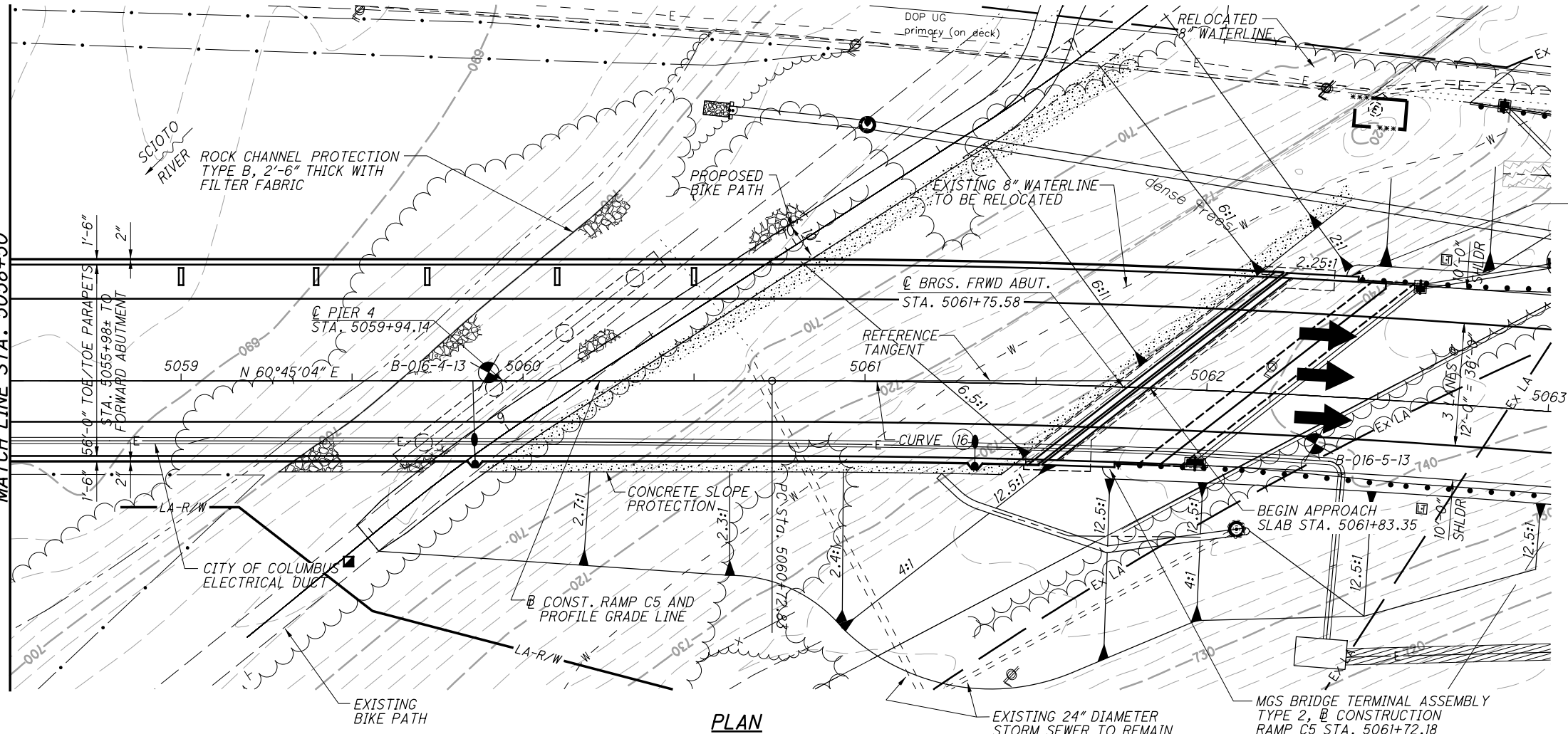
- 15 @ CONST. RAMP C5
P.I. Sta. 5047+05.72
 $\Delta = 28^\circ 46' 35''$ (LT)
 $Dc = 2^\circ 30' 00''$
 $R = 2,291.83'$
 $T = 587.94'$
 $L = 1,151.06'$
 $E = 74.21'$
 $C = 1,139.00'$
C.B. = N $75^\circ 08' 21''$ E
 $e_{max} = 0.04$
P.C. = Sta. 5041+17.78
P.T. = Sta. 5052+68.84
D.S. = 50 MPH
- 16 @ CONST. RAMP C5
P.I. Sta. 5065+40.48
 $\Delta = 18^\circ 32' 33''$ (RT)
 $Dc = 2^\circ 00' 00''$
 $R = 2,864.79'$
 $T = 467.65'$
 $L = 927.12'$
 $E = 37.92'$
 $C = 923.08'$
C.B. = N $70^\circ 01' 20''$ 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
 $\Delta = 60^\circ 32' 16''$ (RT)
 $Dc = 11^\circ 20' 00''$
 $R = 505.55'$
 $T = 295.05'$
 $L = 534.16'$
 $E = 79.80'$
 $C = 509.66'$
C.B. = N $24^\circ 52' 00''$ 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
 $\Delta = 4^\circ 01' 28''$ (RT)
 $Dc = 3^\circ 00' 00''$
 $R = 1,909.86'$
 $T = 67.10'$
 $L = 134.14'$
 $E = 1.18'$
 $C = 134.12'$
C.B. = N $57^\circ 08' 52''$ 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
 $\Delta = 101^\circ 35' 19''$ (LT)
 $Dc = 7^\circ 10' 00''$
 $R = 799.48'$
 $T = 980.06'$
 $L = 1,417.52'$
 $E = 465.31'$
 $V = 45$ MPH
 $C = 1,239.00'$
C.B. = S $60^\circ 49' 05''$ 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
 $\Delta = 6^\circ 00' 00''$ (LT)
 $Dc = 4^\circ 00' 00''$
 $R = 1,432.39'$
 $T = 75.07'$
 $L = 150.00'$
 $E = 1.97'$
 $V = 45$ MPH
 $C = 149.93'$
C.B. = N $65^\circ 23' 15''$ 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

01\2012\2012046\FRA\105523\STRUCTURES\FRA70_132\1A SHEETS\070_132\ASP003.DGN
12/13/2018
10:32:02 AM
D:\T\181STD.LJSEB



MATCH LINE STA. 5058+50



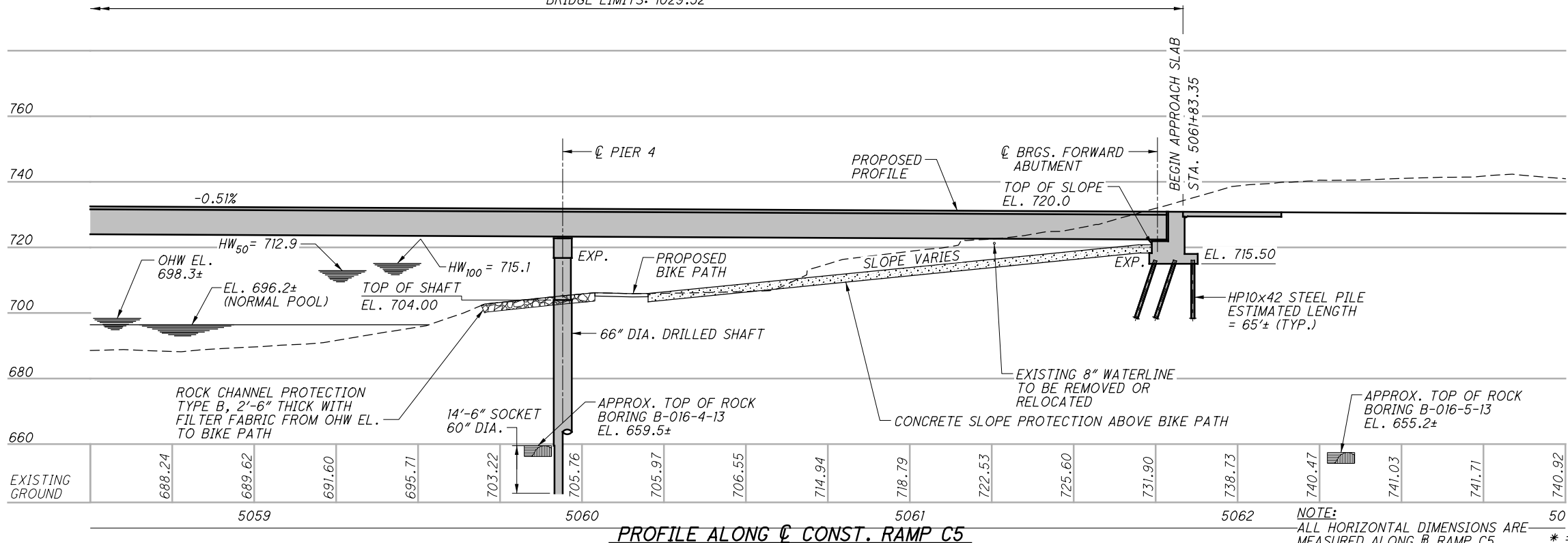
MGS BRIDGE TERMINAL ASSEMBLY
TYPE 2, B CONSTRUCTION
RAMP C5 STA. 5062+40.38

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.

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'



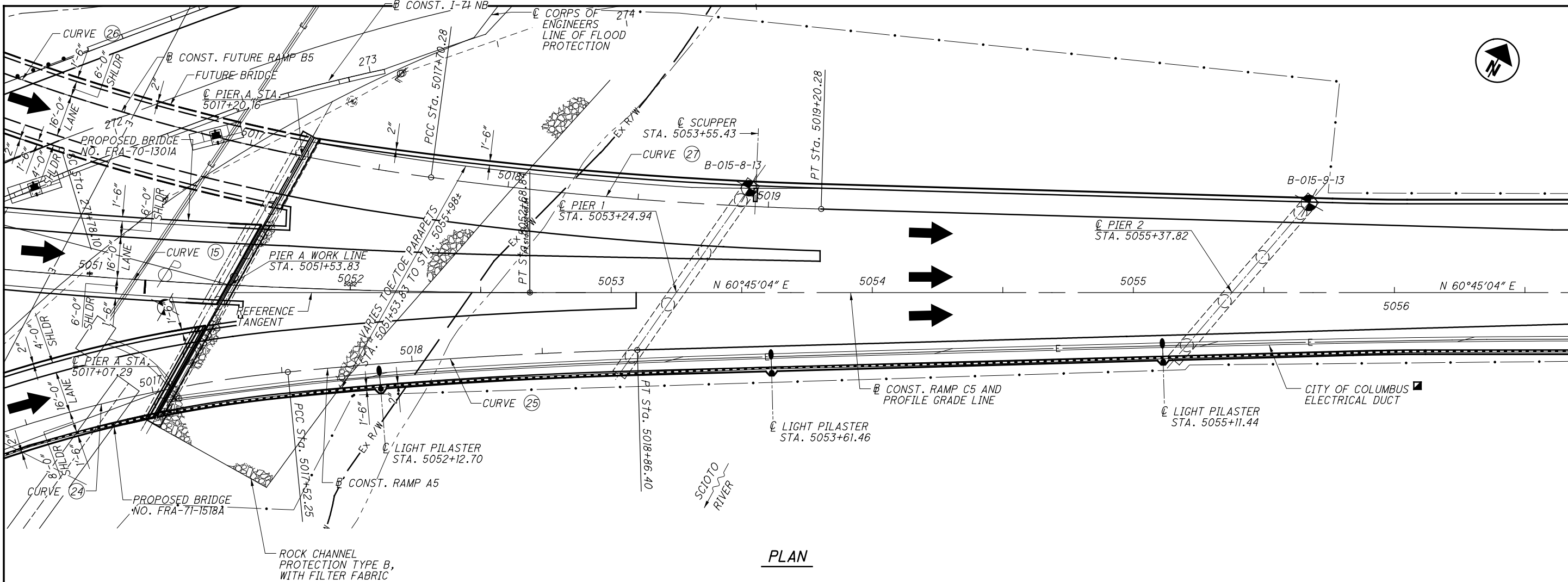
PROFILE ALONG C CONST. RAMP C5

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

NOTE:
FOR CURVE DATA SEE SHT. 2/94.

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

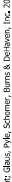
0:\2012\2012048\FRA\105523\STRUCTURES\FRA070_132\1A SHEETS\070_132\1A00001.DGN
12/13/2018
10:38:03 AM
BDDTY81STD_USER



NOTE:
FOR CURVE DATA, SEE SHT. NO. 294.

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.

MATCH LINE STA. 5056+67.33

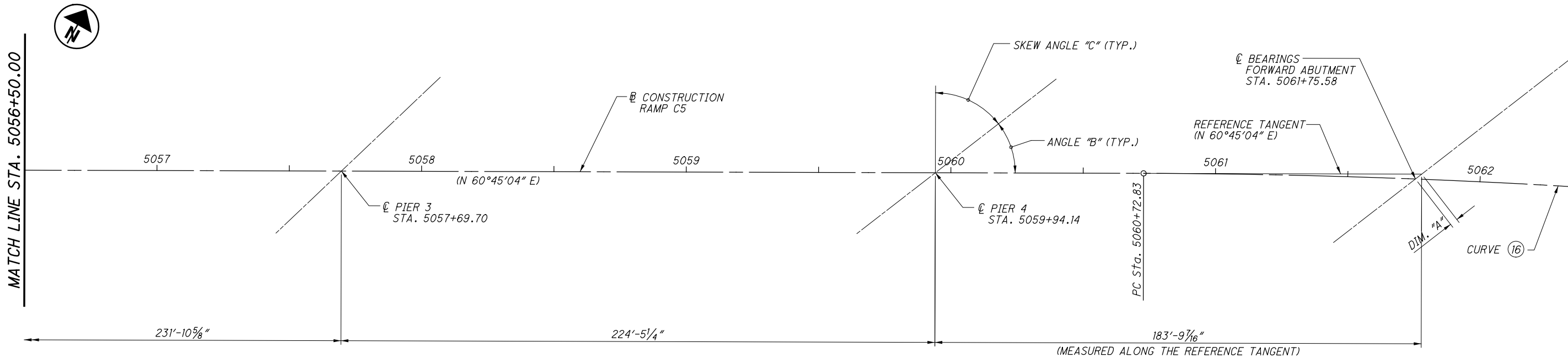
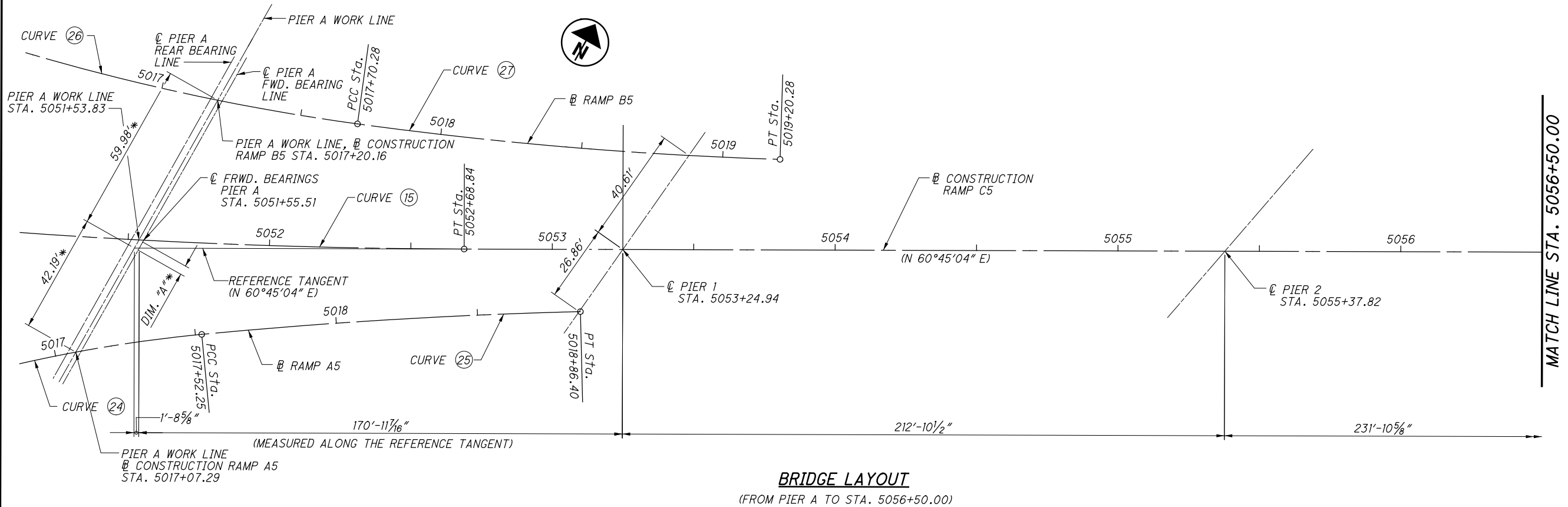
1180 1675		6 / 94	FRA-70/ 71-12.68 / 14.86	GENERAL PLAN - 1	DESIGNED DGN	DRAWN RPR	REVIEWED TJW	DATE 7-16-18	 DESIGN AGENCY GPD GROUP Class, Pyle, Schorner Burns & DeLuca, Inc. 1801 Watermark Drive, Suite 150, Columbus, Ohio 43215 614-210-0731 Copyright Class, Pyle, Schorner Burns & DeLuca, Inc. 2015
BRIDGE NO. FRA-70-1321A					CHECKED	REVISED	STRUCTURE FILE NUMBER		
RAMP A5/B5/C5 OVER THE SCIO TO RIVER					DUC		2510015		
PID No. 105523									



NOTE:

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

D:\2012\2012048\FRA\105523\STRUCTURES\FRA070-1321A\SHEETS\070-1321ASF005.DGN
7/15/2018
7:34:38 PM
DDTV\AISTD_USER

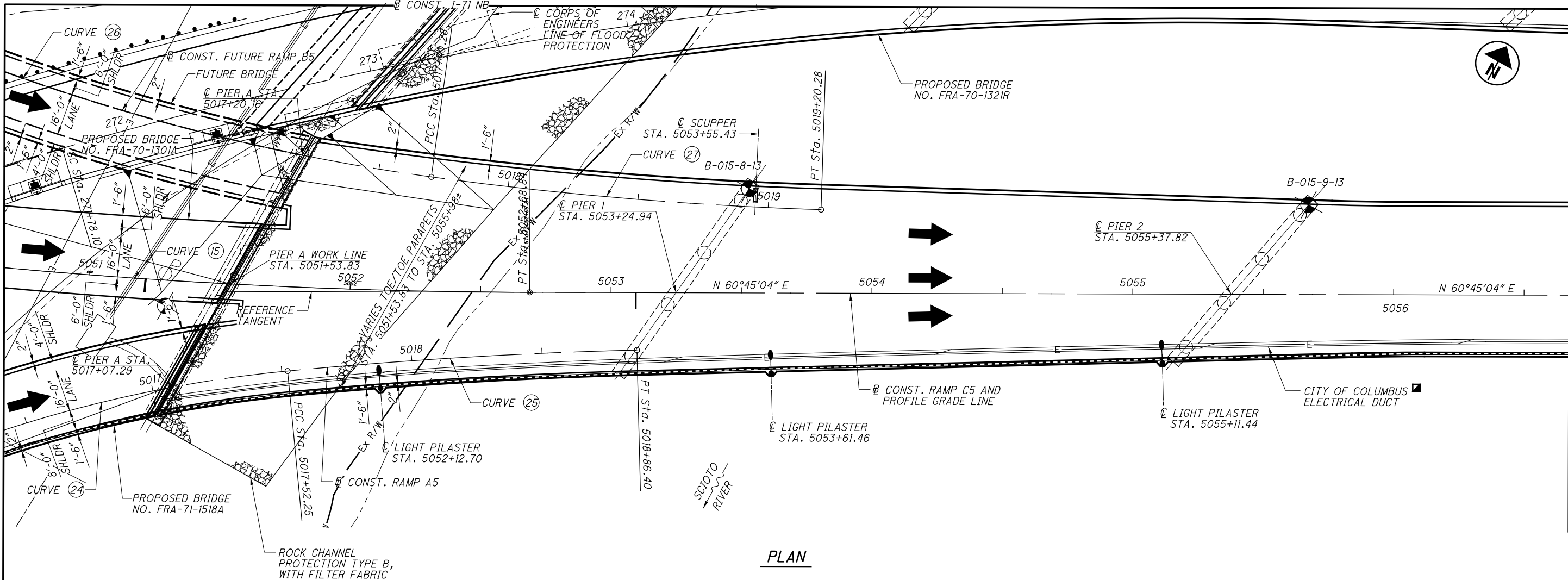


LAYOUT DIMENSIONS			
	"A"	ANGLE "B"	ANGLE "C"
PIER A	3.31'	60°45'04"	29°14'56"
PIER 1	-	55°02'48"	34°57'12"
PIER 2	-	49°20'33"	40°39'27"
PIER 3	-	43°38'17"	46°21'43"
PIER 4	-	37°56'01"	52°03'59"
FWD. ABUT.	3.00'	37°56'01"	52°03'59"

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

HORIZONTAL CURVE DATA
SEE SHEET 2/94

0:\2012\2012048\FRA\105523\STRUCTURES\FRA070-1321A\SHEETS\070-1321A0P001.DGN
2/15/2018
7:37:54 PM
DDOTVAISTD_USER



PLAN

NOTE:

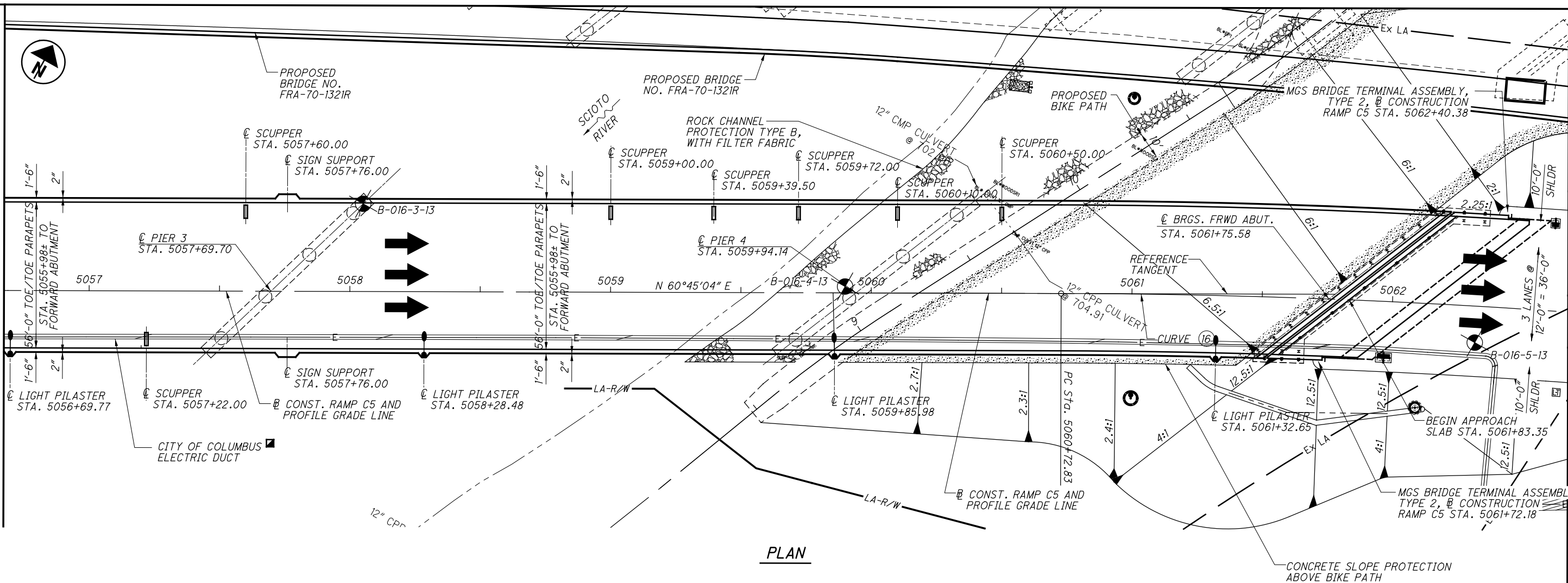
FOR CURVE DATA, SEE SHT. NO. 294.

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.

FRA-70/71-12.68 / 14.86 PID No. 105523	GENERAL PLAN - 1 BRIDGE NO. FRA-70-1321A RAMP A5/B5/C5 OVER THE SCIOTO RIVER		MATCH LINE STA. 5056+67.33	
	DESIGNED DGN	DRAWN RPR	REVIEWED TJW	DATE 7-16-18
6 / 94		STRUCTURE FILE NUMBER 2510015		DESIGN AGENCY GPD GROUP Gerald P. Gorman, P.E., President 614.230.0251 4661 Westmark Lane, Suite 150, Columbus, Ohio 43229 Copyright 2018, GPD Group, Inc.

D:\2012\2012048\FRA\105523\STRUCTURES\FRA070_1321A\SHEETS\070_1321A0P002.DGN
7/15/2018
7:39:47 PM
DDTVB1STD_USER

MATCH LINE STA. 5056+67.33



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.

PLAN

NOTE:

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

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

7/94

1181
1675

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

DESIGNED	DGN	CHECKED	DUC
DGN	DUC	DUC	DUC

DRAWN	RPR	REVIEWED	TJW	DATE
RPR	TJW	TJW	TJW	7-16-18

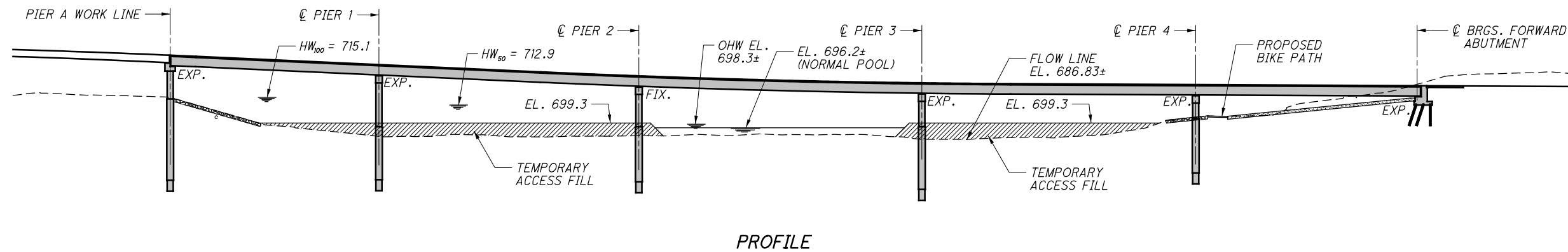
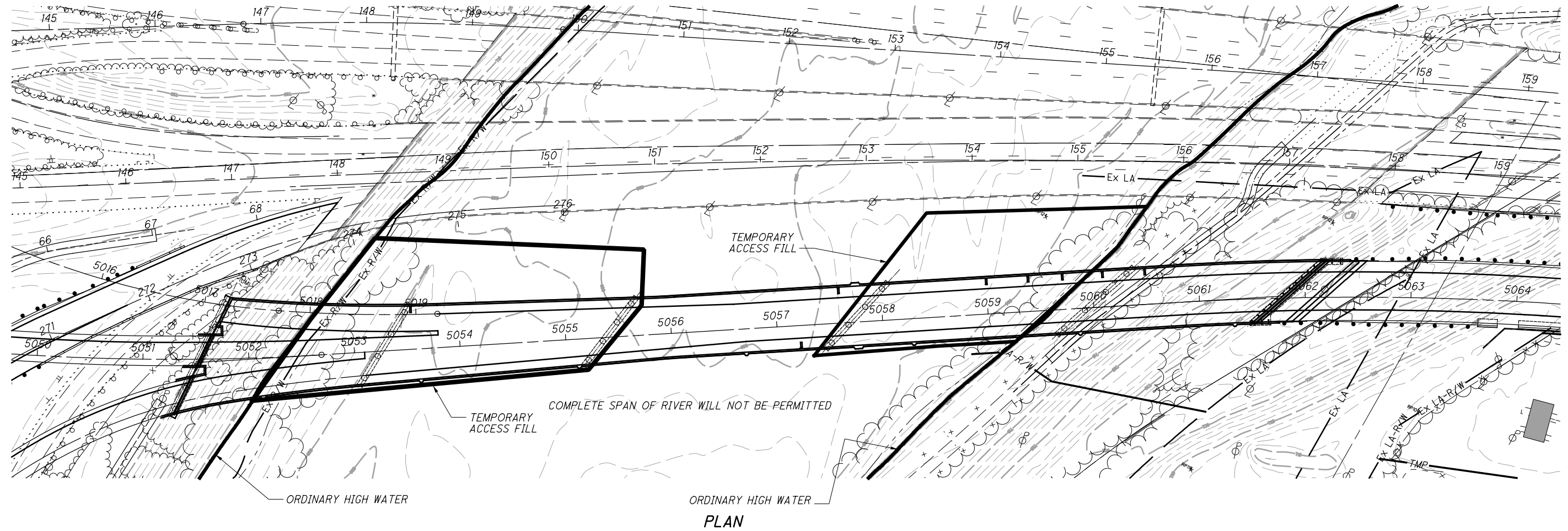
STRUCTURE FILE NUMBER	2510015
-----------------------	---------

DESIGN AGENCY
GPD GROUP
GPD GROUP, INC.
1061 Westmark Lane, Suite 100
Columbus, Ohio 43210
614.290.0751
Copyright 2018, GPD Group, Inc. All Rights Reserved.

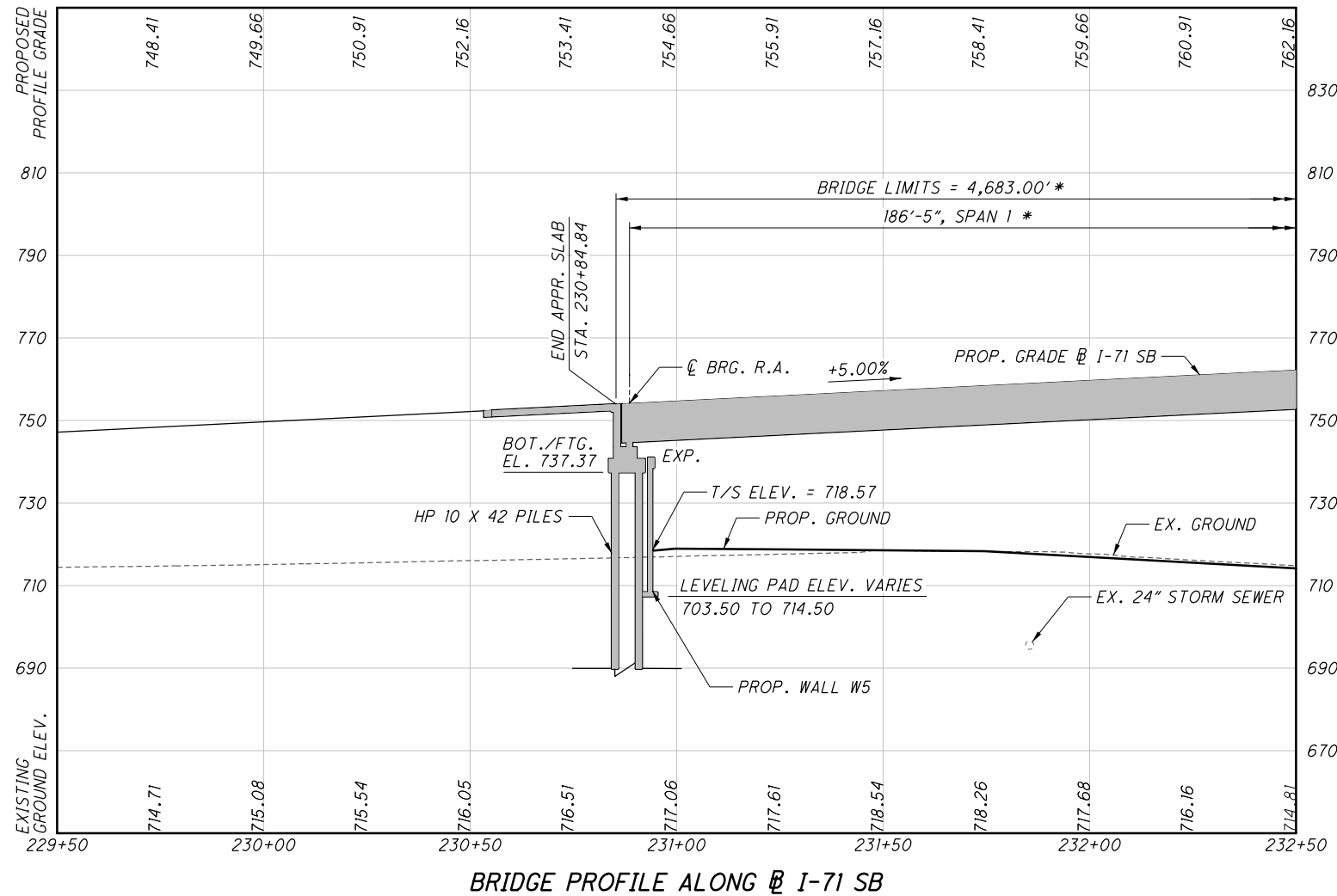
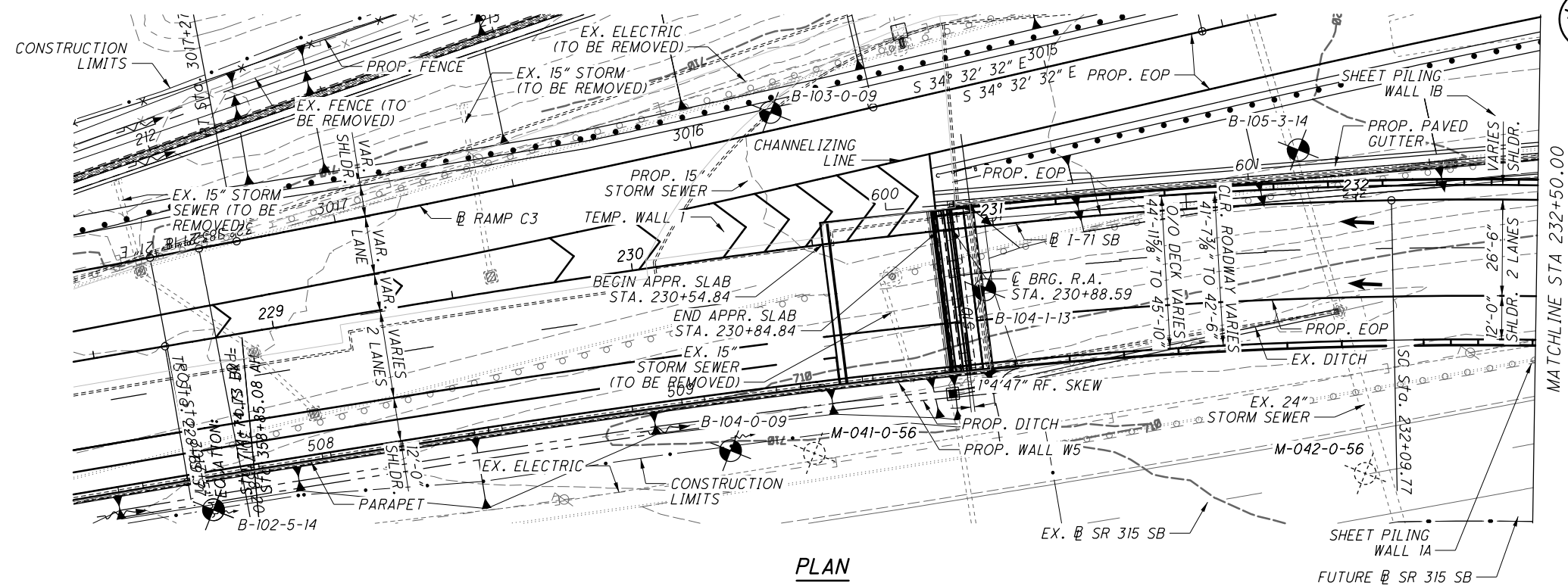
Anticipated Temporary Causeway Design

FRA-70-1321A

$$\begin{array}{rcl} 39,000 \text{ SF} & + & 26,000 \text{ SF} = 65,000 \text{ SF} \\ 300 \text{ LF} & + & 180 \text{ LF} = 480 \text{ LF} \end{array}$$



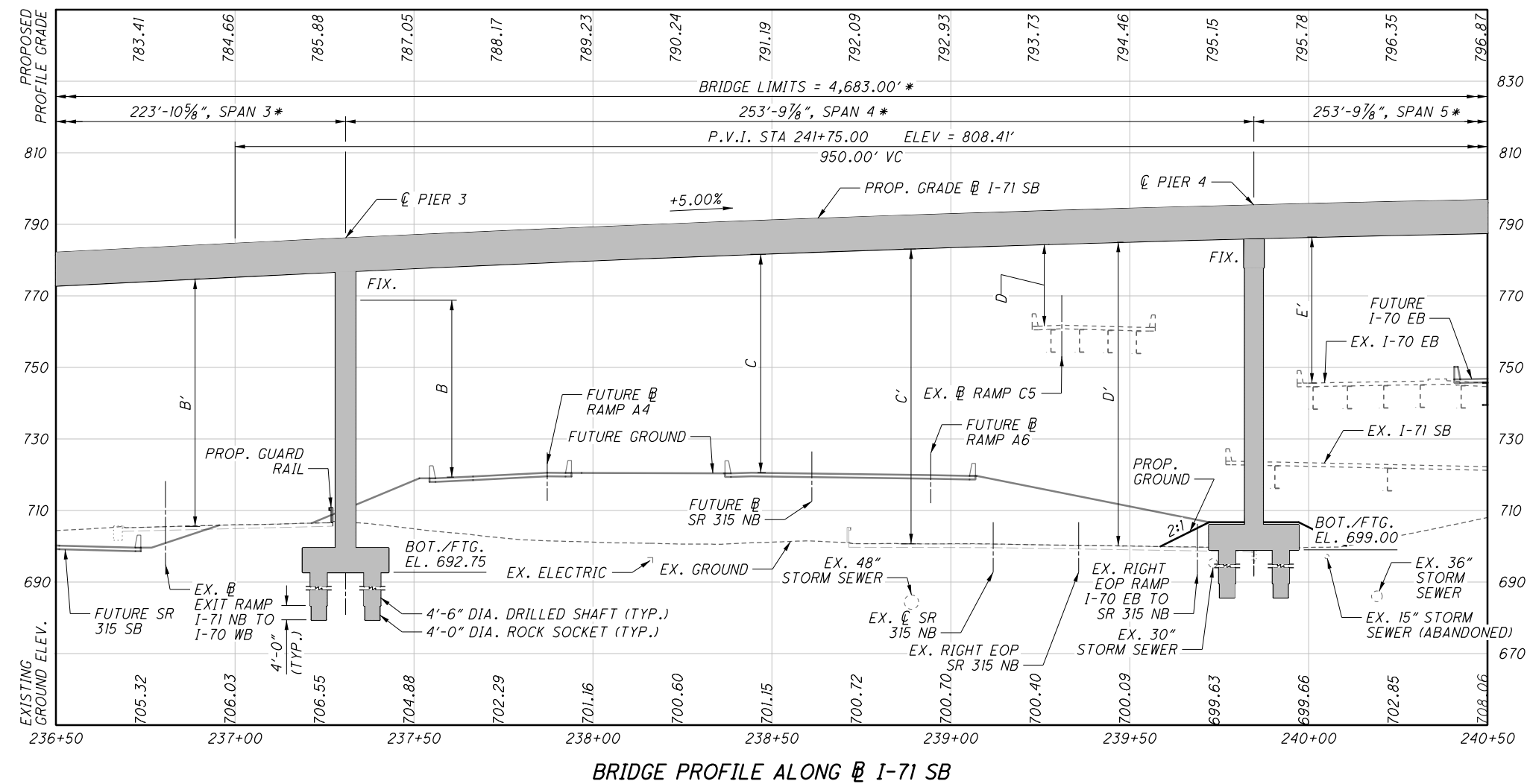
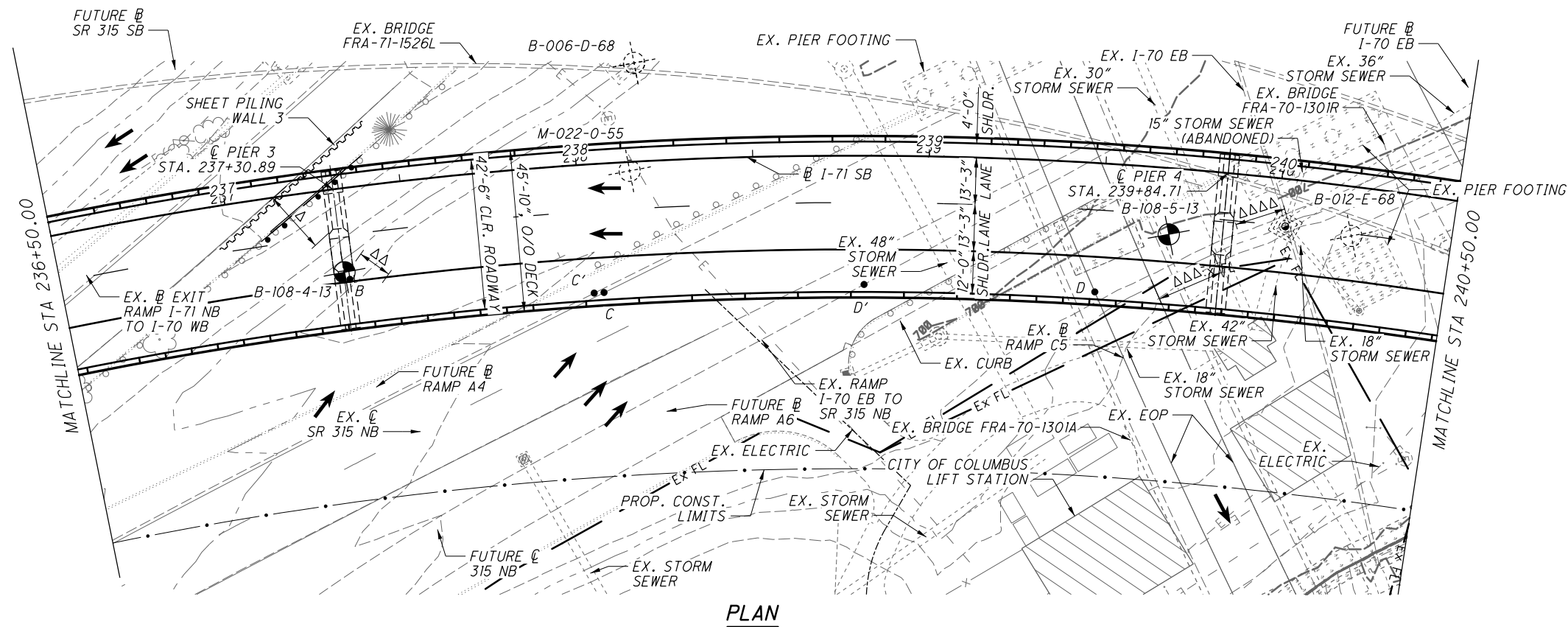
D:\2012\2012048\FRA\105523\STRUCTURES\FRA70_1321A\SHEET\DESIGN\70_1321A_CAUSEWAY.DGN
6/26/2019 4:04:11 PM
D:\2012\2012048\FRA\105523\STRUCTURES\FRA70_1321A\SHEET\DESIGN\70_1321A_CAUSEWAY.DGN



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-I-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'-7 ³ / ₈ " , 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-I-15, 30' LONG (MODIFIED)	
ALIGNMENT: VARIES	
SUPERELEVATION: VARIES, MAX. 0.06	
COORDINATES: LATITUDE 39° 56' 55"	
LONGITUDE 83° 00' 59"	



LEGEND

-
- * DISTANCE MEASURED ALONG DE I-71 SB

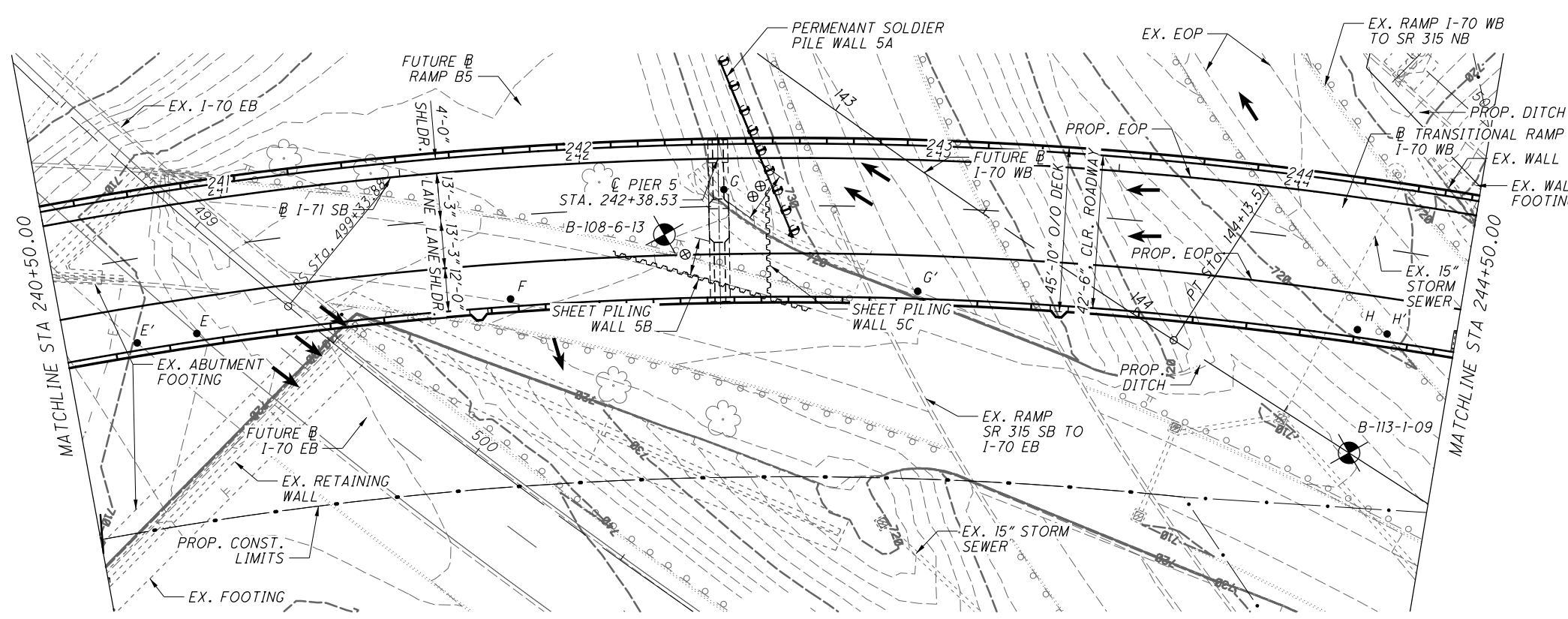
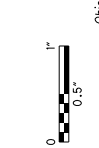
- 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
- PT. B = 39.22' ACTUAL VERTICAL CLEARANCE
- PT. B' = 64.00' ACTUAL VERTICAL CLEARANCE
(PT. ON PREVIOUS SHEET IN PLAN VIEW)
- PT. C = 57.87' ACTUAL VERTICAL CLEARANCE
- PT. C' = 76.22' ACTUAL VERTICAL CLEARANCE
- PT. D = 20.25' ACTUAL VERTICAL CLEARANCE
-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

- $\Delta = 29'-0"$ REQUIRED MINIMUM HORIZONTAL CLEARANCE
(BASED ON CLEAR ZONE)
 $17'-10\frac{1}{2}" =$ ACTUAL HORIZONTAL CLEARANCE
(PROTECTED BY BARRIER)
- $\Delta\Delta = 29'-0"$ REQUIRED MINIMUM HORIZONTAL CLEARANCE
(BASED ON CLEAR ZONE)
 $9'-8\frac{3}{4}" =$ ACTUAL HORIZONTAL CLEARANCE
(TO BE PROTECTED BY BARRIER)
- $\Delta\Delta\Delta = 29'-0"$ REQUIRED MINIMUM HORIZONTAL CLEARANCE
(BASED ON CLEAR ZONE)
 $19'-0\frac{1}{2}" =$ ACTUAL HORIZONTAL CLEARANCE
(TO BE PROTECTED BY BARRIER)
- $\Delta\Delta\Delta\Delta = 29'-0"$ REQUIRED MINIMUM HORIZONTAL CLEARANCE
(BASED ON CLEAR ZONE)
 $14'-5\frac{5}{8}" =$ ACTUAL HORIZONTAL CLEARANCE
(PROTECTED BY BARRIER)

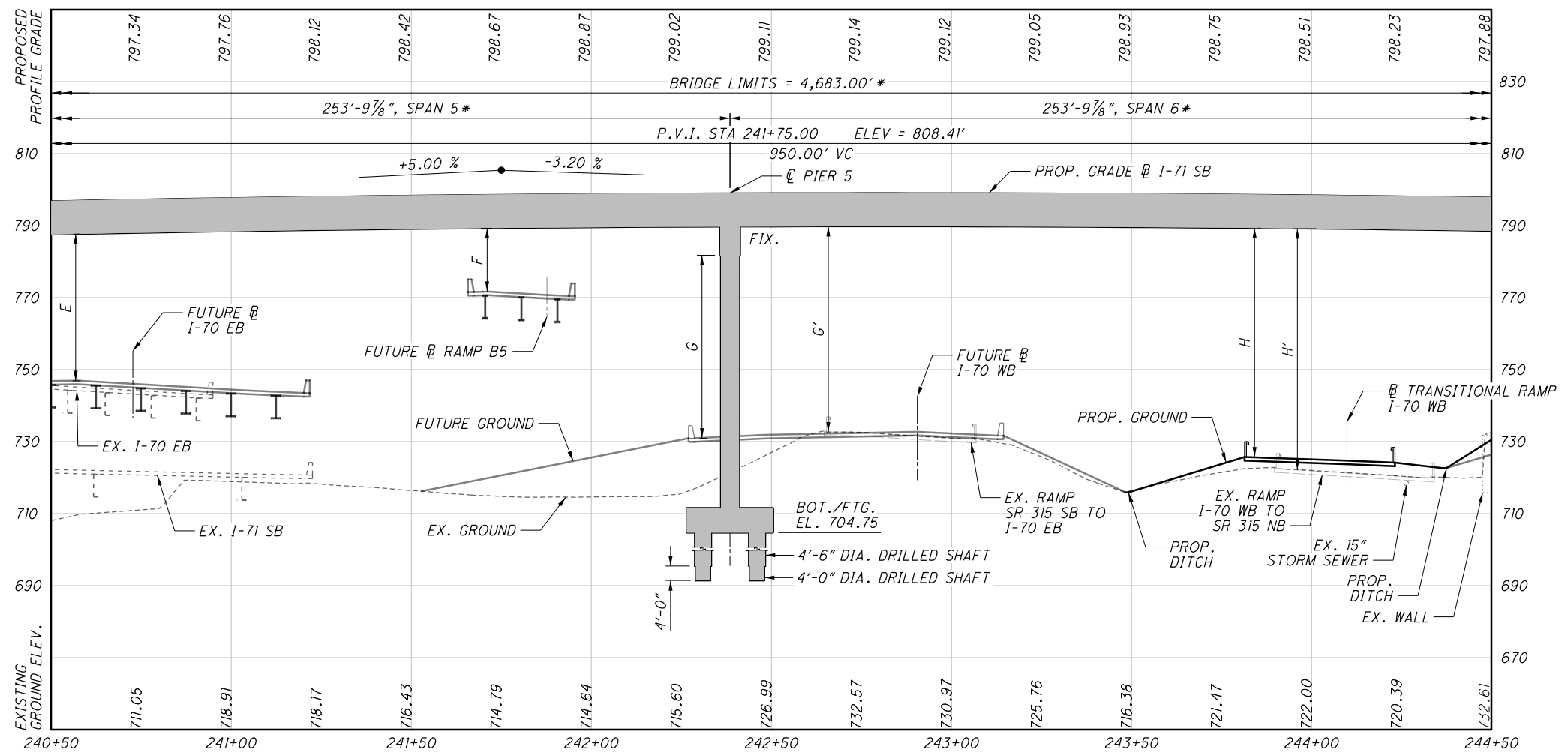
TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-108-4-13	-	653.2±
B-108-5-13	-	645.8±

NOTES:

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



PLAN



BRIDGE PROFILE ALONG I-71 SB



LEGEND

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

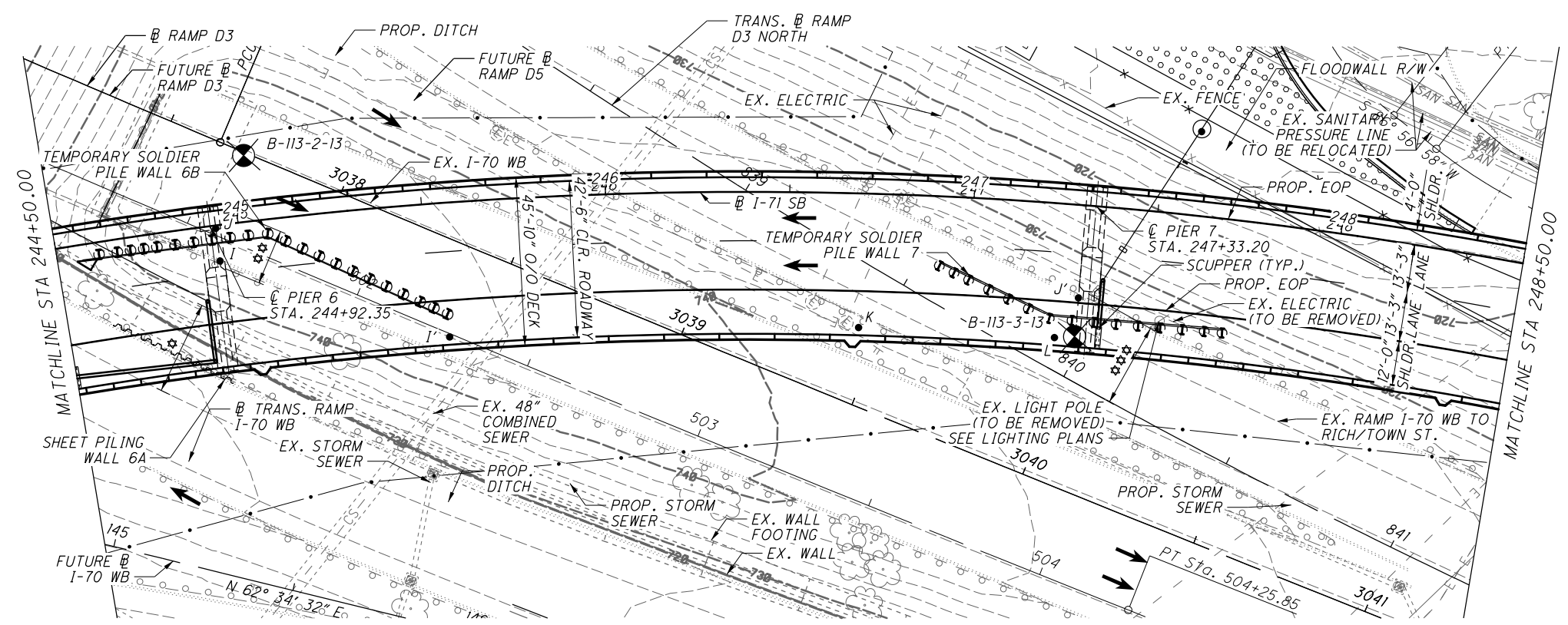
- 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
- PT. E = 40.10' ACTUAL VERTICAL CLEARANCE
- PT. E' = 42.54' ACTUAL VERTICAL CLEARANCE (SHOWN IN PROFILE VIEW ON PREVIOUS SHEET)
- PT. F = 16.31' ACTUAL VERTICAL CLEARANCE
- PT. G = 35.84' ACTUAL VERTICAL CLEARANCE
- PT. G' = 54.74' ACTUAL VERTICAL CLEARANCE
- 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'-4 5/8" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)
- 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
14'-1 3/8" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)

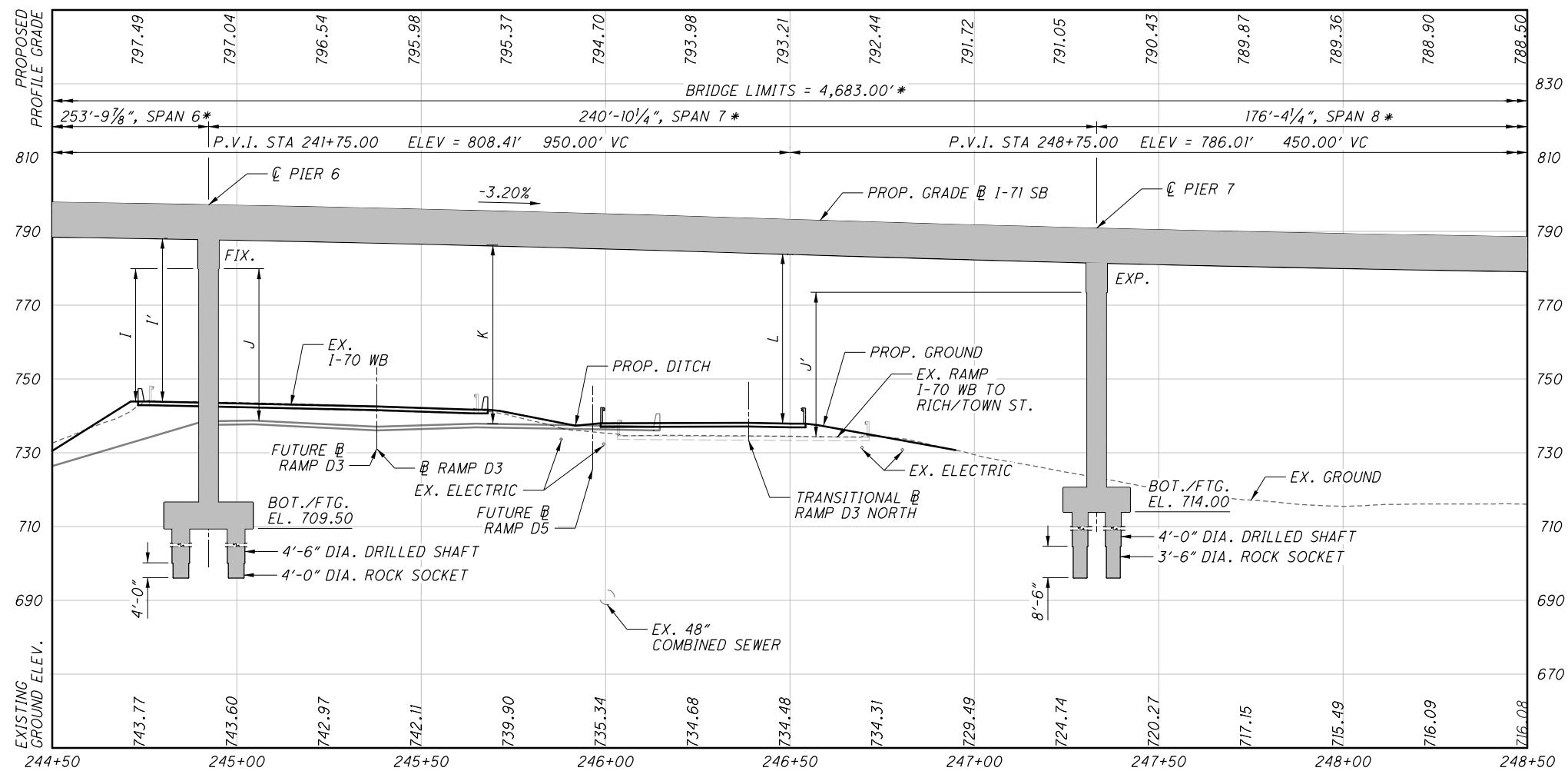
TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-108-6-13	-	657.0±

NOTES:

- FOR ADDITIONAL INFORMATION, SEE SHEET 17268.



PLAN



BRIDGE PROFILE ALONG I-71 SB

LEGEND

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

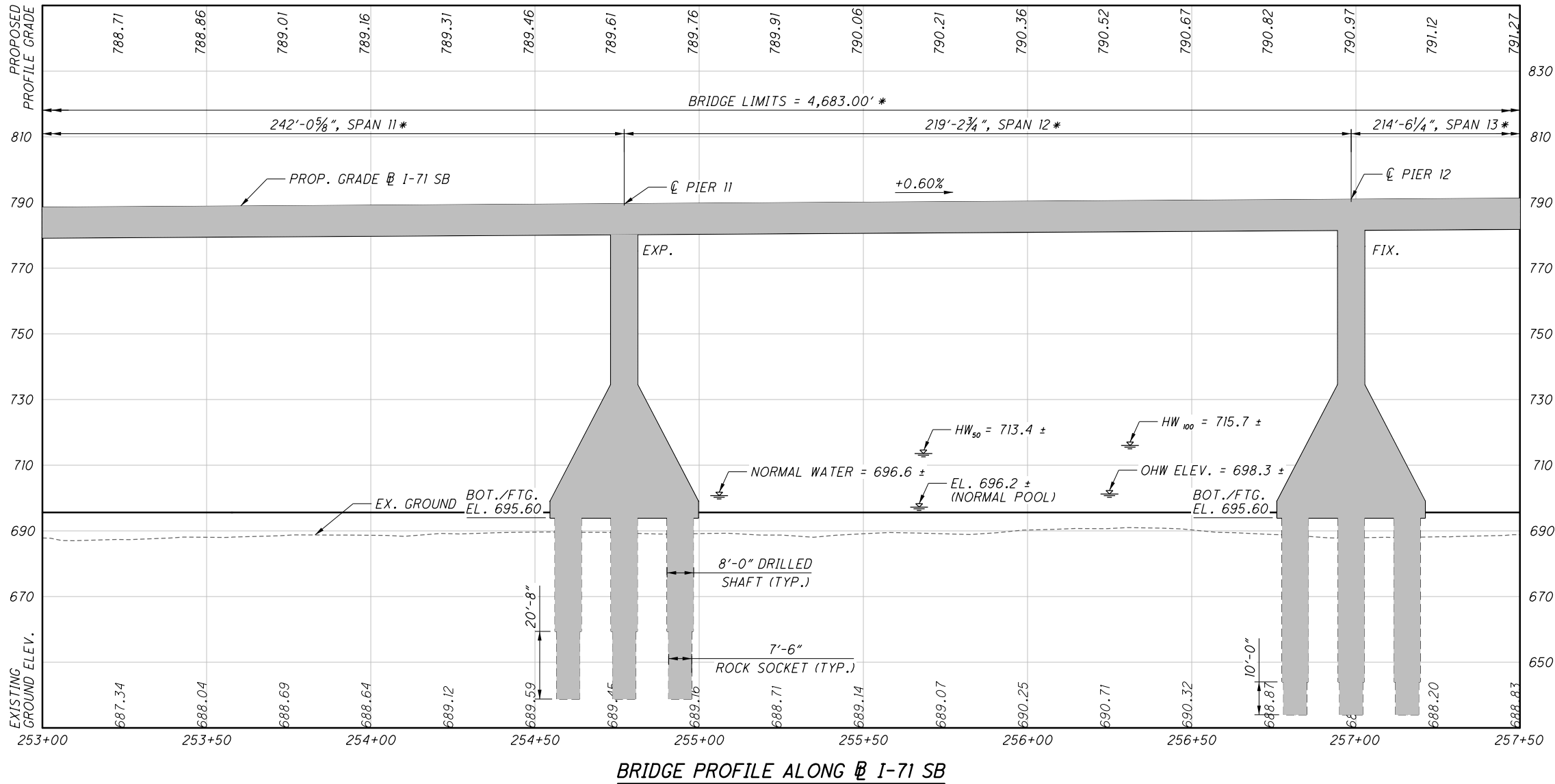
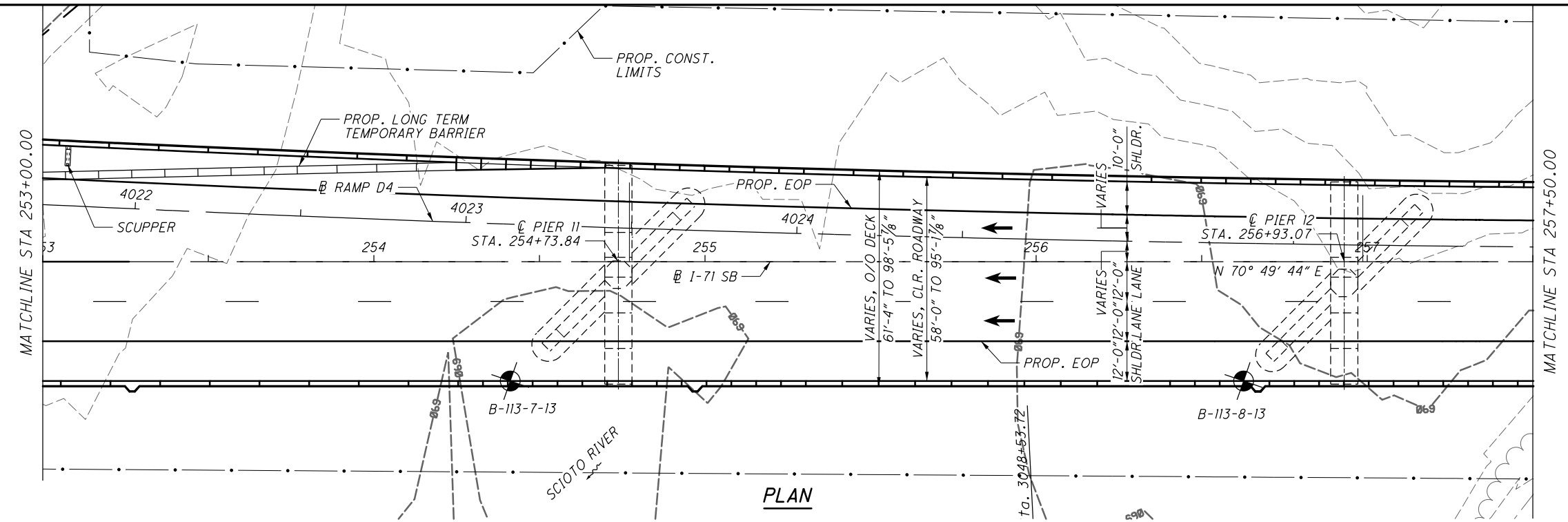
- 15'-6" REQUIRED MINIMUM VERTICAL CLEARANCE
- PT. I = 22.73' ACTUAL VERTICAL CLEARANCE
- PT. I' = 42.01' ACTUAL VERTICAL CLEARANCE
- PT. J = 37.91' ACTUAL VERTICAL CLEARANCE
- PT. J' = 35.14' ACTUAL VERTICAL CLEARANCE
- PT. K = 43.71' ACTUAL VERTICAL CLEARANCE
- PT. L = 40.77' ACTUAL VERTICAL CLEARANCE

- * = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
25'-6 3/4" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)
- ** = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
15'-0 3/4" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)
- *** = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
22'-10 3/8" 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:

- FOR ADDITIONAL INFORMATION, SEE SHEET 17268.



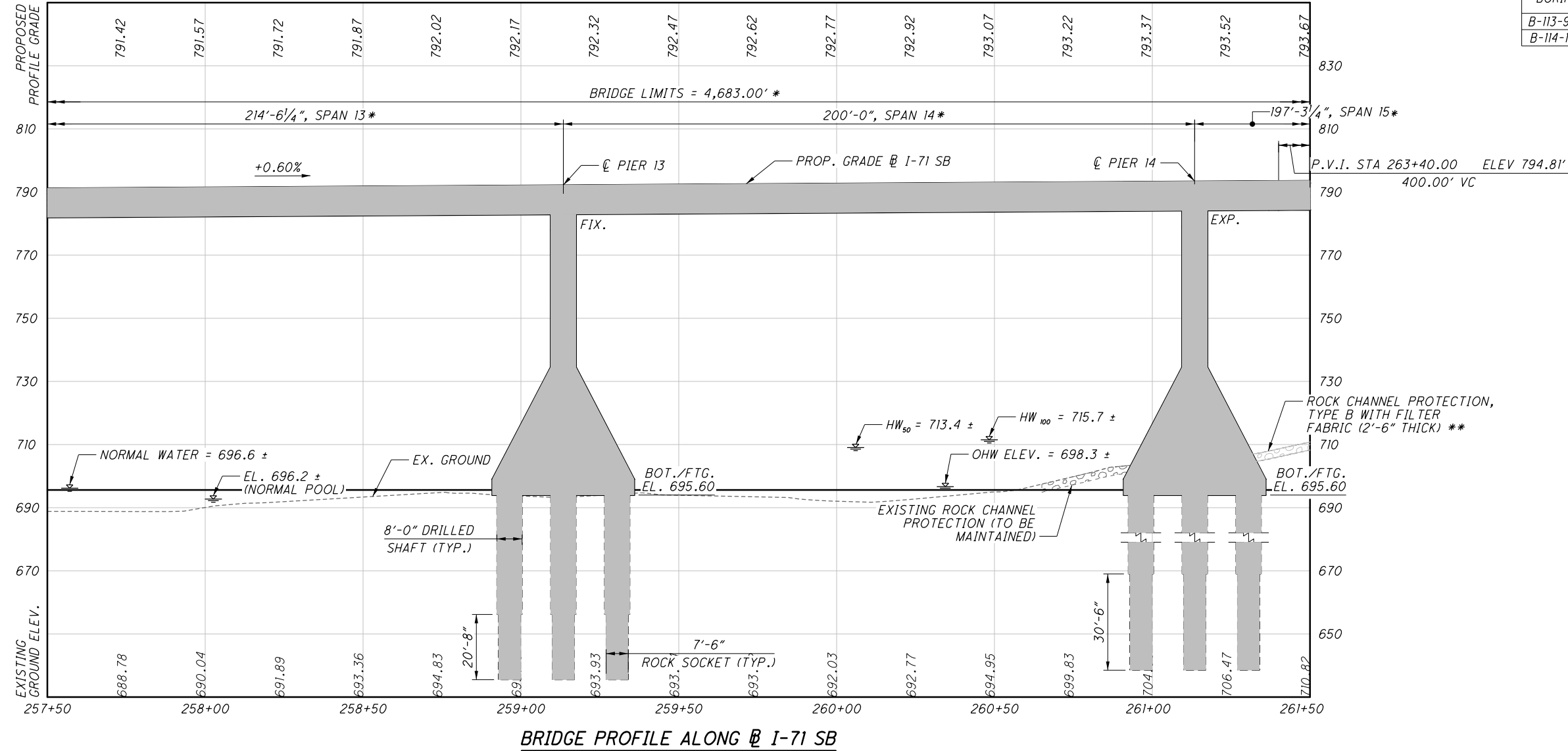
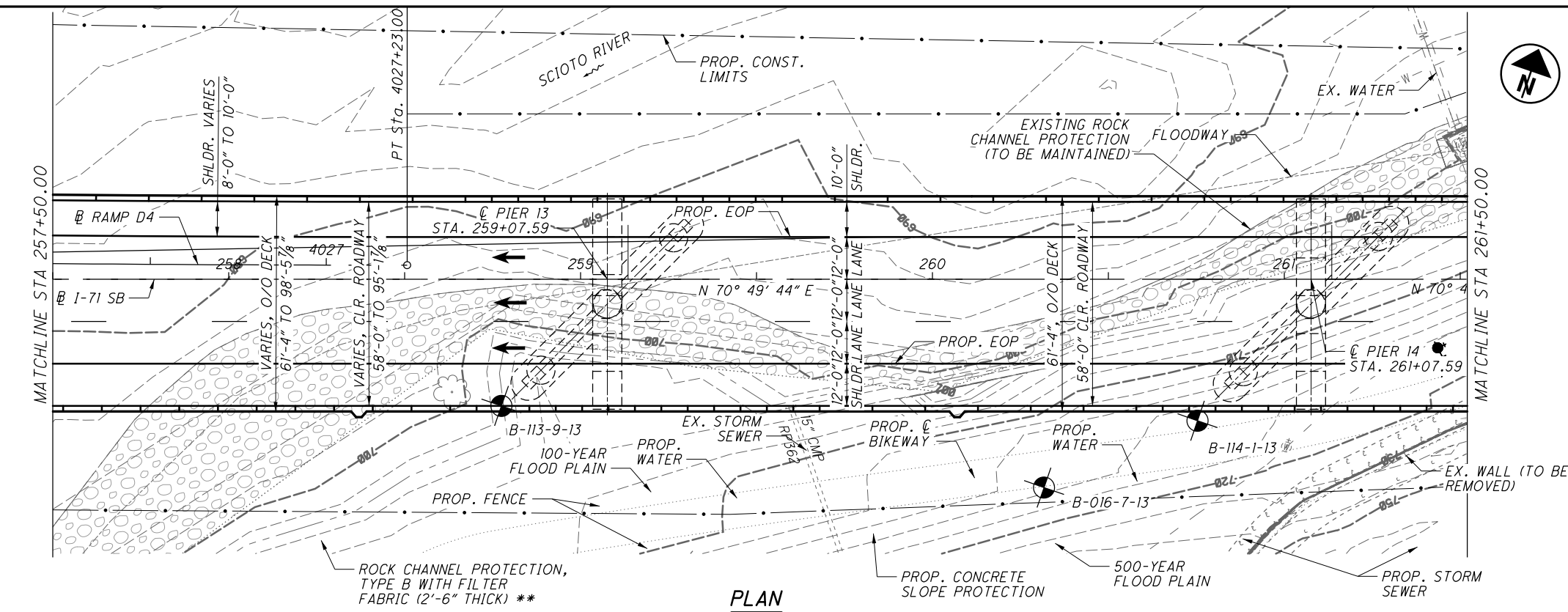
TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-113-7-13	659.4±	648.8±
B-113-8-13	-	644.0±

LEGEND

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

NOTES:

- FOR ADDITIONAL INFORMATION, SEE SHEET 17268.



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±

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

REVIEWED	DATE
GLG	15-Sep
STRUCTURE FILE NUMBER	
2510025	

DESIGNED CMA	DRAWN CMA
CHECKED FBW	REVISED

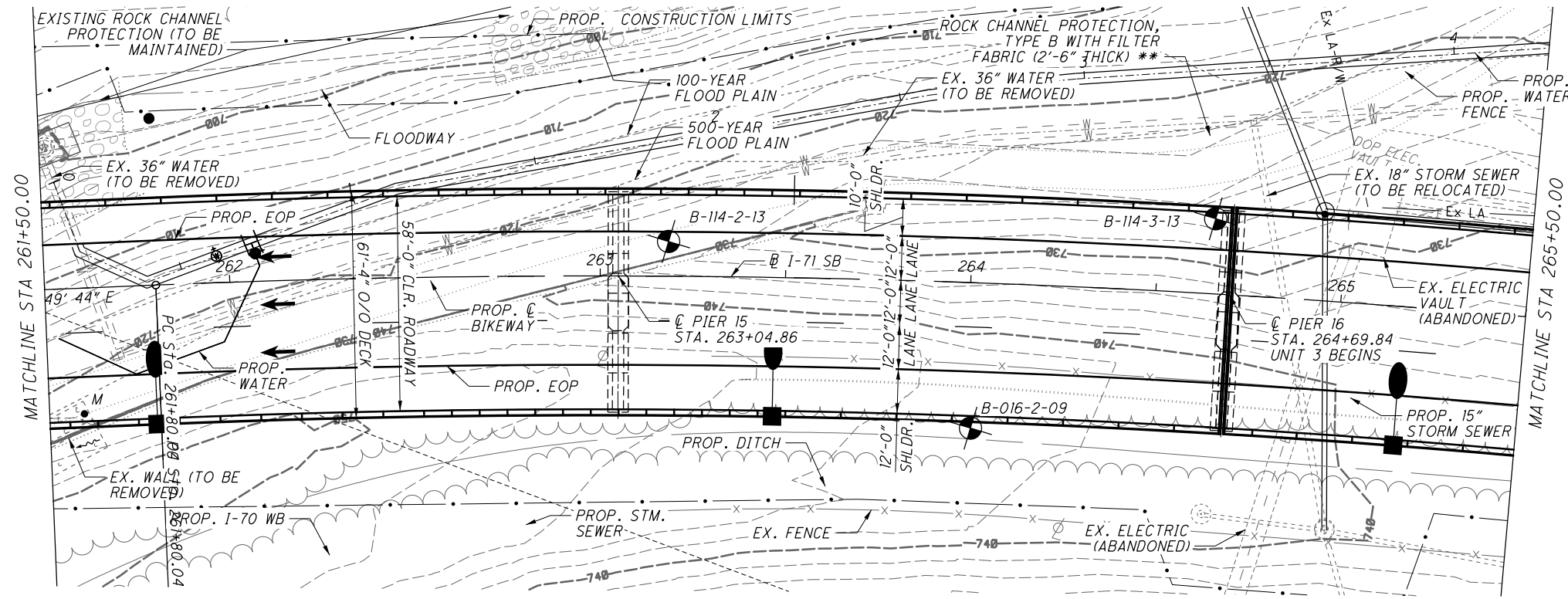
FRANKLIN COUNTY
STA. 230+84.84
STA. 277+67.84

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

FRA-70-13.10
PID No. 89464

8 / 268

912
1239



PLAN

LEGEND

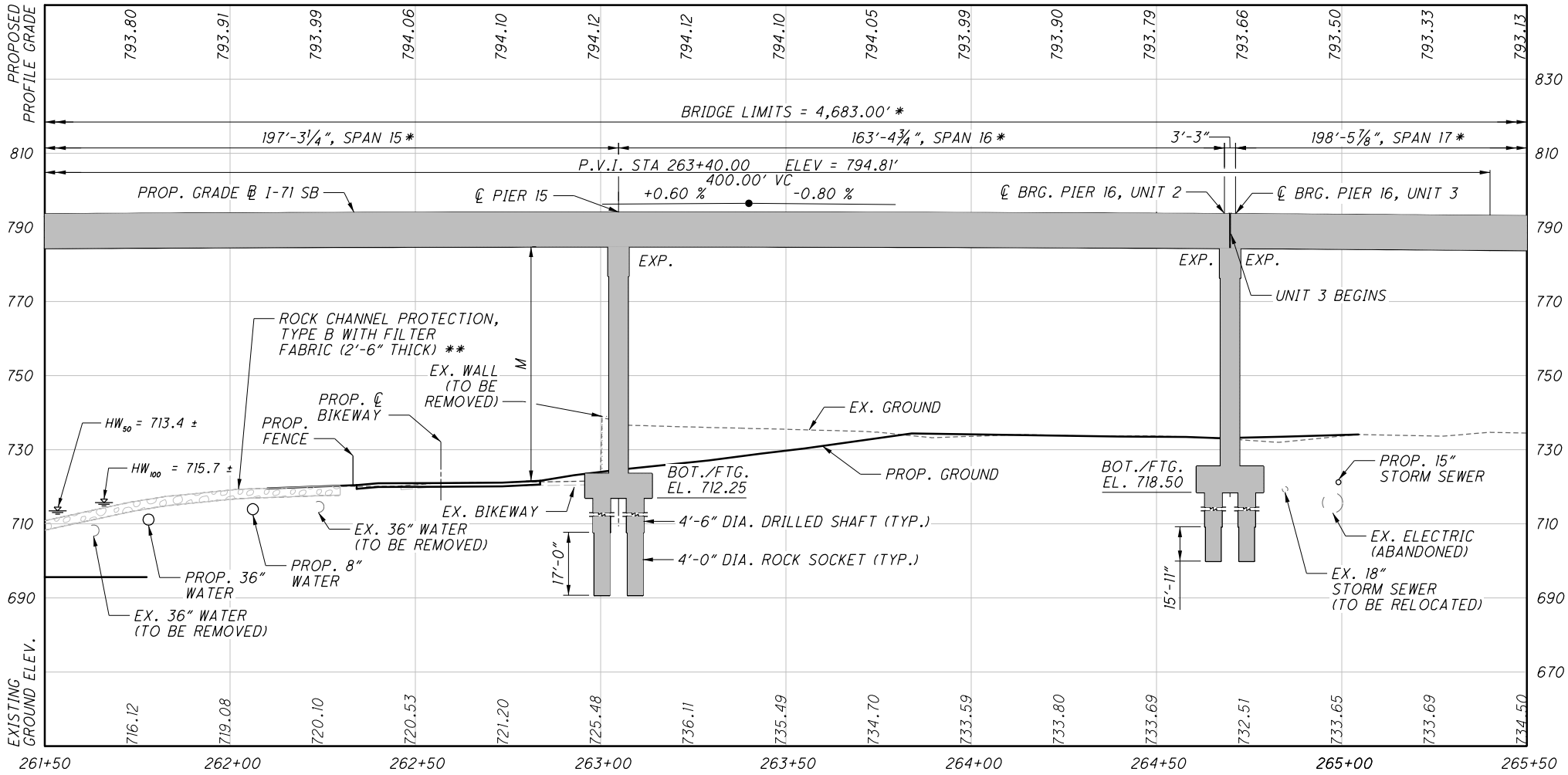
- PROJECT BORING LOCATION
- * DISTANCE MEASURED ALONG B 1-71 SB
- ** ROCK CHANNEL PROTECTION, TYPE B WITH FILTER FABRIC PAID FOR UNDER ROADWAY ITEM 601

- 10'-0" MIN. REQUIRED VERTICAL CLEARANCE
- PT. M = 62.76' ACTUAL VERTICAL CLEARANCE

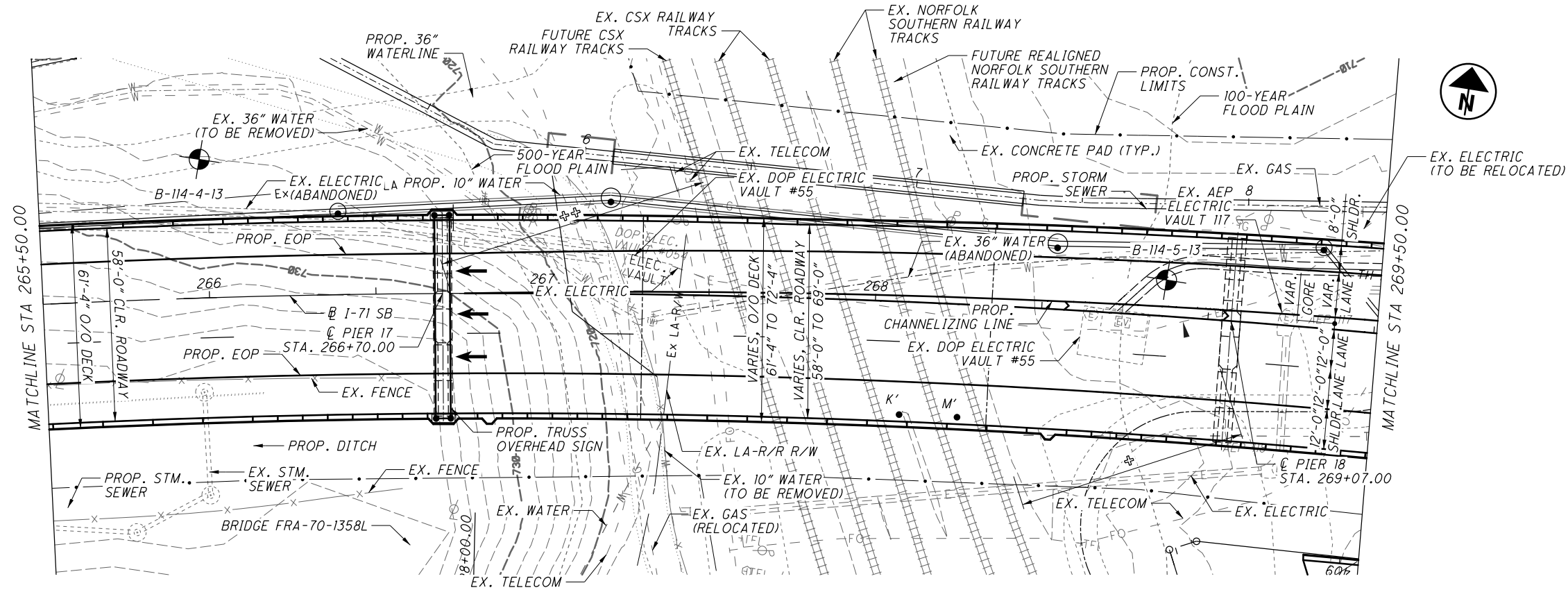
NOTES:

- FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

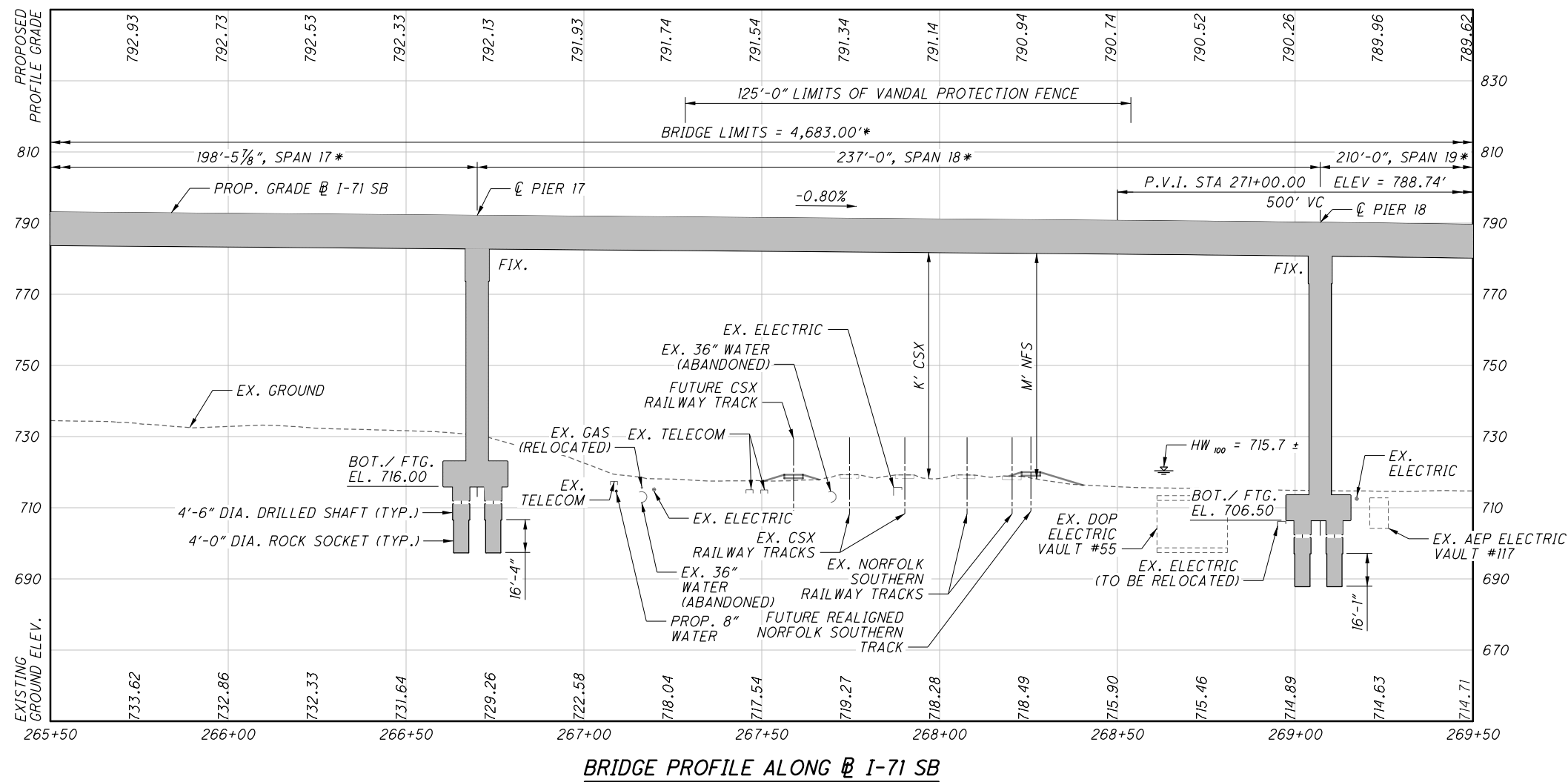
TOP OF ROCK ELEVATION		
BORING	TOP OF SHALE	TOP OF LIMESTONE
B-114-2-13	660.0±	643.0±
B-114-3-13	661.1±	645.2±



BRIDGE PROFILE ALONG B 1-71 SB



PLAN



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 B I-71 SB

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

PT. K' = 62.01' ACTUAL VERTICAL CLEARANCE

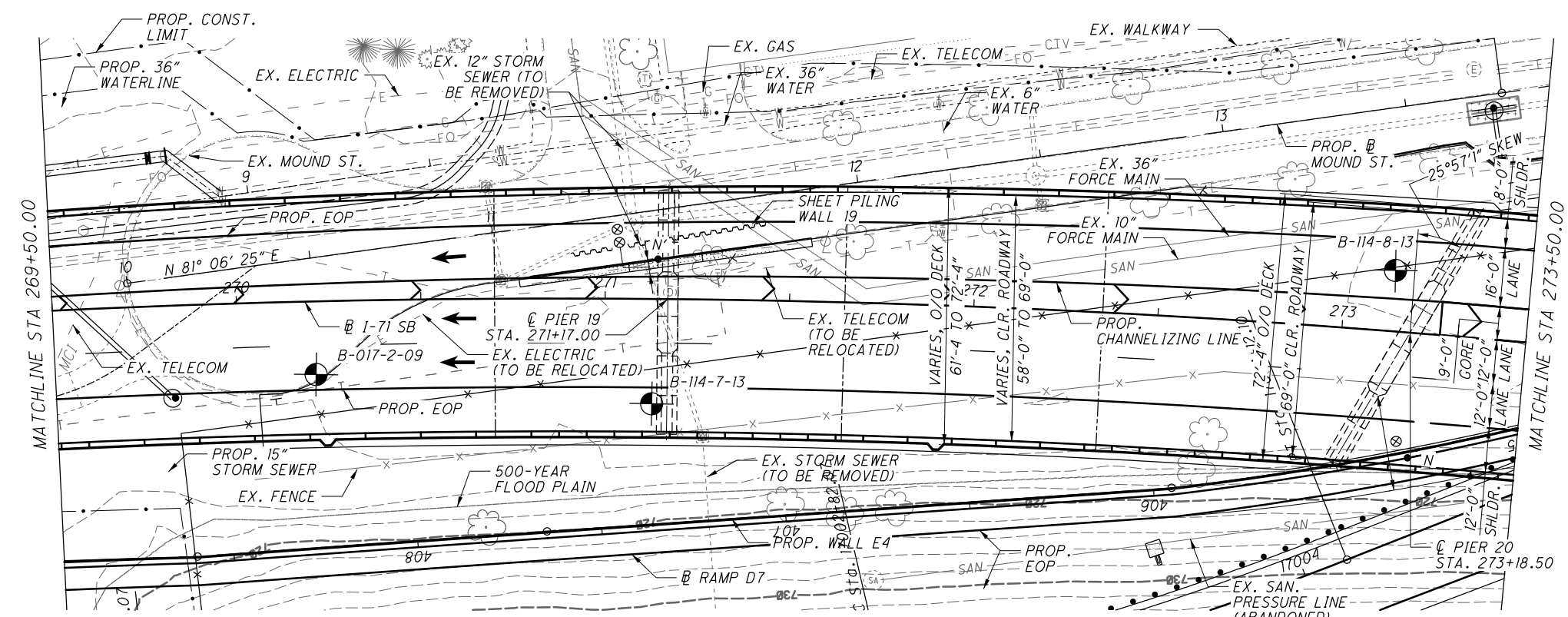
PT. M' = 61.36' ACTUAL VERTICAL CLEARANCE

⊕ = 25'-0" REQUIRED MINIMUM HORIZONTAL
CLEARANCE (BASED ON NS RAILROAD REQUIREMENTS)
68'-9 $\frac{7}{8}$ " = ACTUAL HORIZONTAL CLEARANCE

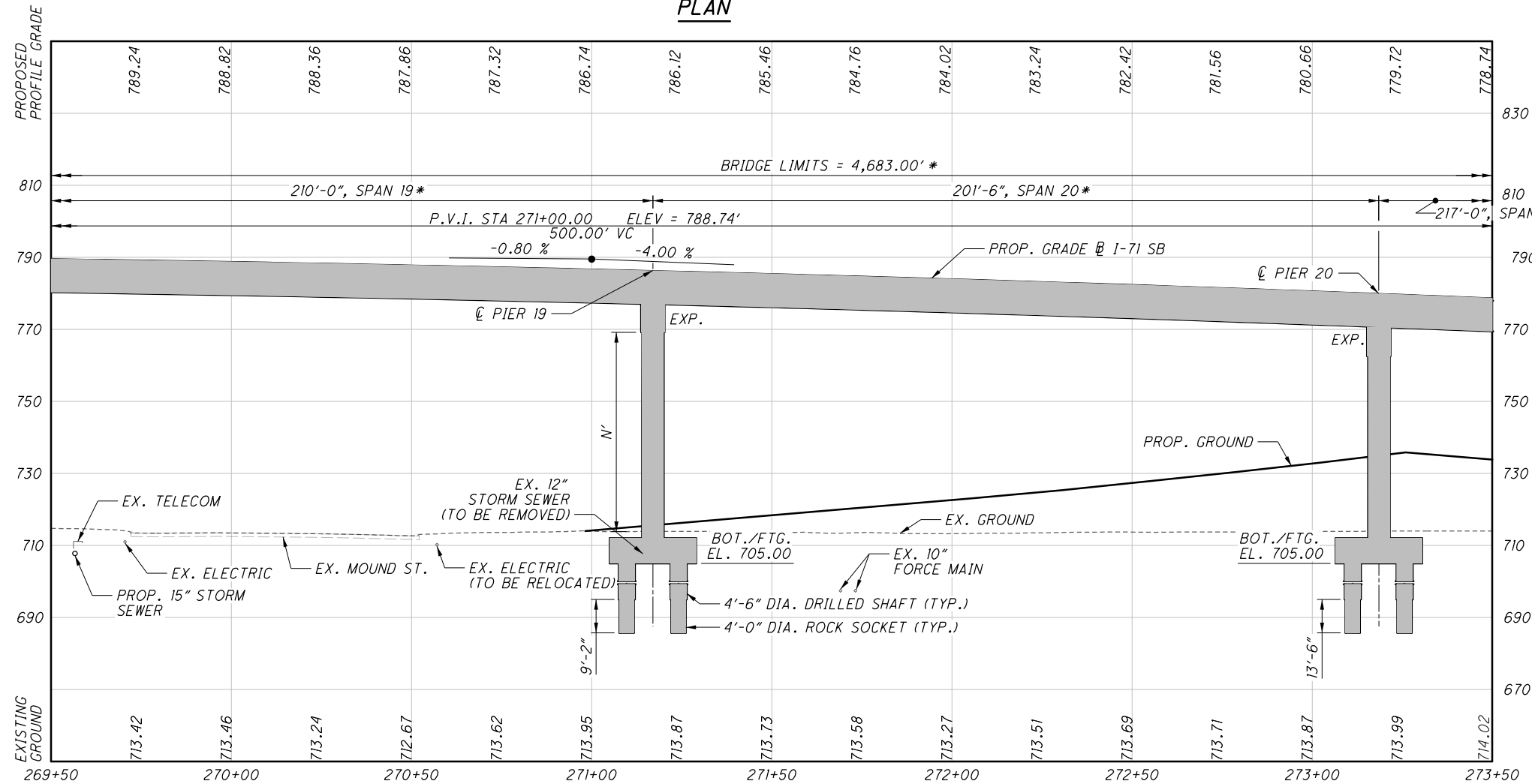
⊕⊕ = 25'-0" REQUIRED MINIMUM HORIZONTAL
CLEARANCE (BASED ON CSX RAILROAD REQUIREMENTS)
82'-3³/₈" = ACTUAL HORIZONTAL CLEARANCE

NOTES:

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



PLAN



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
 $\Delta = 30^\circ 53' 23''$ (RT)
 $D_c = 2^\circ 00' 00''$
 $R = 2,864.79'$
 $T = 791.51'$
 $L = 1,544.48'$
 $E = 107.33'$
PC Sta. 261+80.04
PT Sta. 277+24.52
 V (des) = 60 MPH
 e (max) = 0.045
WIDENING = N/A

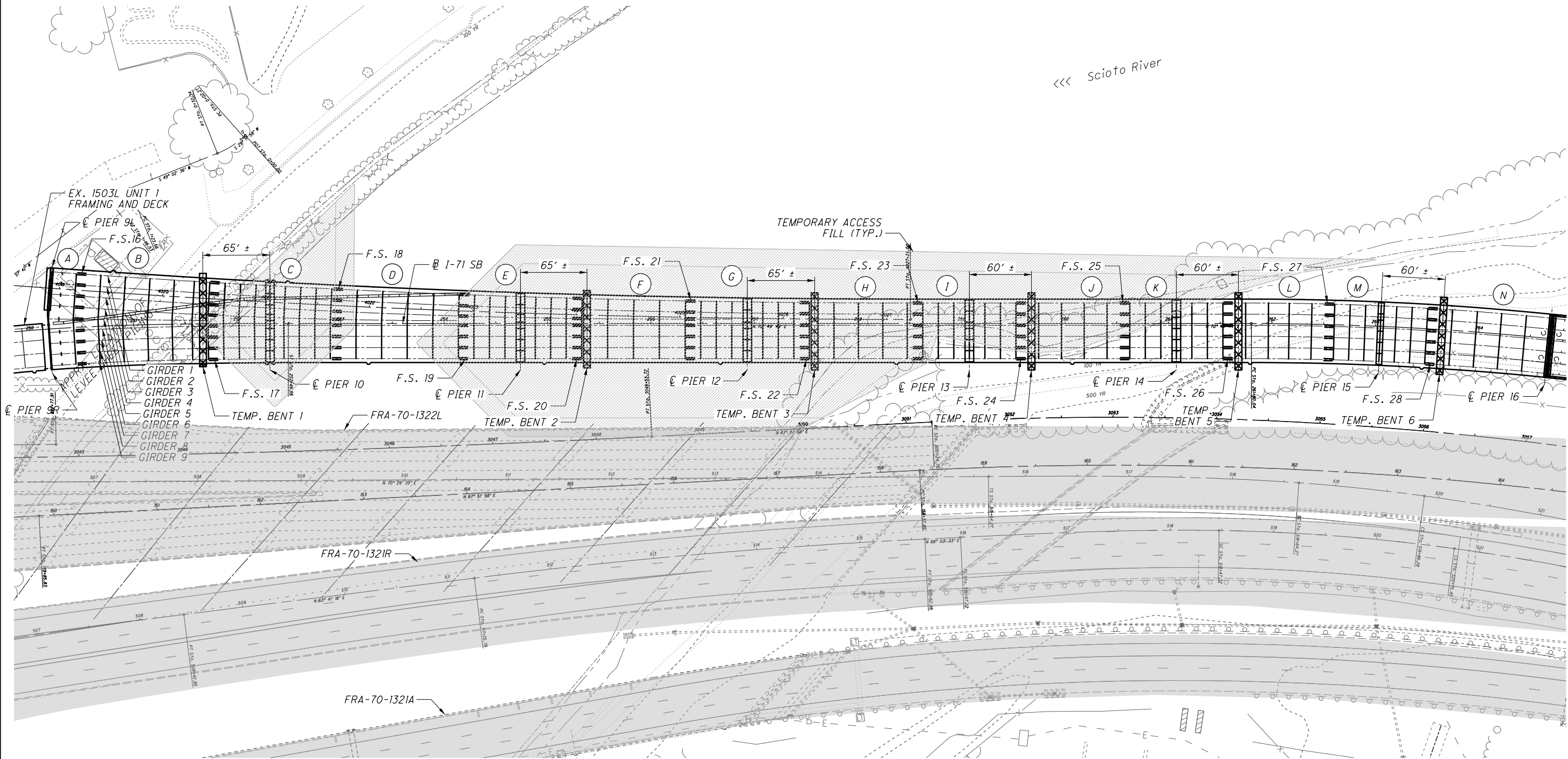
- 15'-6" MIN. REQUIRED VERTICAL CLEARANCE
PT N = 16.80' ACTUAL VERTICAL CLEARANCE (SHOWN IN PROFILE VIEW ON NEXT SHEET)
PT N' = 44.72' ACTUAL VERTICAL CLEARANCE

- $\otimes$ = 29'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
25'-10 7/8" = ACTUAL HORIZONTAL CLEARANCE (PROTECTED BY BARRIER)
- $\otimes\otimes$ = 8'-0" REQUIRED MINIMUM HORIZONTAL CLEARANCE (BASED ON CLEAR ZONE)
3'-6 7/8" = 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:

- FOR ADDITIONAL INFORMATION, SEE SHEET 1/268.

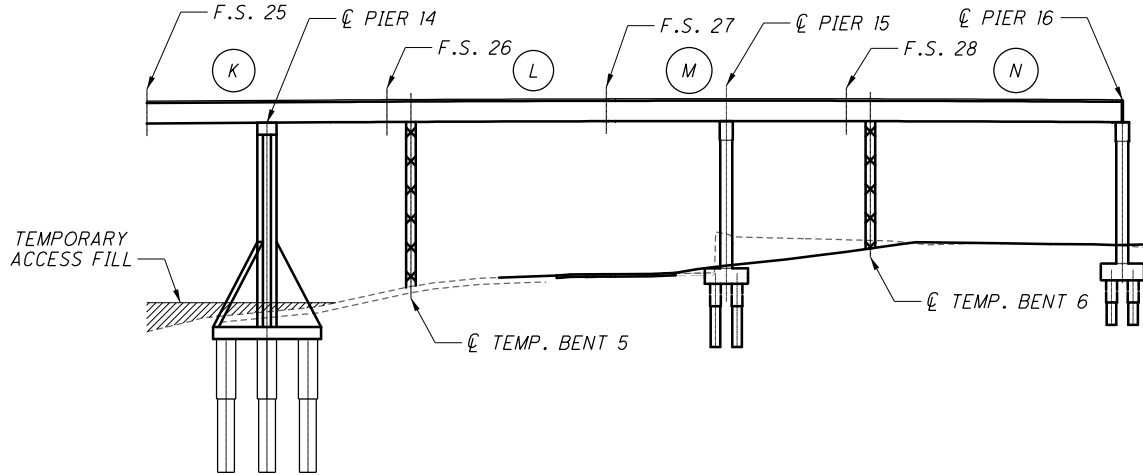


LEGEND:

- DENOTES GIRDER SEGMENT
 ■ ACTIVE ROADWAYS
 F.S. FIELD SPLICE

NOTES:

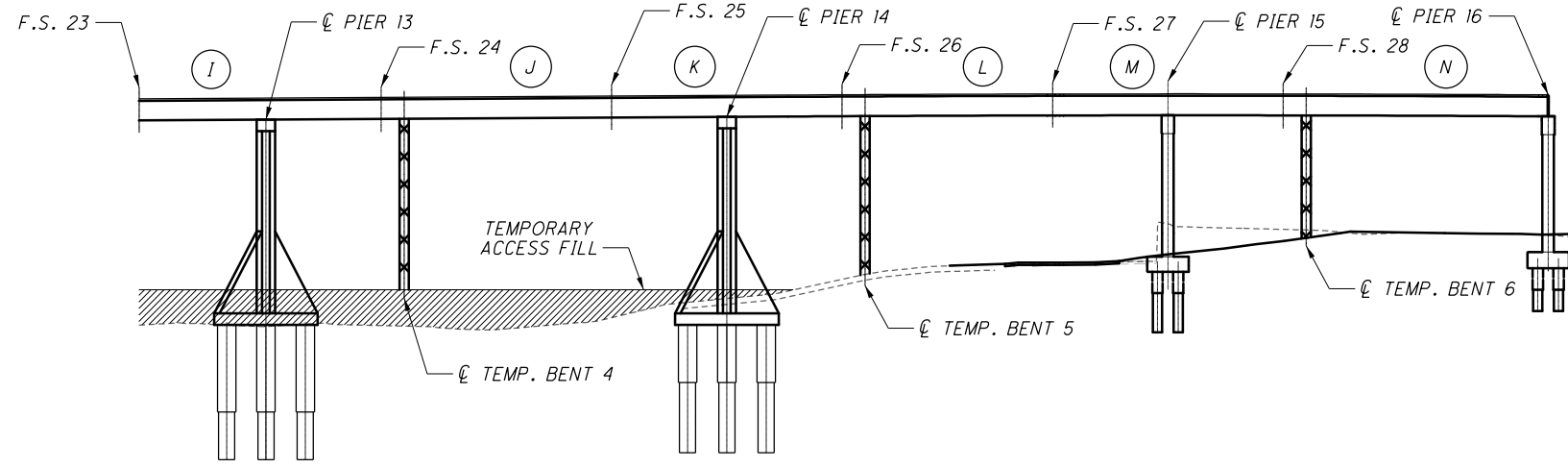
1. FOR FRAMING PLAN, SEE SHEETS 132/268 THRU 133/268.
2. FOR STEEL ERECTION NOTES AND DETAILS, SEE SHEETS 259/268 THRU 262/268.



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.

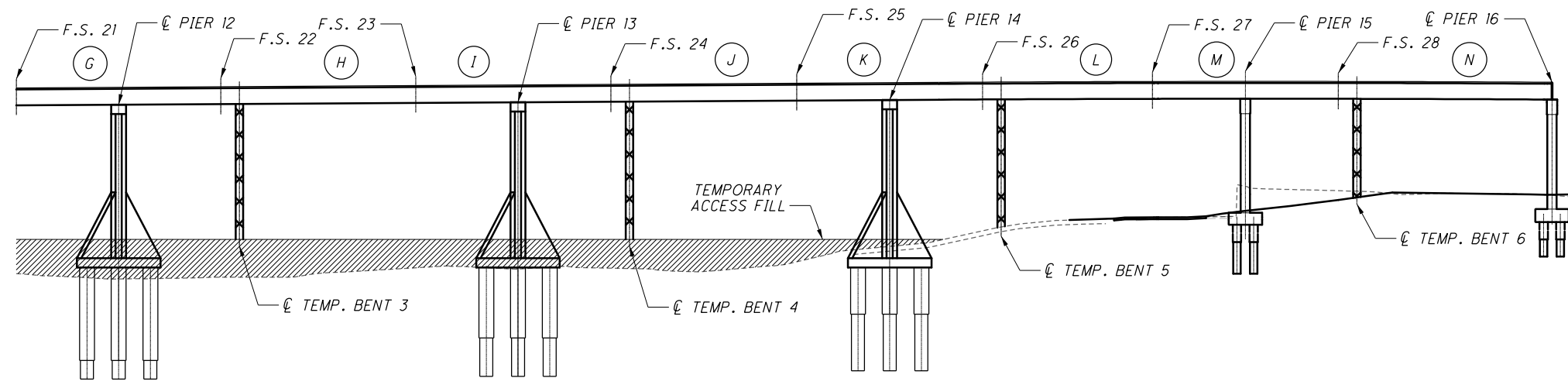
STAGE 2



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 (C) 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 3



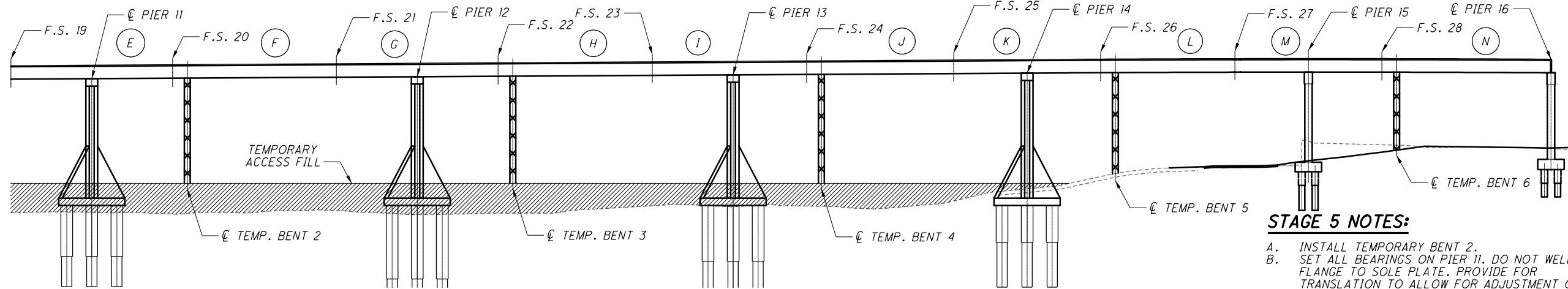
STAGE 4 NOTES:

- 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 (C) 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.

STAGE 4

NOTES:

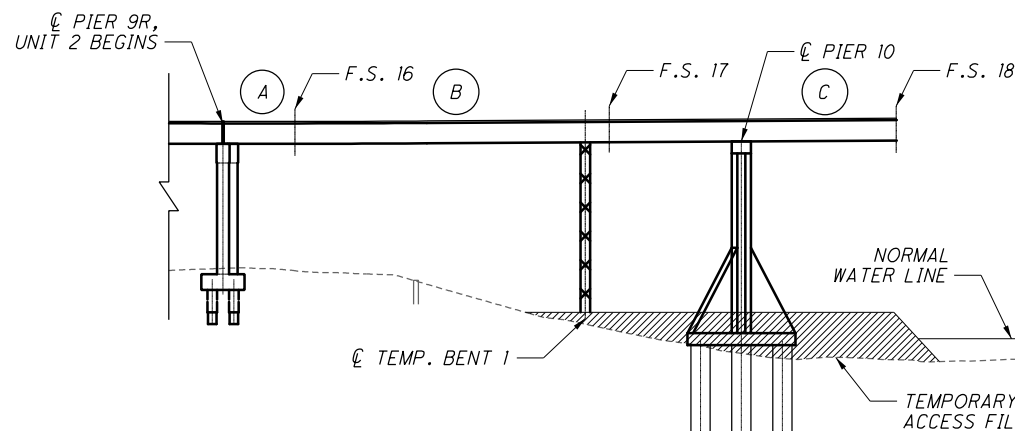
- 1. FOR TYPICAL NOTES AND LEGEND, SEE SHEET [259/268].
- 2. FOR ERECTION PLAN, SEE SHEET [258/268].



STAGE 5 NOTES:

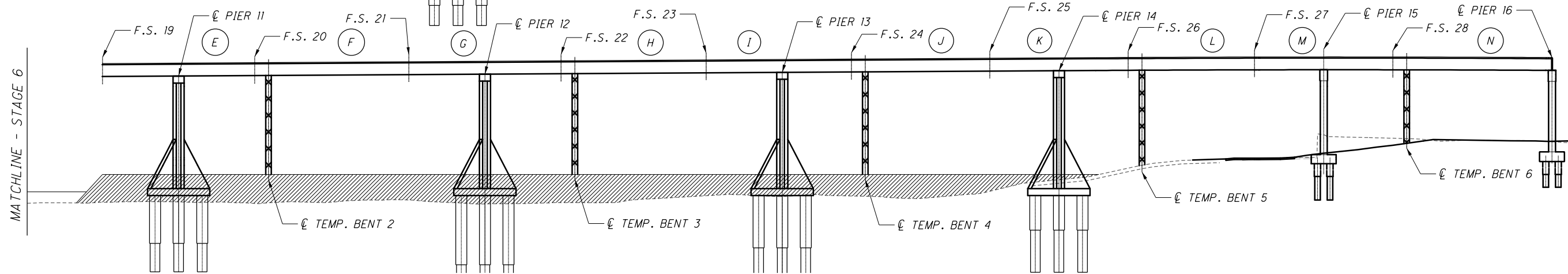
- INSTALL TEMPORARY BENT 2.
- SET ALL BEARINGS ON PIER 11. DO NOT WELD FLANGE TO SOLE PLATE. PROVIDE FOR TRANSLATION TO ALLOW FOR ADJUSTMENT OF THE GAP BETWEEN GIRDER SEGMENTS (E) AND (F), AND TO ALLOW FINAL POSITIONING OF THE GIRDER BY PIER JACKING.
- ERECT GIRDER SEGMENTS (E) AND (F) IN ACCORDANCE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

STAGE 5



STAGE 6 NOTES:

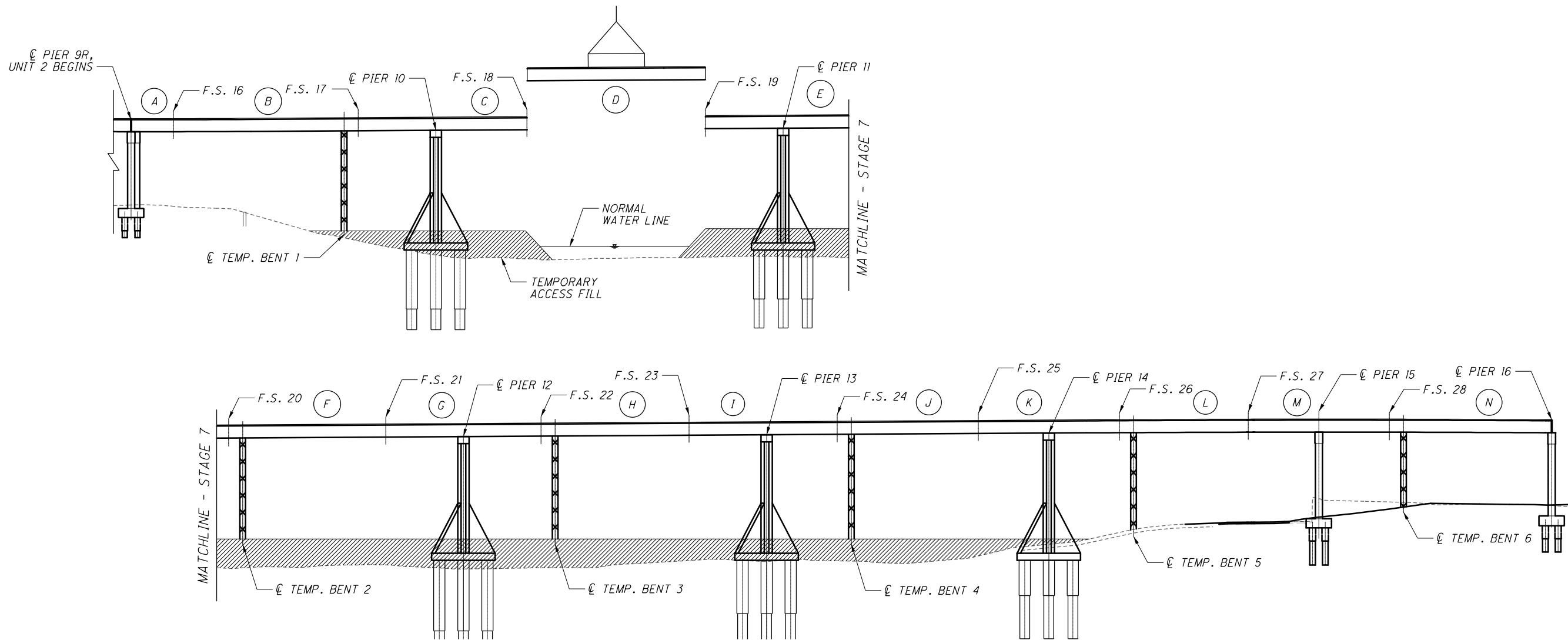
- INSTALL TEMPORARY BENT 1.
- SET ALL BEARINGS ON PIER 9R.
- BLOCK ALL BEARINGS AT PIER 9R TO PREVENT TRANSLATION IN THE LONGITUDINAL DIRECTION.
- SET ALL BEARINGS ON PIER 10.
- WHILE ON THE GROUND, ATTACH SEGMENTS (A) AND (B) BY INSTALLING FIELD SPLICE 16 FOR GIRDER 9 AND GIRDER 8.
- INSTALL ALL CROSSFRAMES BETWEEN GIRDER 9 AND GIRDER 8 FOR SEGMENTS (A) AND (B).
- WHILE SEGMENT (C) IS ON THE GROUND, INSTALL ALL CROSSFRAMES BETWEEN GIRDER 9 AND GIRDER 8.
- 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.
- 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.
- 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.
- RELEASE BOTH CRANES AFTER ASSURING STABILITY OF THE STEEL.
- 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.
- 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.
- RELEASE BOTH CRANES AFTER ASSURING STABILITY OF THE STEEL.
- REPEAT STEPS "L" THROUGH "N" FOR GIRDERS 6 THROUGH 1.
- LEAVE TEMPORARY BENTS 1, 2, 3, 4, 5, AND 6 IN PLACE.



STAGE 6

NOTES:

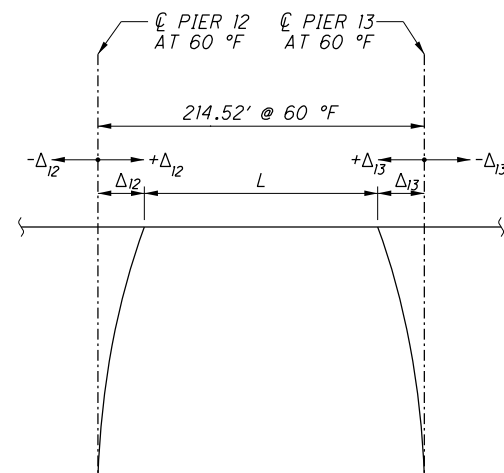
- FOR TYPICAL NOTES AND LEGEND, SEE SHEET [259/268].
- FOR ERECTION PLAN, SEE SHEET [258/268].



STAGE 7

TOP OF PIER LONGITUDINAL TRANSLATION (ALONG REFERENCE LINE)			
ERECTION TEMPERATURE	L	Δ_{12}	Δ_{13}
(°F)	(FT)	(IN)	(IN)
0	214.44	0.46	0.55
10	214.45	0.38	0.46
20	214.46	0.30	0.36
30	214.48	0.23	0.27
40	214.49	0.15	0.18
50	214.51	0.08	0.09
60	214.52	0.00	0.00
70	214.53	-0.08	-0.09
80	214.55	-0.15	-0.18
90	214.56	-0.23	-0.27
100	214.58	-0.30	-0.36

NOTE: 5.7 KIPS FORCE REQUIRED AT PIER 12 FOR EACH 0.1 INCH MOVEMENT. 5.8 KIPS FORCE REQUIRED AT PIER 13 FOR EACH 0.1 INCH MOVEMENT.



PIER LONGITUDINAL TRANSLATION DIAGRAM

STAGE 7 NOTES:

- A. ADJUST POSITION OF GIRDER SEGMENTS ④-⑥ TO PROVIDE CORRECT GAP LENGTH FOR ERECTION OF GIRDER SEGMENT ⑦.
- B. ERECT GIRDER 9, SEGMENT ①, AND INSTALL FIELD SPLICE 18 AND FIELD SPLICE 19, FULLY TIGHTENING ALL BOLTS. CONTINUE TO SUPPORT GIRDER 9, SEGMENT ① NEAR THE MIDPOINT OF THE SEGMENT USING A HOLD CRANE.
- C. ERECT GIRDER 8, SEGMENT ①, AND INSTALL FIELD SPLICE 18 AND FIELD SPLICE 19, FULLY TIGHTENING ALL BOLTS. INSTALL ALL CROSS FRAMES BETWEEN GIRDERS 8 AND 9 OF SEGMENT ①, FULLY TIGHTENING ALL BOLTS. ONCE ALL CROSS FRAMES ARE INSTALLED AND ALL BOLTS FULLY TIGHTENED, THE HOLD CRANE ON GIRDER 9 MAY BE RELEASED.
- D. ERECT GIRDER 7, SEGMENT ①, AND INSTALL FIELD SPLICE 18 AND FIELD SPLICE 19, FULLY TIGHTENING ALL BOLTS. INSTALL ALL CROSS FRAMES BETWEEN GIRDERS 7 AND 8 OF SEGMENT ①, FULLY TIGHTENING ALL BOLTS.
- E. REPEAT STEP "H" FOR GIRDERS 6, 4, 3, 2, AND 1.
- F. ADJUST LONGITUDINAL POSITION OF GIRDER SEGMENTS ④-⑥ TO ALIGN THE GIRDER BEARING STIFFENER WITH THE CENTER OF BEARING AT PIER 13.
- G. FIELD WELD THE BOTTOM FLANGE TO THE BEARING SOLE PLATE AT PIER 13 AS INDICATED IN THE BEARING PLANS. REMOVE ANY TEMPORARY PLATES, PTFE SHEETS, ETC. USED TO ALLOW TRANSLATION DURING ERECTION.
- H. USING THE TABLE OF TOP OF PIER LONGITUDINAL TRANSLATIONS, JACK, PULL, OR OTHERWISE DEFLECT PIER 12 TO ALIGN THE GIRDER BEARING STIFFENER WITH THE CENTER OF BEARING AT PIER 12.
- I. FIELD WELD THE BOTTOM FLANGE TO THE BEARING SOLE PLATE AT PIER 12 AS INDICATED IN THE BEARING PLANS. REMOVE ANY TEMPORARY PLATES, PTFE SHEETS, ETC. USED TO ALLOW TRANSLATION DURING ERECTION.
- J. REMOVE ALL TEMPORARY BENTS AND BLOCKING AFTER ENSURING COMPLETE STABILITY OF THE GIRDER SYSTEM.

NOTES:

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



**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