

SPECIAL PROVISIONS

WATERWAY PERMITS CONDITIONS

C-R-S: SUM-77/277/224/Various

PID: 106002

Date: March 15, 2021

1. Waterway Permits Time Restrictions:

Section 404 Regional General Permit A - Linear Transportation (RGP A) and Nationwide Permit 23 - Approved Categorical Exclusions (NWP 23) are pending for SUM-77/277/224/Various, PID 106002. A copy of the RGP A, NWP 23, and the United States Army Corps of Engineers (USACE) authorization letter shall be kept at the work site at all times and made available to all contractors and subcontractors. Work in waters is prohibited until the permits have been authorized.

For authorized work in aquatic resources (including streams, wetlands, jurisdictional ditches, 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 to the USACE with the Pre-Construction Notification 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 (Station)	Work restriction dates (No in-stream work permitted)
Tuscarawas River	430+50	April 15 - June 30
Stream 2	443+36.5	None
Stream 3	207+00, 102+19, and 87+50	None
Stream 4	206+00	None

*Restriction dates do not apply if the stream has been dewatered prior to April 15.

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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 Summit County Sheriff’s Office at (330) 643-2122.

6. Aquatic Resource Demarcation:

Attached Tables A and B include detailed fill quantities pending authorization within the aquatic resources. Aquatic resources and proposed impacts included in 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: Tuscarawas River

Special Provisions Notes:

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

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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."

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

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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 jurisdictional waters of the U.S. 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. Temporary Fill Activities:

Temporary fill into Streams 2, 3, and 4, and Wetlands C, D, E, F, G, J, and K is not authorized for this project. Temporary fill includes, but is not limited to, causeways, work pads, cofferdams, sheet piling, temporary bridges, and construction equipment. Any unauthorized temporary impacts that occur will be in violation of Section 404 and 401 of the Clean Water Act.

13. Construction Completion Certification:

Upon completion of the work, notify the Engineer. The USACE Construction Completion Certification 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 the certification form will be provided upon permit authorization.

14. 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.

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Table A. Detailed Fill and Discharge Quantities into Streams

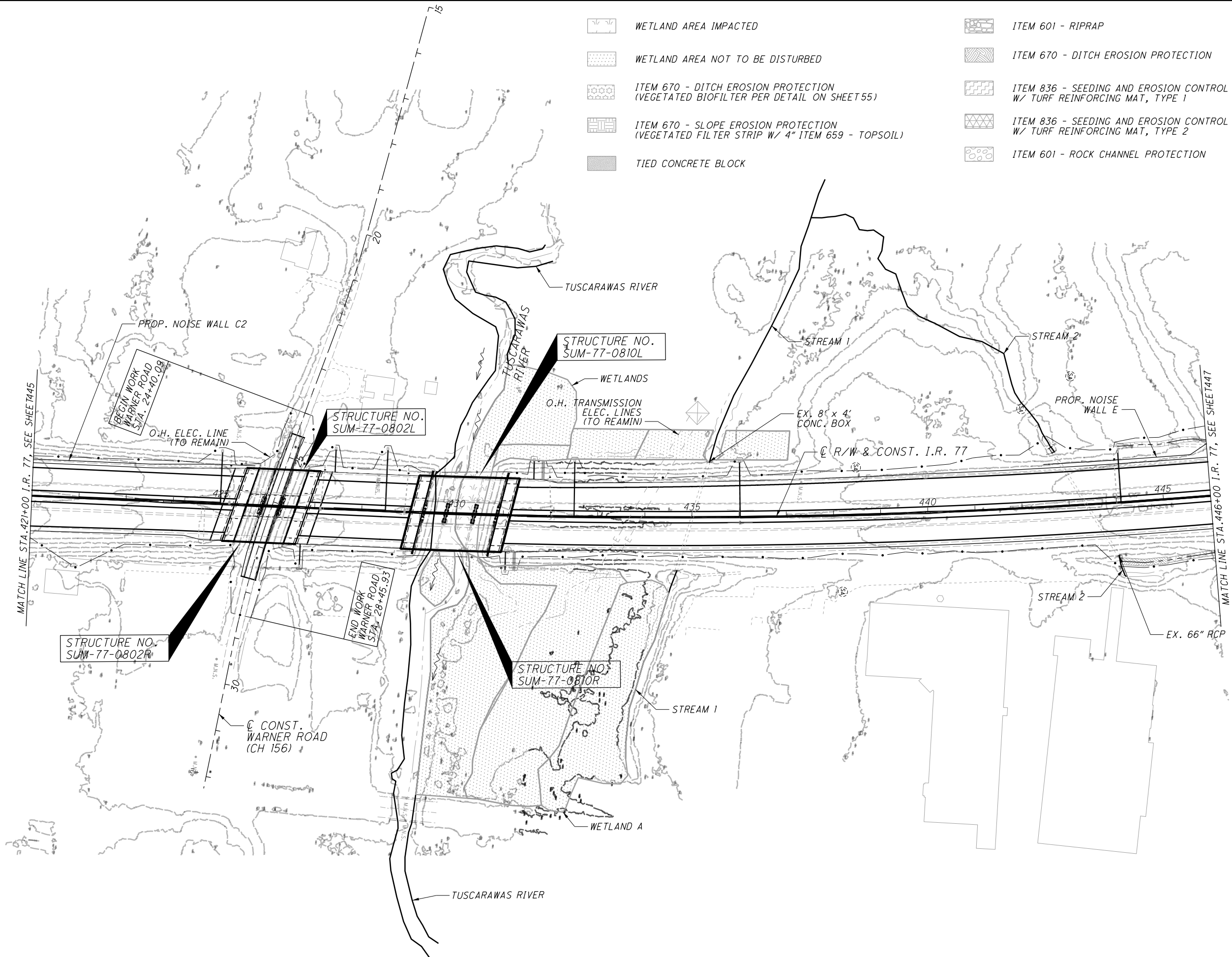
STREAMS				Permanent Fill Within/Below OHWM						Total Permanent Fill Within OHWM			Total Temporary Fill Within OHWM			TOTAL IMPACT (Upstream to Downstream)
Aquatic Resource ID	Station	Description of Impacts/Activities Within OHWM	Total Length Within Project Area	Proposed Concrete (Includes Culvert, Piers, Walls, Abutments, etc.)			Proposed RCP									
				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)
Tuscarawas River	430+50	Concrete Pier Widening /Sheet Pile Cofferdam & TAF	367	52	0.024	77.0	0.0	0.000	0.0	52	0.024	77.0	92	0.063	204.4	92
Stream 2	443+36.5	Culvert extension/Concrete Pipe & RCP	482	18	0.003	2.3	22.0	0.004	2.9	40	0.006	5.2	0	0.000	0.0	40
Stream 3	207+00	Culvert extension/Concrete Pipe & RCP	2613	20	0.002	3.0	24.0	0.002	3.6	44	0.004	6.5	0	0.000	0.0	44
	102+19	Culvert extension/Concrete Pipe & RCP		26	0.002	3.9	8.0	0.001	1.2	34	0.003	5.0	0	0.000	0.0	34
	87+50	Culvert extension Bank stabilization, & Stream Relocation /Concrete Pipe & RCP		16	0.001	2.4	453.0	0.042	67.1	469	0.043	69.5	0	0.000	0.0	469
Stream 4	206+00	Bank stabilization, & Stream Relocation/ RCP	1060	0	0.000	0.0	434.0	0.149	60.3	434	0.149	60.3	0	0.000	0.0	434
SUM:				132	0.032	88.6	941.0	0.198	135.0	1,073	0.229	223.5	92	0.063	204.4	1,113

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Table B. Detailed Fill and Discharge Quantities into Wetlands

WETLANDS, JURISDICTIONAL DITCHES, PONDS				Permanent Fill Within Wetland Boundary						Total Permanent Fill Within Wetland Boundary			Total Temporary Fill Within Wetland Boundary			TOTAL IMPACT
Aquatic Resource ID	Station	Description of Impacts/Activities within Wetland Boundary	Total Acreage Within Project Area	Proposed Concrete (Includes Culvert, Piers, Walls, Abutments, etc.)			Proposed RCP			Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)	Area (AC)
				Length (LF)	Area (AC)	Volume (CY)	Length (LF)	Area (AC)	Volume (CY)							
Wetland A	430+50	Concrete Pier Widening/Access Fill - Granular	6.68	45	0.007	11.3	0	0.000	0.0	52	0.055	88.7	160	0.210	338.8	0.055
	431+25	Culvert installation /Pipe, RCP, Earthen Fill		15	0.001	1.6	10	0.001	0.0	35	0.011	16.1	0	0.000	0.0	0.011
	431+50	Culvert installation /RCP & Earthen Fill		0	0.000	0.0	5	0.001	0.0	15	0.002	1.6	0	0.000	0.0	0.002
	432+50	Culvert installation /Earthen Fill		0	0.000	0.0	0	0.000	0.0	10	0.001	1.6	0	0.000	0.0	0.001
	436+00	Culvert installation /Earthen Fill		0	0.000	0.0	0	0.000	0.0	10	0.001	1.6	0	0.000	0.0	0.001
Wetland C	504+00	Grading (ramp reconfiguration, embankment slope)/Earthen Fill	0.11	0	0.000	0.0	0	0.000	0.0	30	0.110	177.5	0	0.000	0.0	0.110
Wetland D	502+50	Culvert extension /Earthen Fill	0.03	0	0.000	0.0	0	0.000	0.0	10	0.004	6.5	0	0.000	0.0	0.004
Wetland E	894+00	Overhead sign power connection/ Earthen Fill	0.11	0	0.000	0.0	0	0.000	0.0	15	0.007	11.3	0	0.000	0.0	0.007
Wetland F	500+00	Grading (ramp reconfiguration, embankment slope)/Earthen Fill	0.12	0	0.000	0.0	0	0.000	0.0	10	0.021	33.9	0	0.000	0.0	0.021
Wetland G	783+00	Grading (ramp reconfiguration, embankment slope)/Earthen Fill	0.11	0	0.000	0.0	0	0.000	0.0	10	0.019	30.7	0	0.000	0.0	0.019
Wetland J	274+00	Noise Wall/Fill - Earthen	0.03	0	0.000	0.0	0	0.000	0.0	12	0.030	48.4	0	0.000	0.0	0.030
Wetland K	593+00	Culvert extension /RCP & Earthen Fill	0.03	0	0.000	0.0	10	0.001	1.613	37	0.003	4.8	0	0.000	0.0	0.003
SUM:				60	0.008	12.9	25	0.003	1.6	246	0.264	422.7	160	0.210	338.8	0.264

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- WETLAND AREA IMPACTED
- WETLAND AREA NOT TO BE DISTURBED
- ITEM 670 - DITCH EROSION PROTECTION (VEGETATED BIOFILTER PER DETAIL ON SHEET 55)
- ITEM 670 - SLOPE EROSION PROTECTION (VEGETATED FILTER STRIP W/ 4" ITEM 659 - TOPSOIL)
- TIED CONCRETE BLOCK
- ITEM 601 - RIPRAP
- ITEM 670 - DITCH EROSION PROTECTION
- ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 1
- ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 2
- ITEM 601 - ROCK CHANNEL PROTECTION

CALCULATED ZJP CHECKED PJF

0 100 200
HORIZONTAL SCALE IN FEET

PROJECT SITE PLAN
STA. 421+00 TO STA. 446+00

SUM-77 / 277 / 224
VARIOUS

446
1288

FOR GEOMETRIC PLAN, SEE SHEETS 13 -22
FOR CURVE DATA, SEE SHEETS 23-26



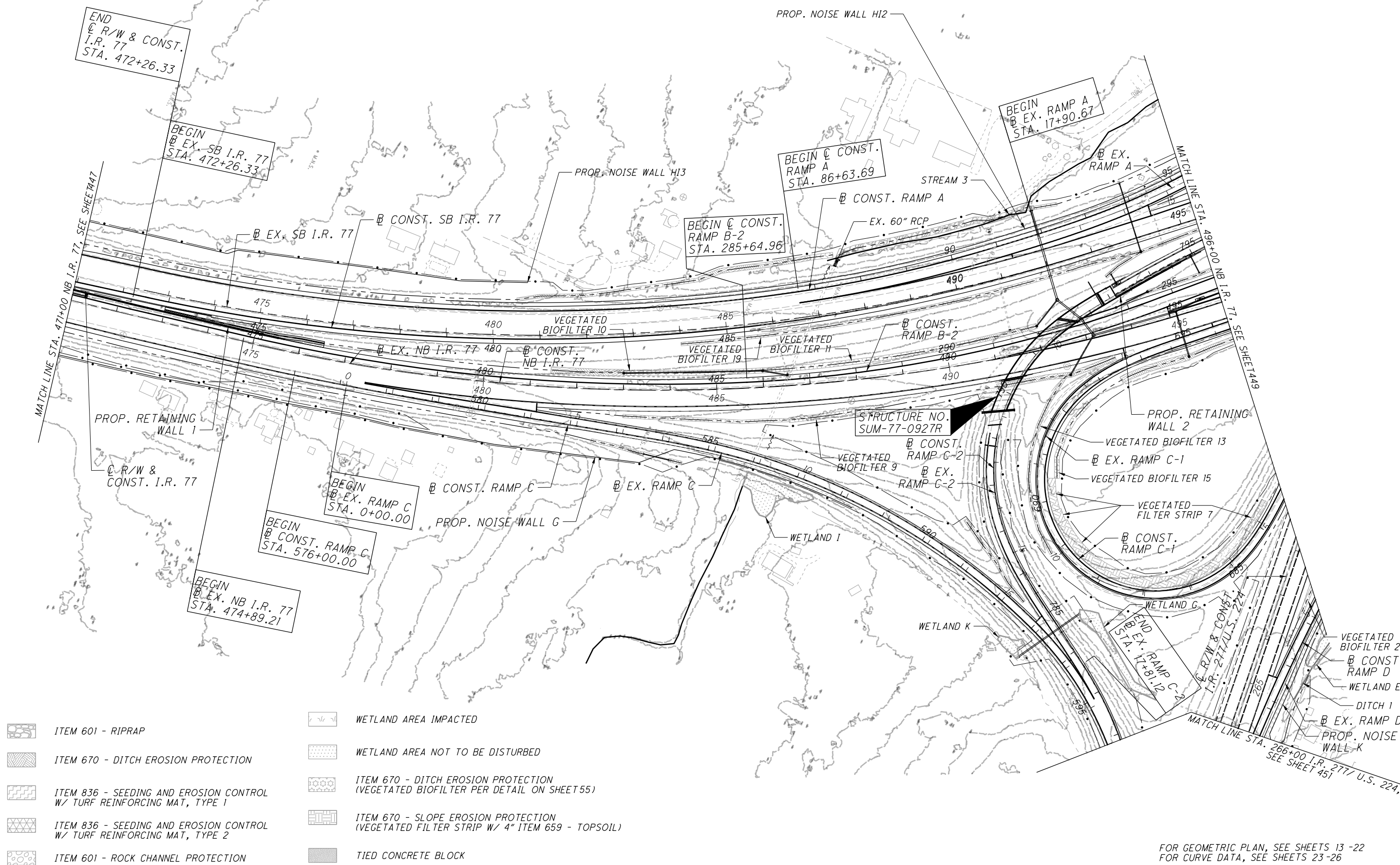
CALCULATED ZJP CHECKED PJF

PROJECT SITE PLAN
STA. 471+00 TO STA. 496+00

SUM-77 / 277 / 224
VARIOUS

448
1288

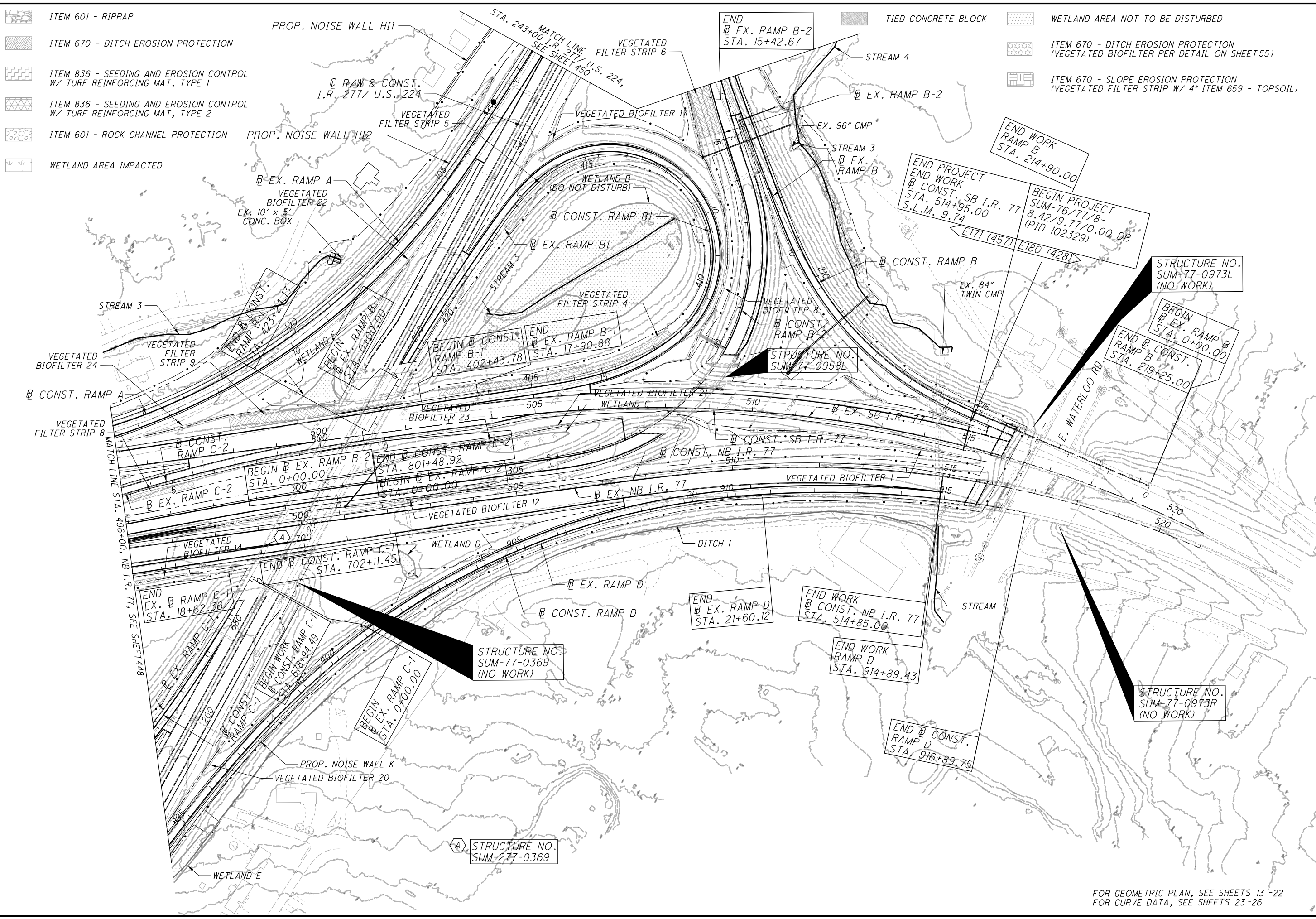
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|--|--|--|---|
| | ITEM 601 - RIPRAP | | WETLAND AREA IMPACTED |
| | ITEM 670 - DITCH EROSION PROTECTION | | WETLAND AREA NOT TO BE DISTURBED |
| | ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 1 | | ITEM 670 - DITCH EROSION PROTECTION (VEGETATED BIOFILTER PER DETAIL ON SHEET 55) |
| | ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 2 | | ITEM 670 - SLOPE EROSION PROTECTION (VEGETATED FILTER STRIP W/ 4" ITEM 659 - TOPSOIL) |
| | ITEM 601 - ROCK CHANNEL PROTECTION | | TIED CONCRETE BLOCK |

FOR GEOMETRIC PLAN, SEE SHEETS 13 -22
FOR CURVE DATA, SEE SHEETS 23 -26

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- ITEM 601 - RIPRAP
- ITEM 670 - DITCH EROSION PROTECTION
- ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 1
- ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 2
- ITEM 601 - ROCK CHANNEL PROTECTION
- WETLAND AREA IMPACTED

- TIED CONCRETE BLOCK
- WETLAND AREA NOT TO BE DISTURBED
- ITEM 670 - DITCH EROSION PROTECTION (VEGETATED BIOFILTER PER DETAIL ON SHEET 55)
- ITEM 670 - SLOPE EROSION PROTECTION (VEGETATED FILTER STRIP W/ 4" ITEM 659 - TOPSOIL)

CALCULATED ZJP CHECKED PJF

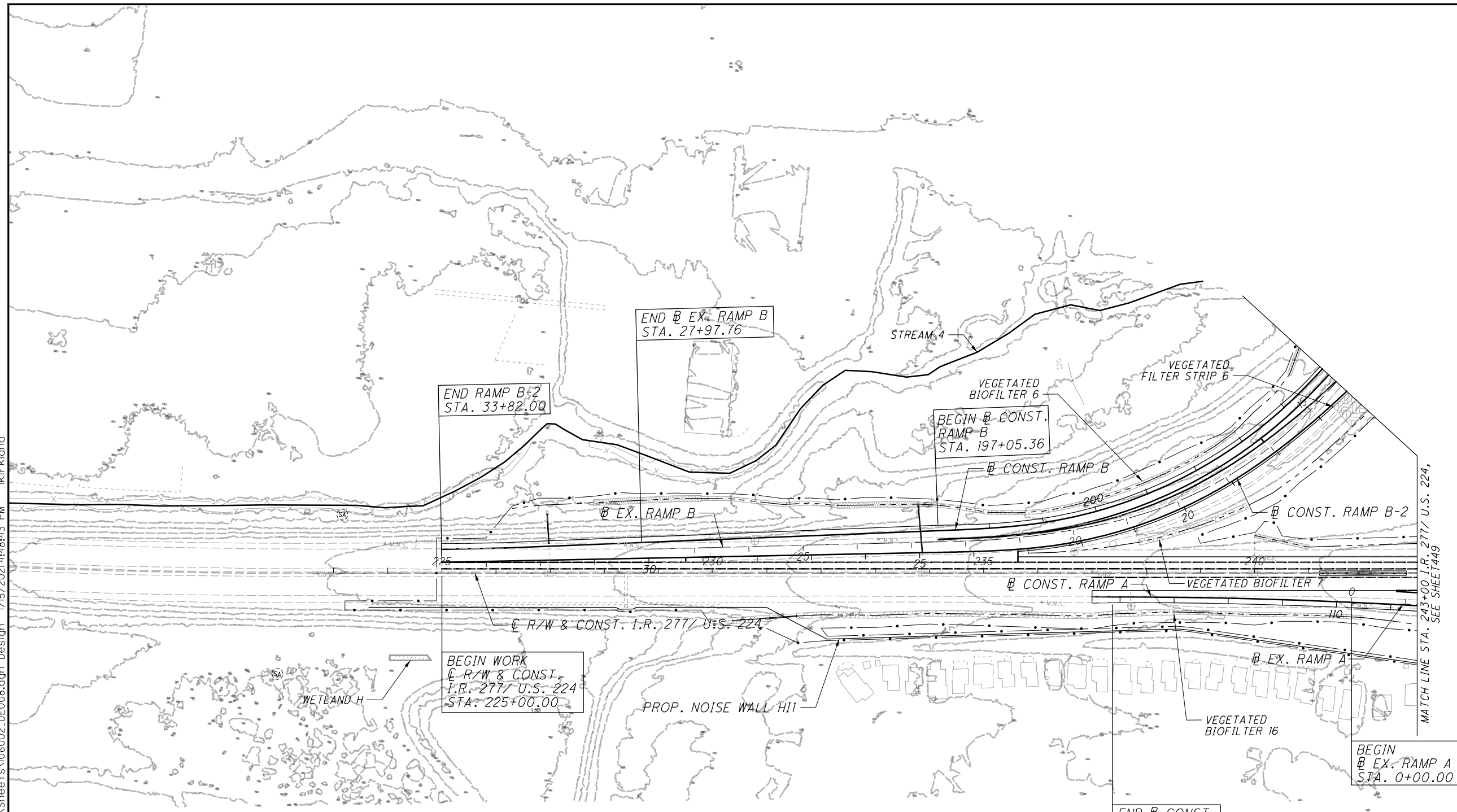
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PROJECT SITE PLAN
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SUM-77 / 277 / 224
VARIOUS

FOR GEOMETRIC PLAN, SEE SHEETS 13-22
FOR CURVE DATA, SEE SHEETS 23-26

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END @ EX. RAMP B
STA. 27+97.76

END RAMP B-2
STA. 33+82.00

STREAM 4

VEGETATED BIOFILTER 6
BEGIN @ CONST. RAMP B
STA. 197+05.36

VEGETATED FILTER STRIP 6

@ EX. RAMP B

@ CONST. RAMP B

@ CONST. RAMP B-2

@ R/W & CONST. I.R. 277/ U.S. 224

@ CONST. RAMP A

VEGETATED BIOFILTER 7

BEGIN WORK @ R/W & CONST. I.R. 277/ U.S. 224
STA. 225+00.00

PROP. NOISE WALL H11

@ EX. RAMP A

VEGETATED BIOFILTER 16

BEGIN @ EX. RAMP A
STA. 0+00.00

END @ CONST. RAMP A
STA. 114+13.78

MATCH LINE STA. 243+00 I.R. 277/ U.S. 224, SEE SHEET 449



ITEM 601 - RIPRAP



ITEM 670 - DITCH EROSION PROTECTION



ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 1



ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 2



ITEM 601 - ROCK CHANNEL PROTECTION



WETLAND AREA IMPACTED



WETLAND AREA NOT TO BE DISTURBED



ITEM 670 - DITCH EROSION PROTECTION (VEGETATED BIOFILTER PER DETAIL ON SHEET 55)



ITEM 670 - SLOPE EROSION PROTECTION (VEGETATED FILTER STRIP W/ 4' ITEM 659 - TOPSOIL)



TIED CONCRETE BLOCK

CALCULATED ZJP
CHECKED PJF

HORIZONTAL SCALE IN FEET

PROJECT SITE PLAN
BEGIN TO STA. 243+00 I.R. 277 / U.S. 224

SUM-77 / 277 / 224
VARIOUS



450
1288

FOR GEOMETRIC PLAN, SEE SHEETS 13 -22
FOR CURVE DATA, SEE SHEETS 23-26

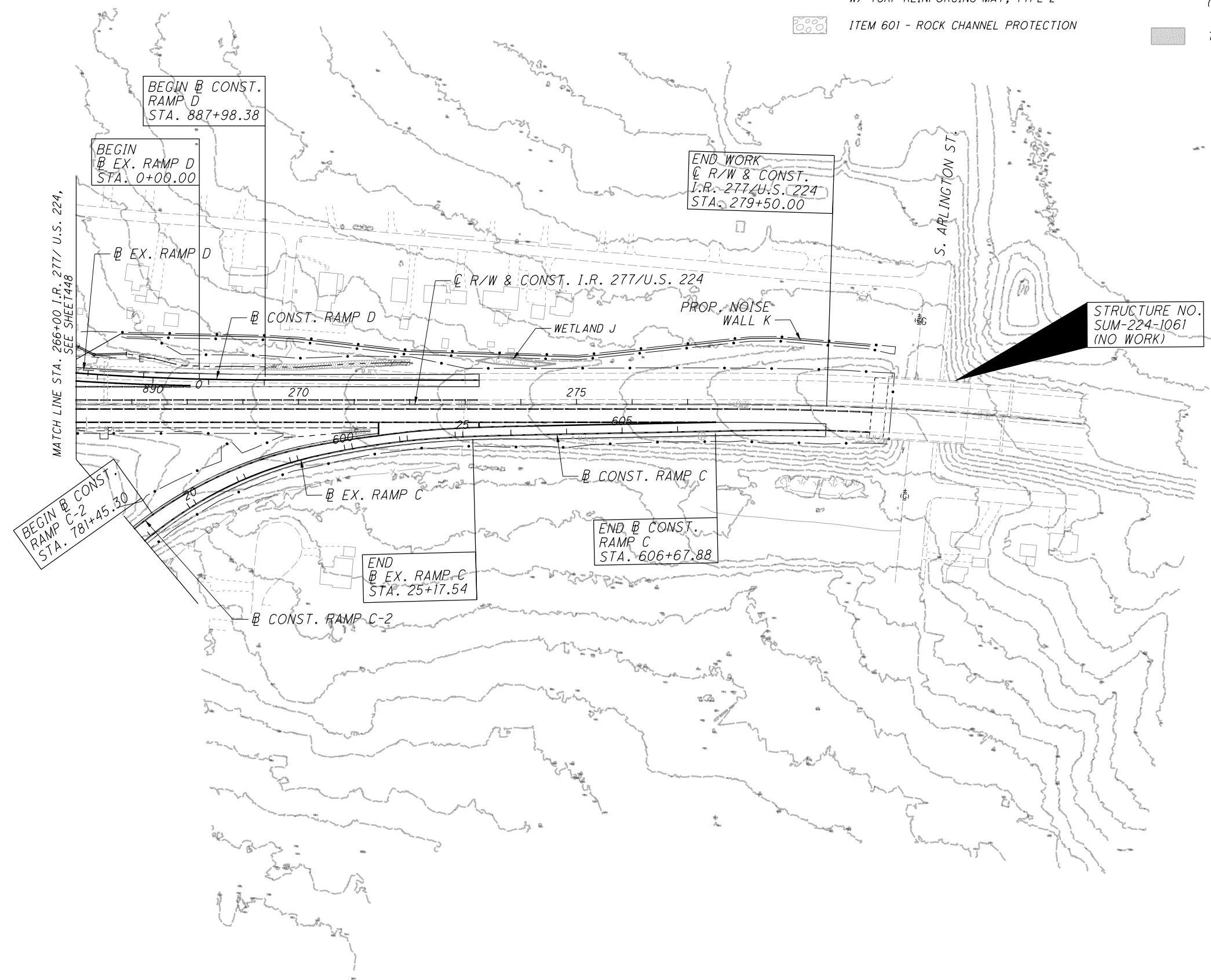
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-  ITEM 601 - RIPRAP
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-  ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 1
-  ITEM 836 - SEEDING AND EROSION CONTROL W/ TURF REINFORCING MAT, TYPE 2
-  ITEM 601 - ROCK CHANNEL PROTECTION
-  WETLAND AREA IMPACTED
-  WETLAND AREA NOT TO BE DISTURBED
-  ITEM 670 - DITCH EROSION PROTECTION (VEGETATED BIOFILTER PER DETAIL ON SHEET 55)
-  ITEM 670 - SLOPE EROSION PROTECTION (VEGETATED FILTER STRIP W/ 4" ITEM 659 - TOPSOIL)
-  TIED CONCRETE BLOCK

CALCULATED 0 ZJP
CHECKED PJF

HORIZONTAL SCALE IN FEET

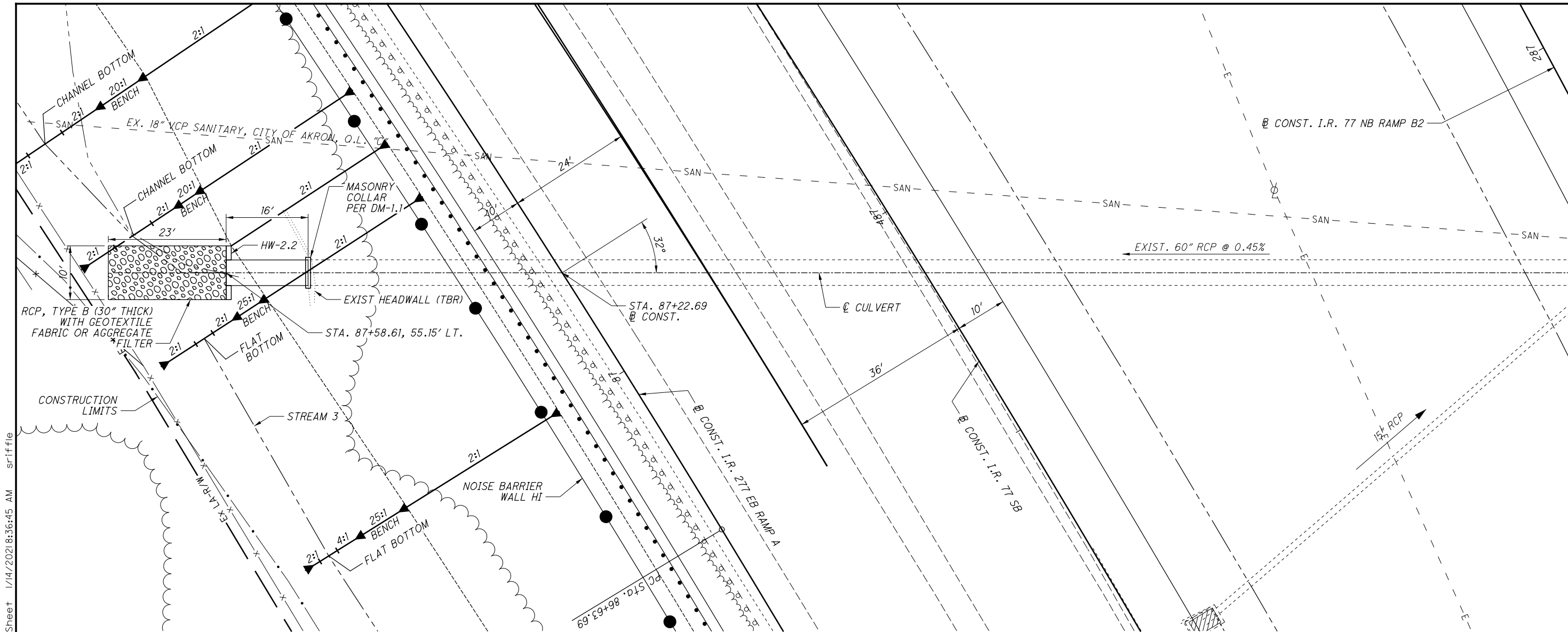


PROJECT SITE PLAN
STA. 266+00 TO END

SUM-77 / 277 / 224
VARIOUS

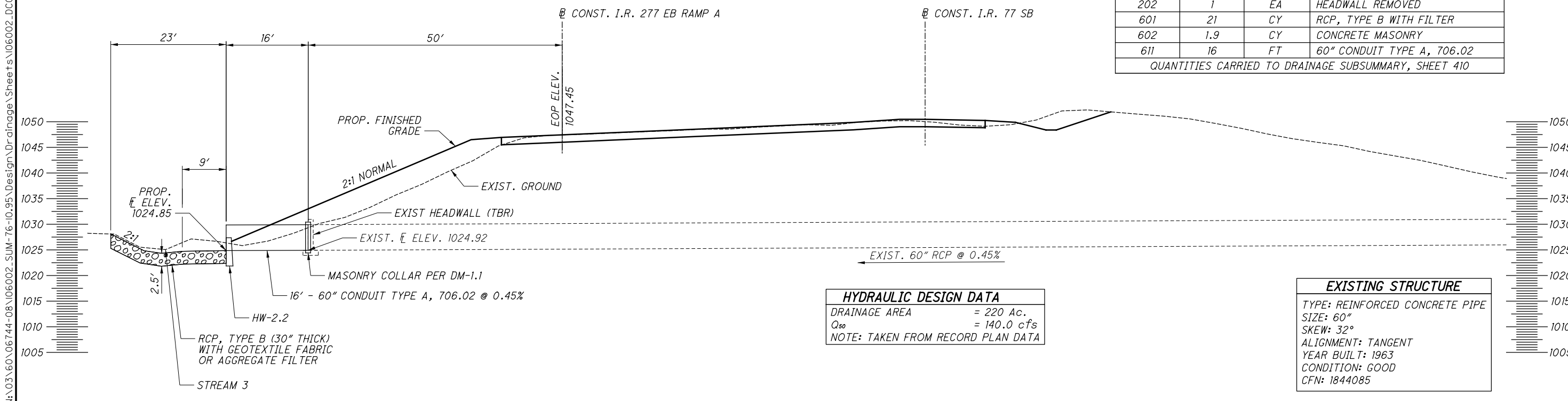
451
1288

FOR GEOMETRIC PLAN, SEE SHEETS 13 -22
FOR CURVE DATA, SEE SHEETS 23-26



NOTES:
 1. NO WORK IS PROPOSED FOR THE INLET SIDE OF THE EXISTING CULVERT.

ESTIMATED QUANTITIES			
ITEM	QUAN	UNIT	DESCRIPTION
202	1	EA	HEADWALL REMOVED
601	21	CY	RCP, TYPE B WITH FILTER
602	1.9	CY	CONCRETE MASONRY
611	16	FT	60" CONDUIT TYPE A, 706.02
QUANTITIES CARRIED TO DRAINAGE SUBSUMMARY, SHEET 410			

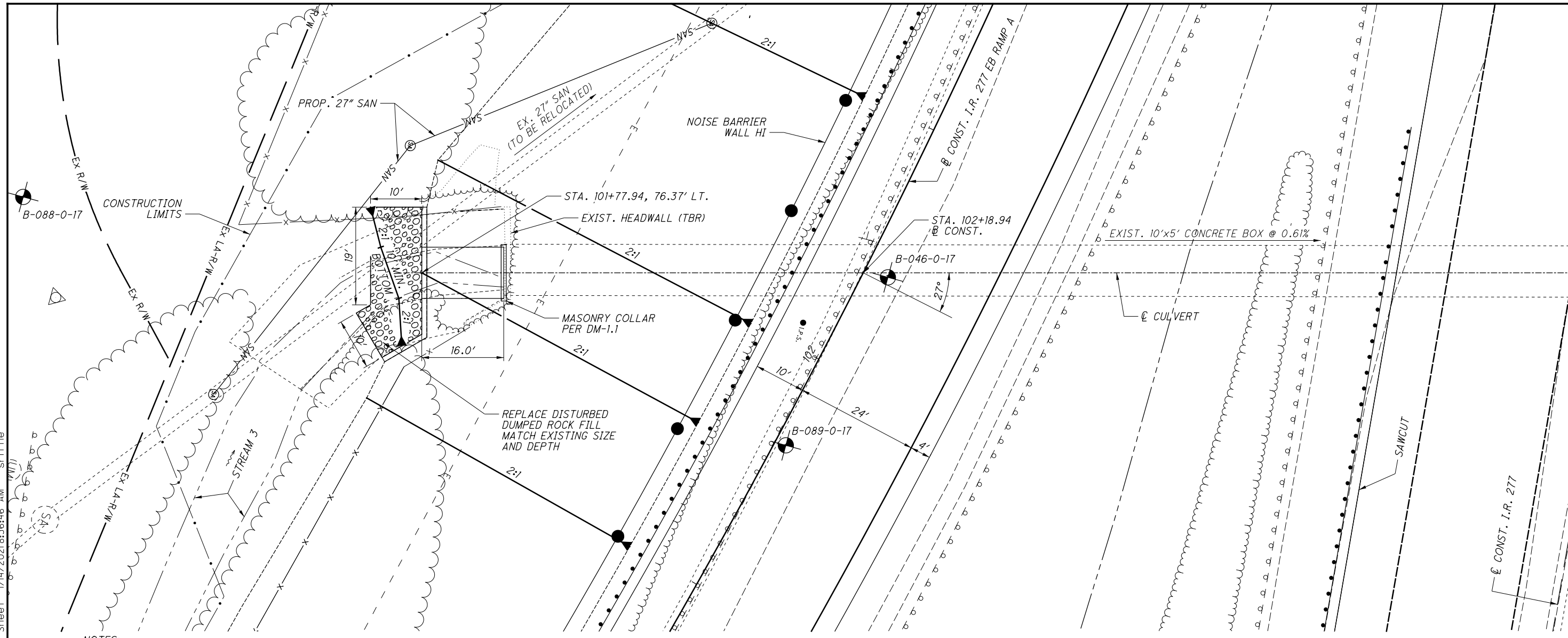


HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 220 Ac.
Q ₅₀	= 140.0 cfs
NOTE: TAKEN FROM RECORD PLAN DATA	

EXISTING STRUCTURE	
TYPE:	REINFORCED CONCRETE PIPE
SIZE:	60"
SKEW:	32°
ALIGNMENT:	TANGENT
YEAR BUILT:	1963
CONDITION:	GOOD
CFN:	1844085

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HORIZONTAL
SCALE IN FEET

N

**CULVERT DETAIL
RAMP A STA. 102+19**

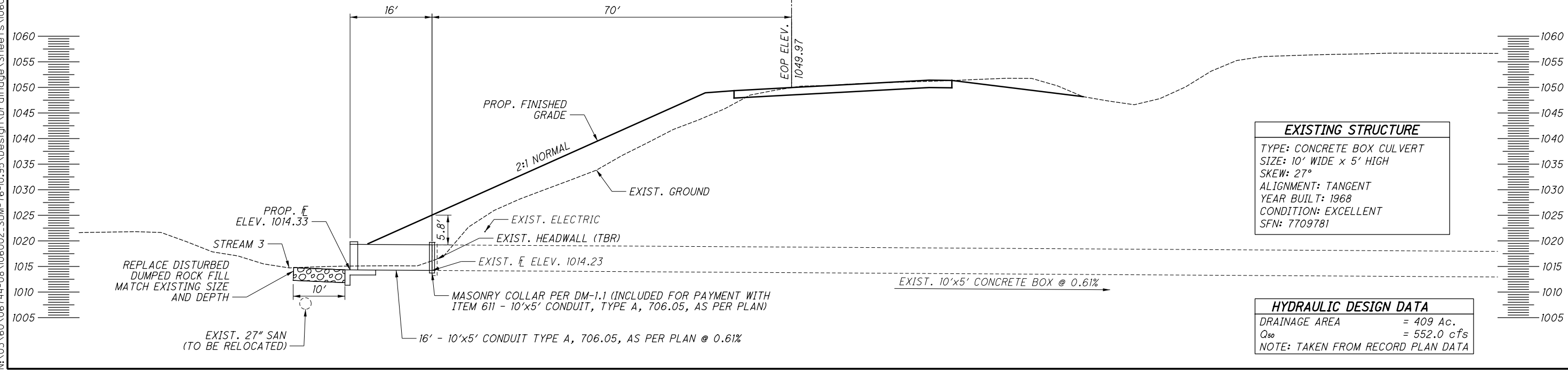
**SUM-77 / 277 / 224
VARIOUS**

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NOTES:
1. NO WORK IS PROPOSED FOR THE OUTLET SIDE OF THE EXISTING CULVERT.

2. THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 611 EXCEPT THAT THE NEW CULVERT SHALL BE CAST-IN-PLACE. PAYMENT WILL BE MADE AT THE UNIT BID PRICE FOR ITEM 611 - 10'x5' CONDUIT TYPE A, 706.05, AS PER PLAN.

SEE SHEET 911 FOR ESTIMATED QUANTITIES
SEE SHEETS 911 - 915 FOR HEADWALL DETAILS



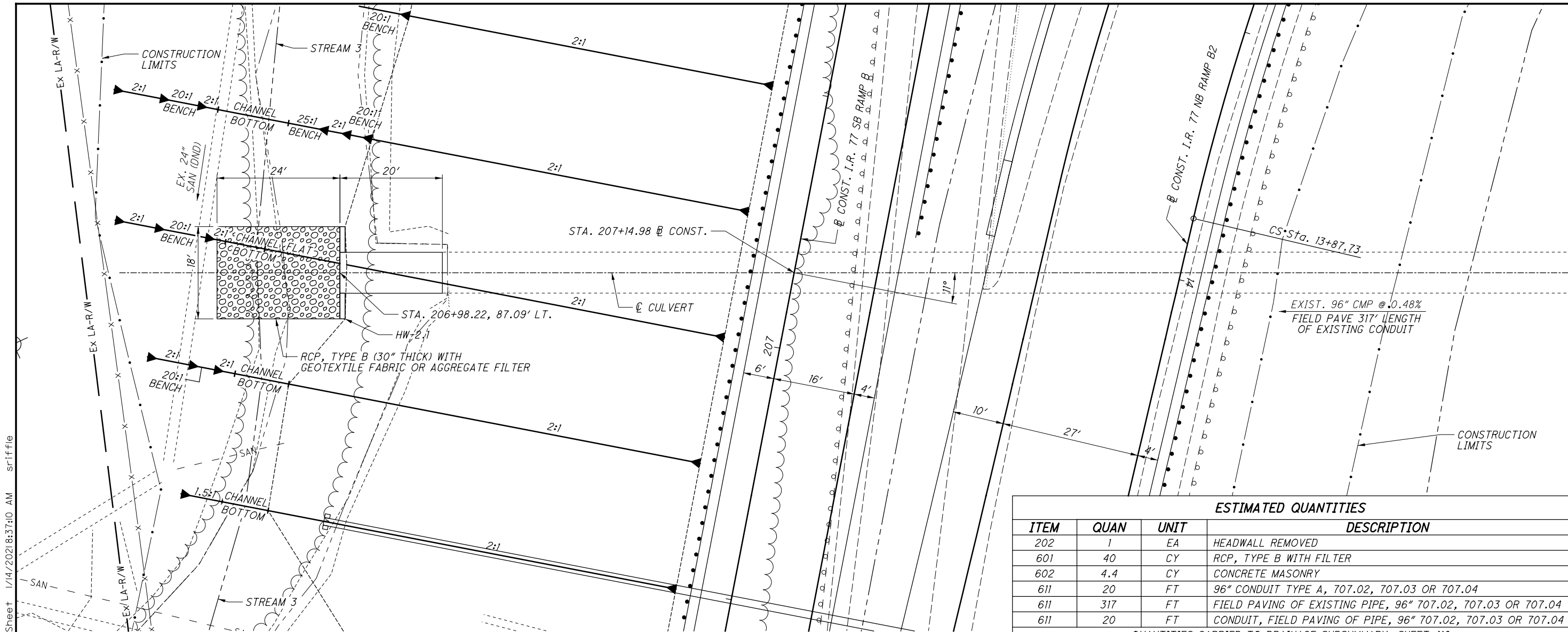
EXISTING STRUCTURE	
TYPE:	CONCRETE BOX CULVERT
SIZE:	10' WIDE x 5' HIGH
SKEW:	27°
ALIGNMENT:	TANGENT
YEAR BUILT:	1968
CONDITION:	EXCELLENT
SFN:	7709781

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 409 Ac.
Q ₅₀	= 552.0 cfs
NOTE: TAKEN FROM RECORD PLAN DATA	

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CALCULATED
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CHECKED
DLT

0 5 10 20
HORIZONTAL
SCALE IN FEET

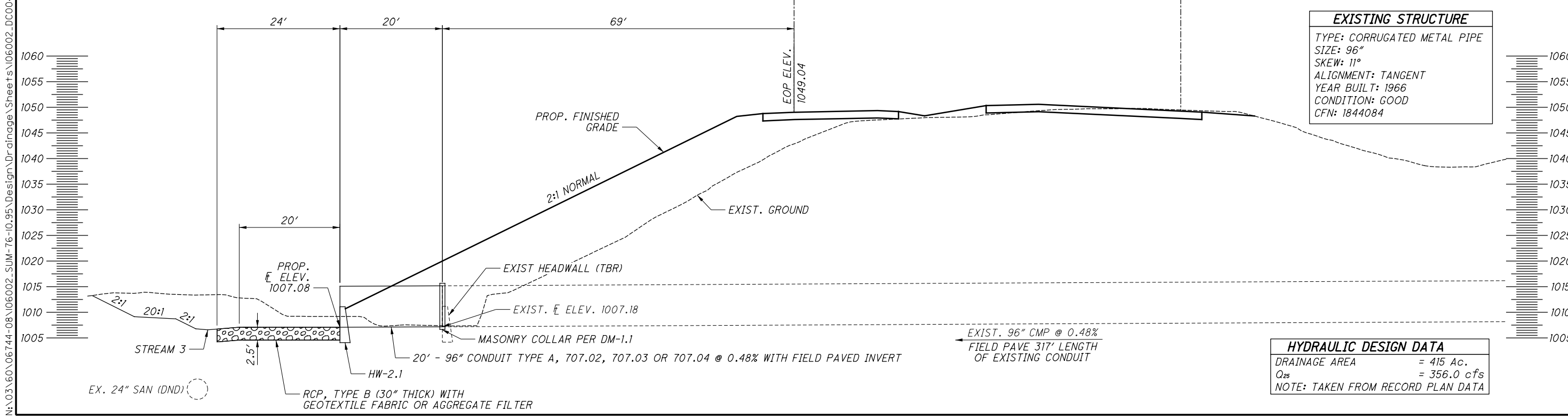


ESTIMATED QUANTITIES			
ITEM	QUAN	UNIT	DESCRIPTION
202	1	EA	HEADWALL REMOVED
601	40	CY	RCP, TYPE B WITH FILTER
602	4.4	CY	CONCRETE MASONRY
611	20	FT	96" CONDUIT TYPE A, 707.02, 707.03 OR 707.04
611	317	FT	FIELD PAVING OF EXISTING PIPE, 96" 707.02, 707.03 OR 707.04
611	20	FT	CONDUIT, FIELD PAVING OF PIPE, 96" 707.02, 707.03 OR 707.04

QUANTITIES CARRIED TO DRAINAGE SUBSUMMARY, SHEET 410

CULVERT DETAIL
RAMP B STA. 207+15

NOTES:
1. NO WORK IS PROPOSED FOR THE INLET SIDE OF THE EXISTING CULVERT.



SUM-77 / 277 / 224
VARIOUS

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HYDRAULIC DESIGN DATA

DRAINAGE AREA	= 6.25 ACRES
Q(25)	= 28.6 CFS
Q(100)	= 33.3 CFS

EXISTING STRUCTURE

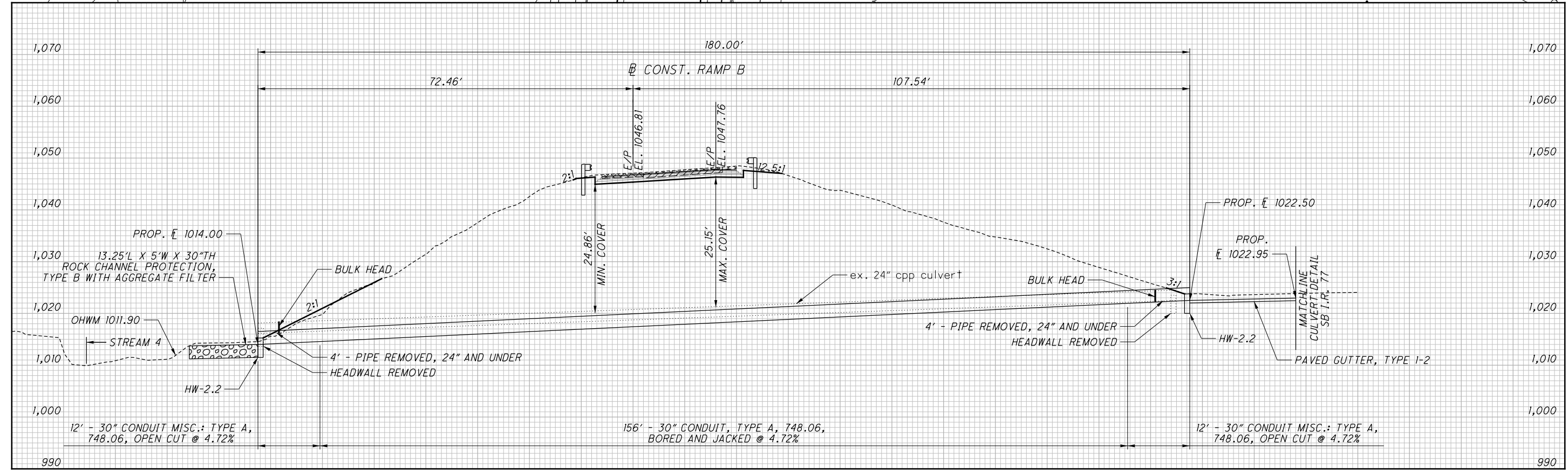
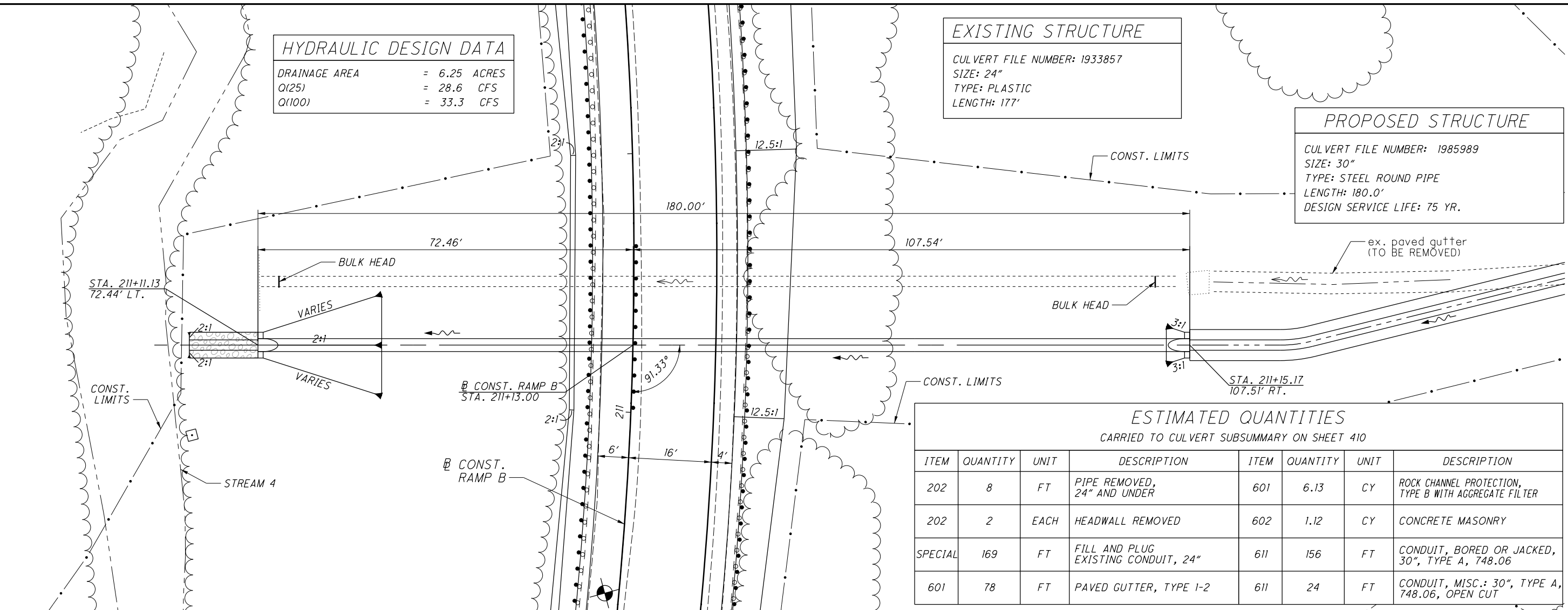
CULVERT FILE NUMBER:	1933857
SIZE:	24"
TYPE:	PLASTIC
LENGTH:	177'

PROPOSED STRUCTURE

CULVERT FILE NUMBER:	1985989
SIZE:	30"
TYPE:	STEEL ROUND PIPE
LENGTH:	180.0'
DESIGN SERVICE LIFE:	75 YR.

ESTIMATED QUANTITIES
CARRIED TO CULVERT SUBSUMMARY ON SHEET 410

ITEM	QUANTITY	UNIT	DESCRIPTION	ITEM	QUANTITY	UNIT	DESCRIPTION
202	8	FT	PIPE REMOVED, 24" AND UNDER	601	6.13	CY	ROCK CHANNEL PROTECTION, TYPE B WITH AGGREGATE FILTER
202	2	EACH	HEADWALL REMOVED	602	1.12	CY	CONCRETE MASONRY
SPECIAL	169	FT	FILL AND PLUG EXISTING CONDUIT, 24"	611	156	FT	CONDUIT, BORED OR JACKED, 30", TYPE A, 748.06
601	78	FT	PAVED GUTTER, TYPE 1-2	611	24	FT	CONDUIT, MISC.: 30", TYPE A, 748.06, OPEN CUT



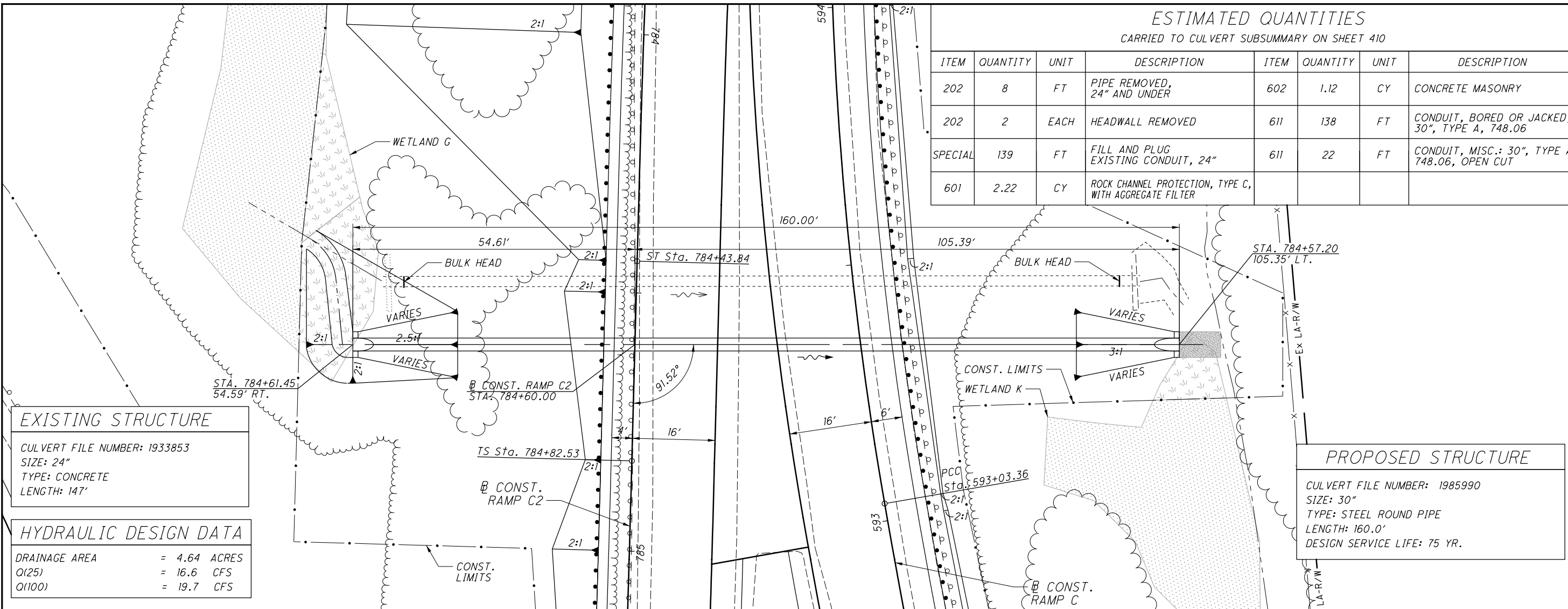
CULVERT DETAIL
RAMP B STA. 211+13.00

SUM-77 / 277 / 224
VARIOUS

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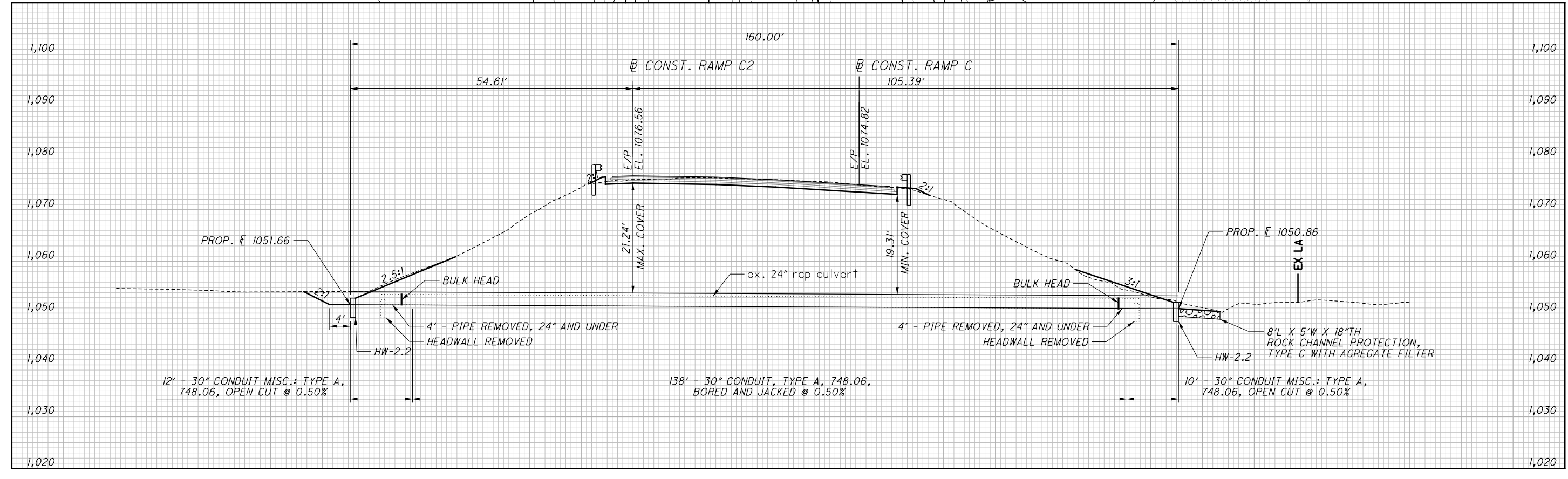
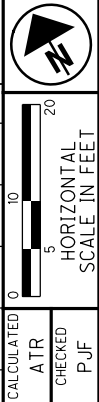
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EXISTING STRUCTURE	
CULVERT FILE NUMBER:	1933853
SIZE:	24"
TYPE:	CONCRETE
LENGTH:	147'

HYDRAULIC DESIGN DATA	
DRAINAGE AREA	= 4.64 ACRES
Q(25)	= 16.6 CFS
Q(100)	= 19.7 CFS

ESTIMATED QUANTITIES							
CARRIED TO CULVERT SUBSUMMARY ON SHEET 410							
ITEM	QUANTITY	UNIT	DESCRIPTION	ITEM	QUANTITY	UNIT	DESCRIPTION
202	8	FT	PIPE REMOVED, 24" AND UNDER	602	1.12	CY	CONCRETE MASONRY
202	2	EACH	HEADWALL REMOVED	611	138	FT	CONDUIT, BORED OR JACKED, 30", TYPE A, 748.06
SPECIAL	139	FT	FILL AND PLUG EXISTING CONDUIT, 24"	611	22	FT	CONDUIT, MISC.: 30", TYPE A, 748.06, OPEN CUT
601	2.22	CY	ROCK CHANNEL PROTECTION, TYPE C, WITH AGGREGATE FILTER				

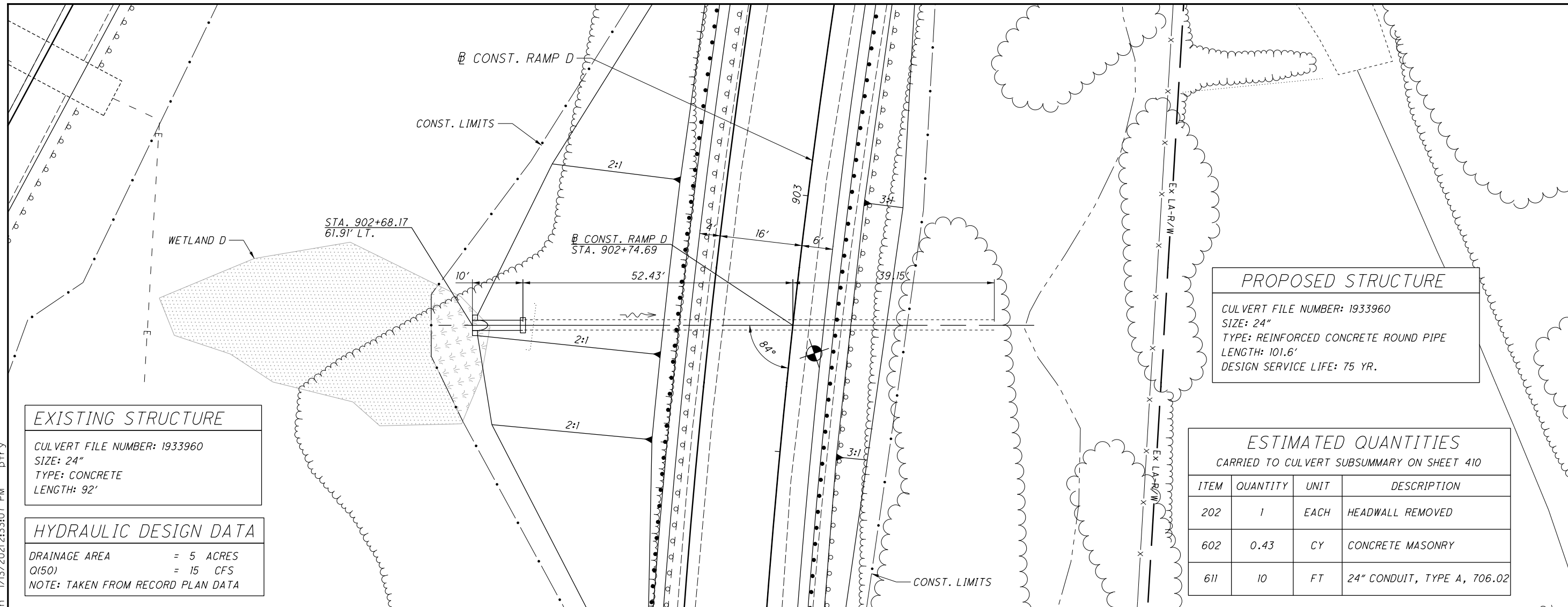


CALCULATED ATR CHECKED PJF
CULVERT DETAIL
RAMP C-2 STA. 784+60.00
SUM-77 / 277 / 224
VARIOUS
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CALCULATED
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HORIZONTAL SCALE IN FEET



EXISTING STRUCTURE

CULVERT FILE NUMBER: 1933960
 SIZE: 24"
 TYPE: CONCRETE
 LENGTH: 92'

HYDRAULIC DESIGN DATA

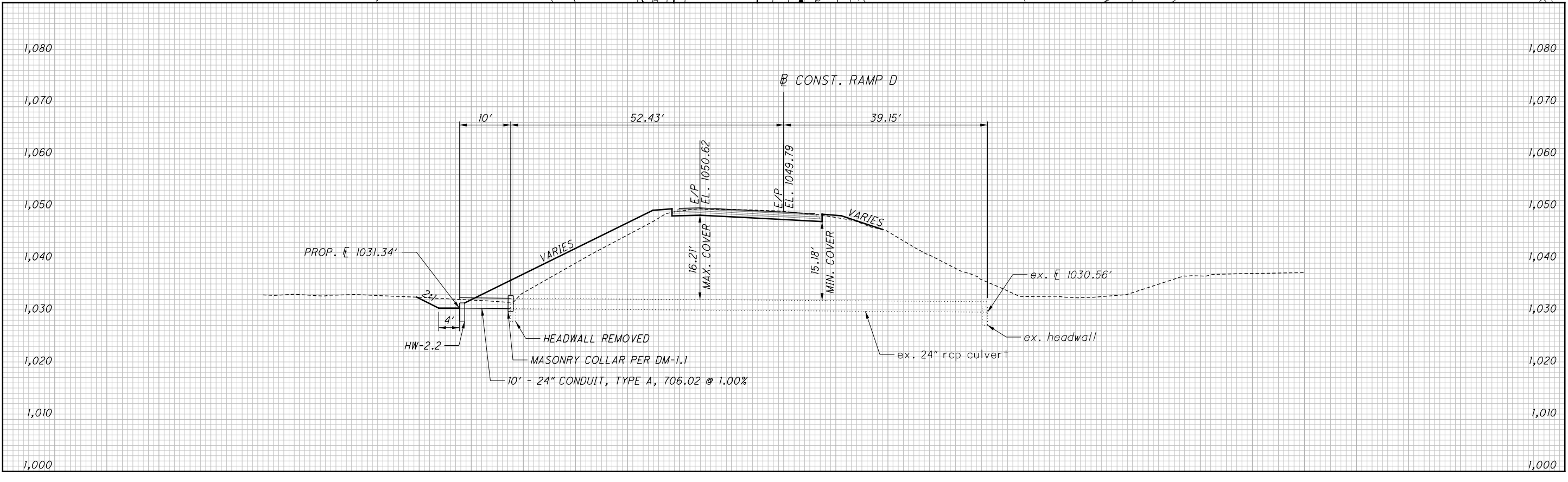
DRAINAGE AREA = 5 ACRES
 Q(50) = 15 CFS
 NOTE: TAKEN FROM RECORD PLAN DATA

PROPOSED STRUCTURE

CULVERT FILE NUMBER: 1933960
 SIZE: 24"
 TYPE: REINFORCED CONCRETE ROUND PIPE
 LENGTH: 101.6'
 DESIGN SERVICE LIFE: 75 YR.

ESTIMATED QUANTITIES
 CARRIED TO CULVERT SUBSUMMARY ON SHEET 410

ITEM	QUANTITY	UNIT	DESCRIPTION
202	1	EACH	HEADWALL REMOVED
602	0.43	CY	CONCRETE MASONRY
611	10	FT	24" CONDUIT, TYPE A, 706.02

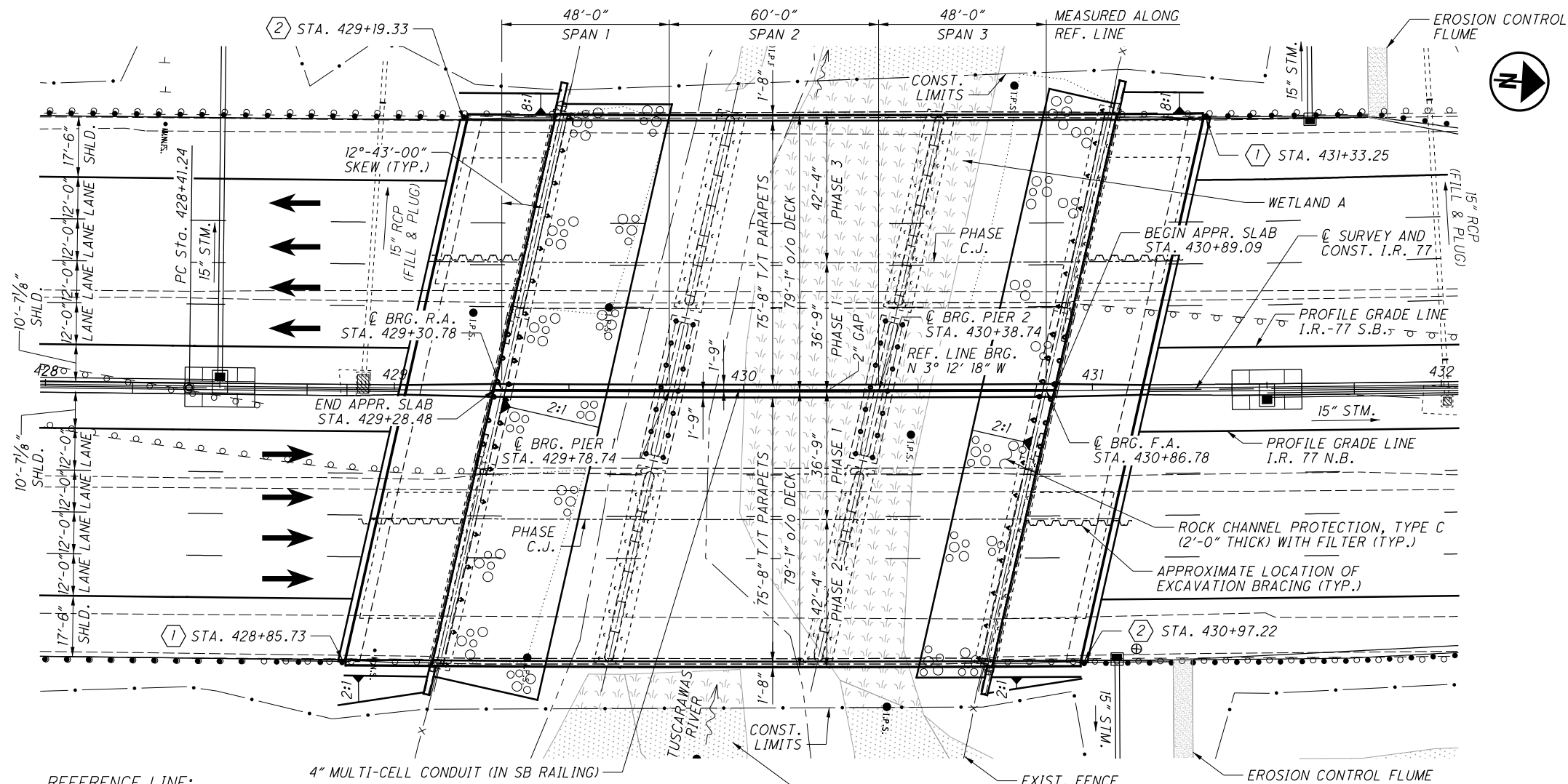


CULVERT DETAIL
RAMP D STA. 902+74.69

SUM-77 / 277 / 224
VARIOUS

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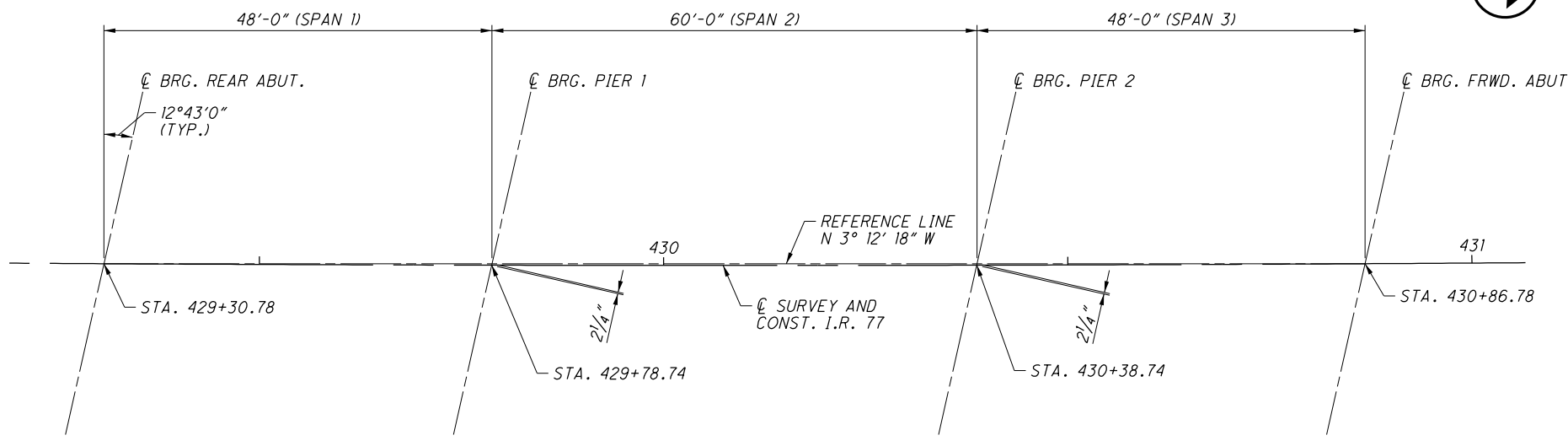


HORIZONTAL CURVE DATA:

P.I. STA. 438+34.18
 $\Delta = 7^\circ 59' 02''$ (LT)
 $D_c = 0^\circ 24' 10''$
 $R = 14,228.56'$
 $T = 992.94'$
 $L = 1982.67'$
 $E = 34.60'$
 $C = 1,981.07'$

REFERENCE LINE:
 THE REFERENCE LINE IS A LINE CONNECTING C BRGS. R.A. AND C BRGS. F.A. AT THE $\text{C SURVEY AND CONST. I.R. 77}$

PLAN
 WETLAND A (DO NOT DISTURB) (TYP.)
 EXIST. FENCE (TO REMAIN) (TYP.)
 EROSION CONTROL FLUME



GEOMETRY PLAN

LEGEND:

- WETLAND
- WETLAND AREA NOT TO BE DISTURBED
- MGS BRIDGE TERMINAL ASSEMBLY, TYPE 1 FIRST POST LOCATION (SEE STD. DWG. MGS-3.1)
- MGS BRIDGE TERMINAL ASSEMBLY, TYPE 2 FIRST POST LOCATION (SEE STD. DWG. MGS-3.2)

NOTES:

1. EARTHWORK LIMITS SHOWN ARE APPROXIMATE. ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS.
2. THE EXISTING AND PROPOSED BEAMS ARE PARALLEL TO THE REFERENCE LINE. SPAN LENGTHS AND SUBSTRUCTURE SKEWS ARE MEASURED TO THE REFERENCE LINE.
3. THE BRIDGE DECKS, CONSTRUCTION JOINTS, CROWNS, AND PROFILE GRADES ARE OFFSETS FROM THE $\text{C SURVEY AND CONST. I.R. 77}$.

 GPD GROUP 520 South Main Street, Akron, OH 44311 330.572.2100	DESIGN AGENCY DATE 1-19-21	STRUCTURE FILE NUMBER 7702558/7702582	GENERAL PLAN BRIDGE NO. SUM-77-0810 L/R I.R. 77 OVER THE TUSCARAWAS RIVER	SUM-77 / 277 / 224 VARIOUS PID No. 106002
DRAWN MOJ	REVIEWED DGN	CHECKED RHC		
				2 / 44 1182 1288