

# **SPECIAL PROVISIONS**

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## **WATERWAY PERMITS CONDITIONS**

**C-R-S: CUY-US 422-16.20**

**PID: 113889**

**Date: 11/22/2024**

### 1. Waterway Permits Time Restrictions:

Nationwide Permit 14 (Linear Transportation Projects) is authorized for CUY-US 422-16.20, PID 113889. A copy of Nationwide Permit 14 and the United States Army Corps of Engineers (USACE) authorization letter (USACE # LRH-2023-00244-CUY-Beaver Meadow Run) shall be kept at the work site at all times and made available to all contractors and subcontractors. The permit is effective starting: November 22, 2024. The permit expires: March 14, 2026.

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 with the Pre-Construction Notification were approved by the USACE in accordance with Nationwide Permit 14 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:

| Aquatic Resource Name /Description | Location | Work restriction dates (No in-stream work permitted) |
|------------------------------------|----------|------------------------------------------------------|
| N/A                                | N/A      | N/A                                                  |

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 Cuyahoga County Sheriff's Office at (216) 443-6000.

#### 6. Aquatic Resource Demarcation:

The attached table includes 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. 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.

11. Temporary Fill Activities:

Temporary fill in aquatic resources 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.

12. 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 has been attached to these Special Provisions.

13. 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 in aquatic resources 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.

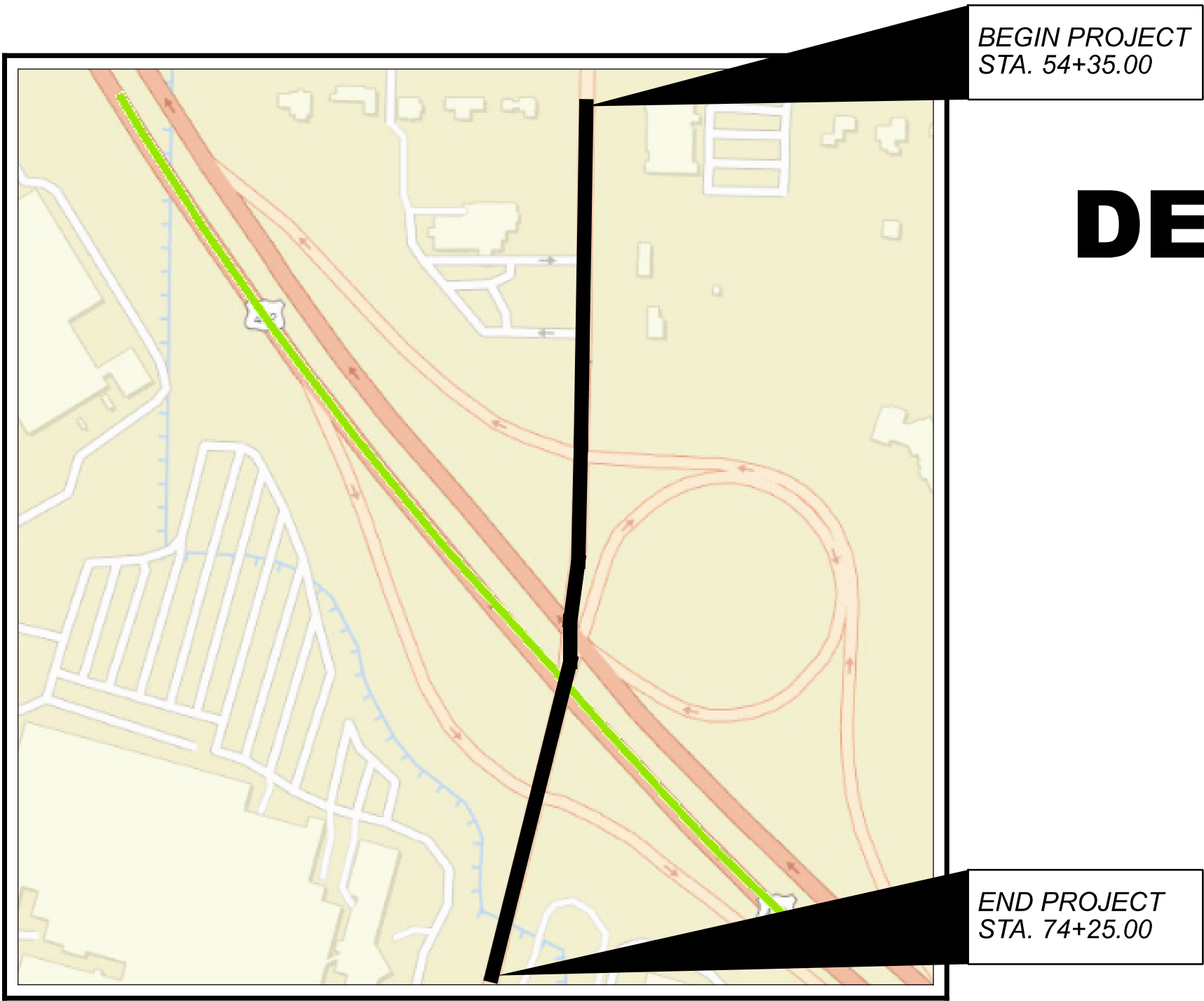
**TABLE 4. WETLAND DISCHARGE AND FILL QUANTITIES**

| Wetland   | Station                       | Description of Impacts                   | Acreage (AC) | Depth (LF) | Permanent Fill Within Wetland Boundary                              |             |                                                |             | Total Permanent Fill |             | Total Impact Acreage |
|-----------|-------------------------------|------------------------------------------|--------------|------------|---------------------------------------------------------------------|-------------|------------------------------------------------|-------------|----------------------|-------------|----------------------|
|           |                               |                                          |              |            | Proposed Concrete (Includes Culvert, Piers, Walls, Abutments, etc.) |             | Proposed Earthen, Granular, or Embankment Fill |             |                      |             |                      |
|           |                               |                                          |              |            | Area (AC)                                                           | Volume (CY) | Area (AC)                                      | Volume (CY) | Area (AC)            | Volume (CY) | Area (AC)            |
| Wetland 3 | Ramp 1A:<br>STA 445+50-446+50 | Stormwater Management System and Grading | 0.055        | 1          | 0.003                                                               | 5           | 0.047                                          | 76          | 0.05                 | 81          | 0.05                 |
| Wetland 6 | Ramp 4A:<br>STA 850+00-855+00 | Stormwater Management System and Grading | 0.234        | 1          | 0.019                                                               | 30          | 0.131                                          | 211         | 0.15                 | 241         | 0.15                 |
| SUM:      |                               |                                          |              |            | 0.022                                                               | 35          | 0.178                                          | 287         | 0.200                | 322         | 0.200                |

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

CUY-422-16.20 (HARPER ROAD)

MODEL: Sheet PAPER:SIZE: 34x22 (in.) DATE: 12/1/2022 TIME: 7:38:19 PM USER: bblinsley  
O:\Clients\ORD\2020\2020336\113889\400-Engineering\Roadway\Sheets\113889\_GT001.dgn



LOCATION MAP

LATITUDE: 41°24'22.04" LONGITUDE: 81°28'0.74"



|                         |       |
|-------------------------|-------|
| PORTION TO BE IMPROVED  | ----- |
| INTERSTATE HIGHWAY      | ===== |
| FEDERAL ROUTES          | ===== |
| STATE ROUTES            | ===== |
| COUNTY & TOWNSHIP ROADS | ===== |

DESIGN DESIGNATION

|                                   |                            |
|-----------------------------------|----------------------------|
|                                   | HARPER ROAD (CR-18)        |
| CURRENT YEAR ADT (2024)           | 28,950                     |
| DESIGN YEAR ADT (2044)            | 31,760                     |
| DESIGN HOURLY VOLUME (2044)       | 3,740                      |
| DIRECTIONAL DISTRIBUTION          | 73%                        |
| TRUCKS (24 HOUR B & C)            | 12%                        |
| TD                                | 4%                         |
| DESIGN SPEED                      | 35 MPH                     |
| LEGAL SPEED                       | 35 MPH                     |
| DESIGN FUNCTIONAL CLASSIFICATION: | 05 MAJOR COLLECTOR (URBAN) |
| NHS PROJECT                       | NO                         |

DESIGN EXCEPTIONS

NONE REQUIRED

UNDERGROUND UTILITIES

Contact Two Working Days  
Before You Dig

OHIO811.org  
Before You Dig

OHIO811, 8-1-1, or 1-800-362-2764  
(Non members must be called directly)

PLAN PREPARED BY:



|                  |                  |
|------------------|------------------|
| ENGINEER'S SEAL: | ENGINEER'S SEAL: |
| SIGNED: _____    | SIGNED: _____    |
| DATE: _____      | DATE: _____      |

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

CUY-422-16.20

(HARPER ROAD)

CITY OF SOLON

CUYAHOGA COUNTY

STAGE 3

DECEMBER 2, 2022

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| STANDARD CONSTRUCTION DRAWINGS |         |         |         |          |          |           |          |          |          | SUPPLEMENTAL SPECIFICATIONS | SPECIAL PROVISIONS |
|--------------------------------|---------|---------|---------|----------|----------|-----------|----------|----------|----------|-----------------------------|--------------------|
| BP-3.1                         | 1/21/22 | MGS-1.1 | 7/16/21 | HW-2.1   | 7/20/18  | MT-101.60 | 1/17/20  | TC-41.40 | 10/18/13 | 800-2019 SEE PROPOSAL       | USACE RGP          |
| BP-4.1                         | 7/19/13 | MGS-2.1 | 1/19/18 | HW-2.2   | 7/20/18  | MT-101.70 | 1/17/20  | TC-41.50 | 10/18/13 |                             |                    |
| BP-5.1                         | 7/15/22 | MGS-3.1 | 1/19/18 |          |          | MT-101.75 | 1/17/20  | TC-42.10 | 10/18/13 | 804 10/21/22                | USACE 404 NP 58    |
| BP-7.1                         | 1/21/22 | MGS-4.2 | 7/19/13 | HL-10.11 | 7/15/22  | MT-101.90 | 7/17/20  | TC-42.20 | 10/18/13 | 809 10/21/22                |                    |
| BP-9.1                         | 1/18/19 | MGS-4.3 | 1/18/13 | HL-10.12 | 1/20/17  | MT-102.10 | 1/17/20  | TC-51.11 | 1/15/16  | 813 10/19/18                | FLOOD HAZ DEV      |
|                                |         | MGS-5.2 | 7/15/16 | HL-10.13 | 4/17/20  | MT-102.20 | 4/19/19  | TC-51.12 | 1/15/16  | 816 10/18/19                | 10/7/22            |
| CB-4                           | 7/16/21 | MGS-5.3 | 7/15/16 | HL-20.11 | 10/21/22 | MT-105.10 | 1/17/20  | TC-52.10 | 10/18/13 | 821 4/20/12                 | WATERWAY           |
| CB-5                           | 7/16/21 |         |         | HL-30.11 | 1/15/21  | MT-110.10 | 7/19/13  | TC-52.20 | 1/15/21  | 825 1/17/20                 |                    |
| CB-6                           | 1/21/22 | MH-1    | 7/15/22 | HL-30.21 | 4/17/20  |           |          | TC-61.10 | 1/17/20  | 832 7/15/22                 |                    |
|                                |         | MH-3    | 7/16/21 | HL-30.22 | 1/15/21  | TC-9.31   | 7/16/21  | TC-65.10 | 1/17/14  | 836 1/19/18                 |                    |
| DM-1.1                         | 7/17/20 |         |         | HL-40.20 | 7/15/22  | TC-15.116 | 7/16/21  | TC-65.11 | 7/15/22  | 904 7/15/22                 |                    |
| DM-1.2                         | 7/16/21 | RM-1.1  | 1/15/21 | HL-60.11 | 7/21/17  | TC-16.22  | 7/16/21  | TC-71.10 | 7/15/22  | 907 10/18/19                |                    |
| DM-2.1                         | 1/18/13 | RM-3.1  | 7/20/18 | HL-60.31 | 1/17/20  | TC-21.11  | 7/16/21  | TC-74.10 | 1/21/22  | 909 10/21/22                |                    |
| DM-4.2                         | 7/20/12 | RM-4.2  | 4/17/20 |          |          | TC-21.21  | 7/15/22  | TC-81.22 | 7/15/22  | 913 4/16/21                 |                    |
| DM-4.3                         | 1/15/16 | RM-4.3  | 1/21/22 | MT-95.31 | 7/19/19  | TC-22.10  | 4/17/20  | TC-83.10 | 1/17/20  | 916 7/15/22                 |                    |
| DM-4.4                         | 1/15/16 | RM-4.4  | 7/19/19 | MT-95.32 | 4/19/19  | TC-22.20  | 1/17/14  | TC-83.20 | 7/15/22  | 921 4/20/12                 |                    |
|                                |         | RM-4.5  | 7/21/17 | MT-95.45 | 1/17/20  | TC-41.10  | 7/19/13  | TC-85.10 | 10/21/22 |                             |                    |
| F-1.1                          | 7/19/13 | RM-4.6  | 7/19/13 | MT-98.29 | 1/17/20  | TC-41.20  | 10/18/13 | TC-85.20 | 7/20/18  |                             |                    |
| F-3.3                          | 7/19/13 | RM-5.2  | 1/18/19 | MT-99.20 | 4/19/19  | TC-41.30  | 10/18/13 |          |          |                             |                    |

FEDERAL PROJECT NUMBER

NON-FEDERAL

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

PROJECT CONSISTS OF THE RECONFIGURATION OF THE U.S. 422 / HARPER ROAD INTERCHANGE TO A DIVERGING DIAMOND INTERCHANGE. PROJECT ELIMINATES THE EXISTING NORTHBOUND TO WESTBOUND LOOP RAMP AND LENGTHENS THE EXISTING TURN LANES ON THE U.S. 422 WESTBOUND EXIT RAMP. PROJECT ALSO INCLUDES TRAFFIC SIGNAL, LIGHTING AND DRAINAGE IMPROVEMENTS.

EARTH DISTURBED AREAS

|                                            |             |
|--------------------------------------------|-------------|
| PROJECT EARTH DISTURBED AREA:              | 13.18 ACRES |
| ESTIMATED CONTRACTOR EARTH DISTURBED AREA: | 1.00 ACRES  |
| NOTICE OF INTENT EARTH DISTURBED AREA:     | 14.18 ACRES |

LIMITED ACCESS

THIS IMPROVEMENT IS ESPECIALLY DESIGNED FOR THROUGH TRAFFIC AND HAS BEEN DECLARED A LIMITED ACCESS HIGHWAY OR FREEWAY BY ACTION OF THE DIRECTOR IN ACCORDANCE WITH THE PROVISIONS OF SECTION 5511.02 OF THE OHIO REVISED CODE.

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY EXCEPT FOR HARPER RD. AND THE U.S. 422 RAMPS AS DESCRIBED ON SHEETS 39 -44 AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ CITY ENGINEER, SOLON OHIO

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ DISTRICT DEPUTY DIRECTOR

APPROVED \_\_\_\_\_  
DATE \_\_\_\_\_ DIRECTOR, DEPARTMENT OF TRANSPORTATION

TITLE SHEET

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

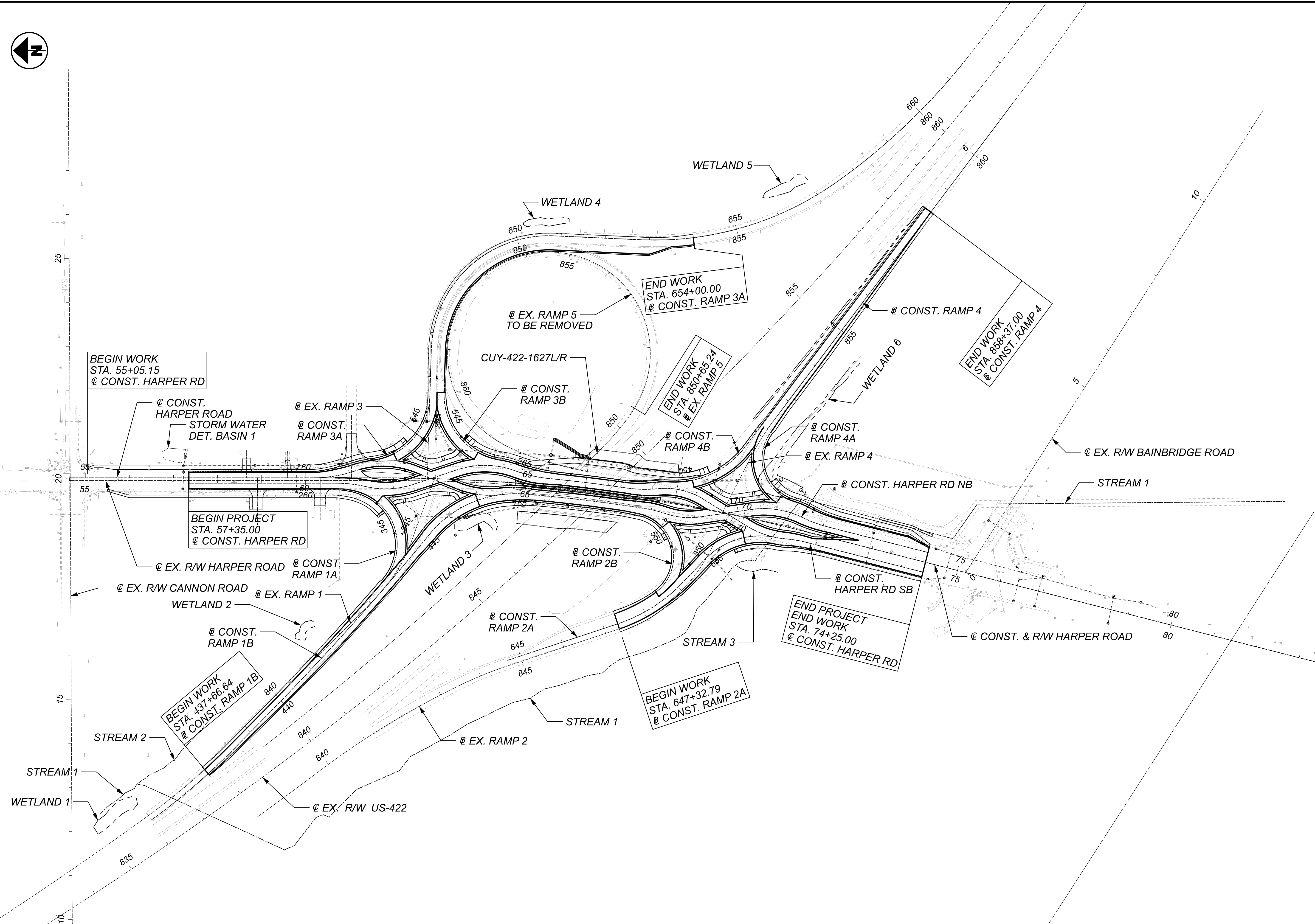
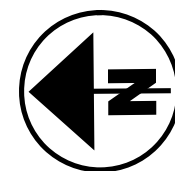
113889

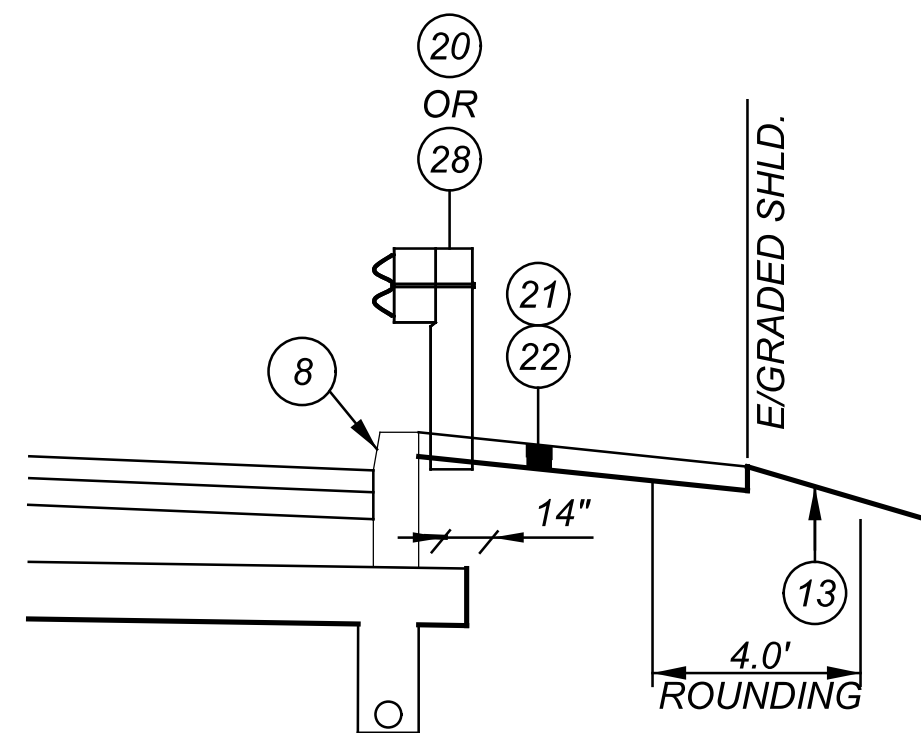
SHEET

TOTAL

1

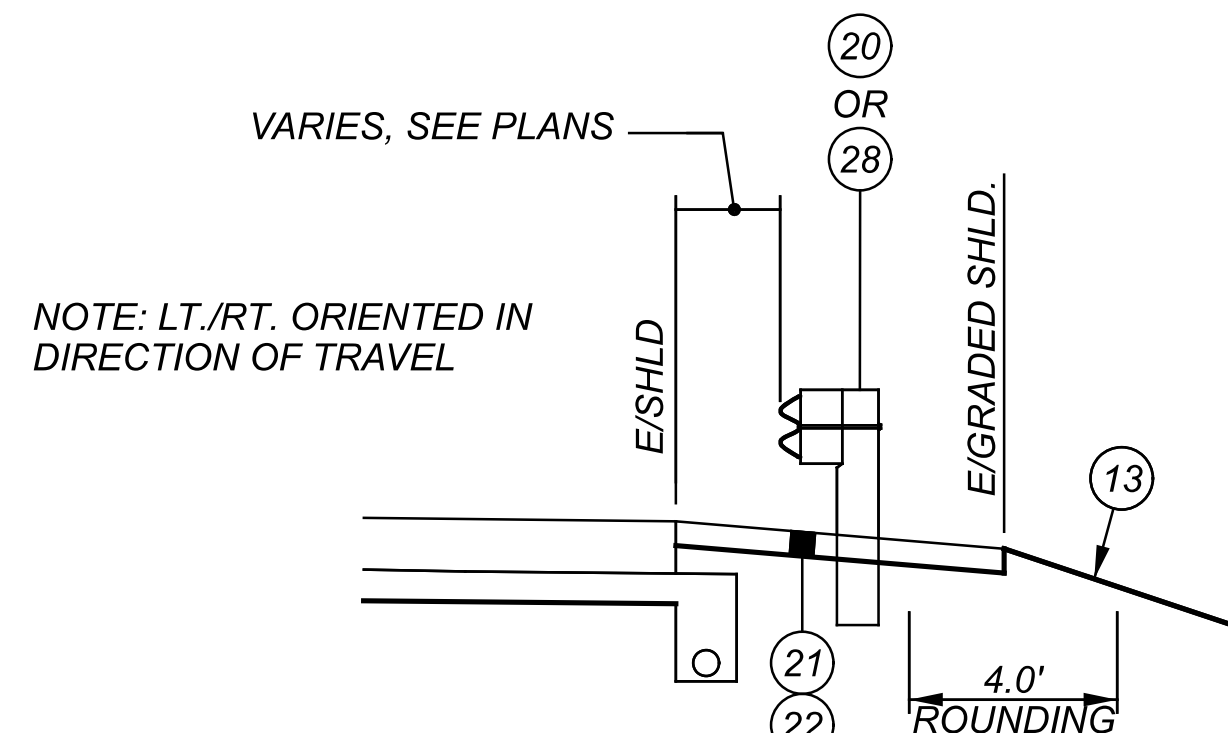
488





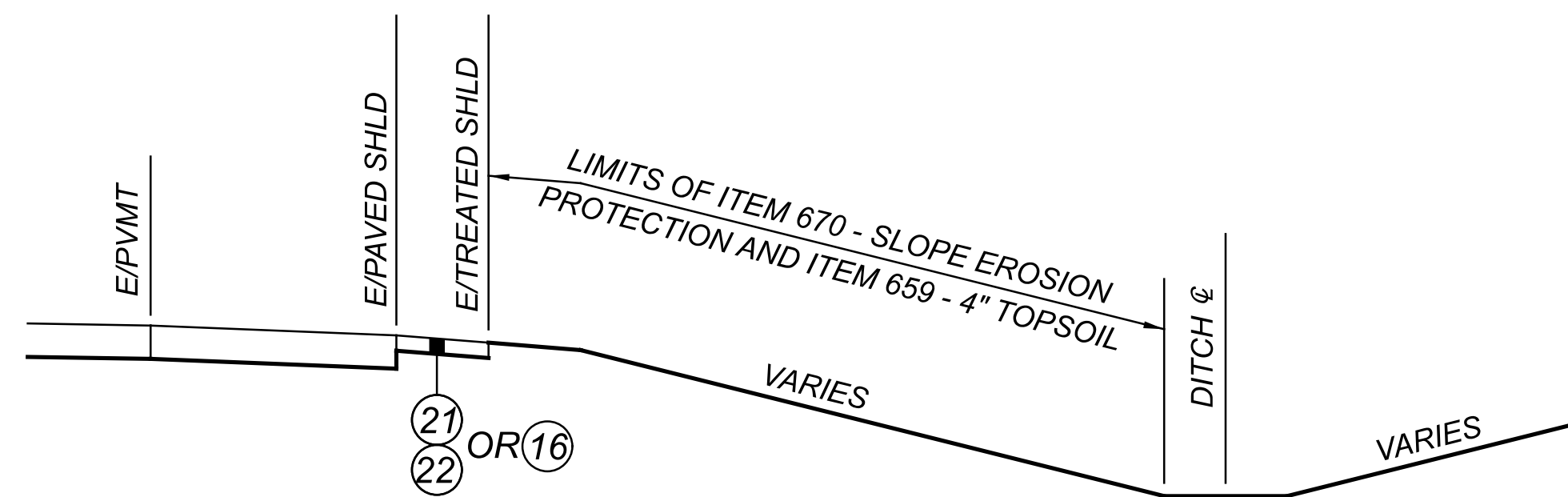
CURBED ROADWAY  
GUARDRAIL INSTALLATION DETAIL

SEE PLANS FOR LOCATIONS

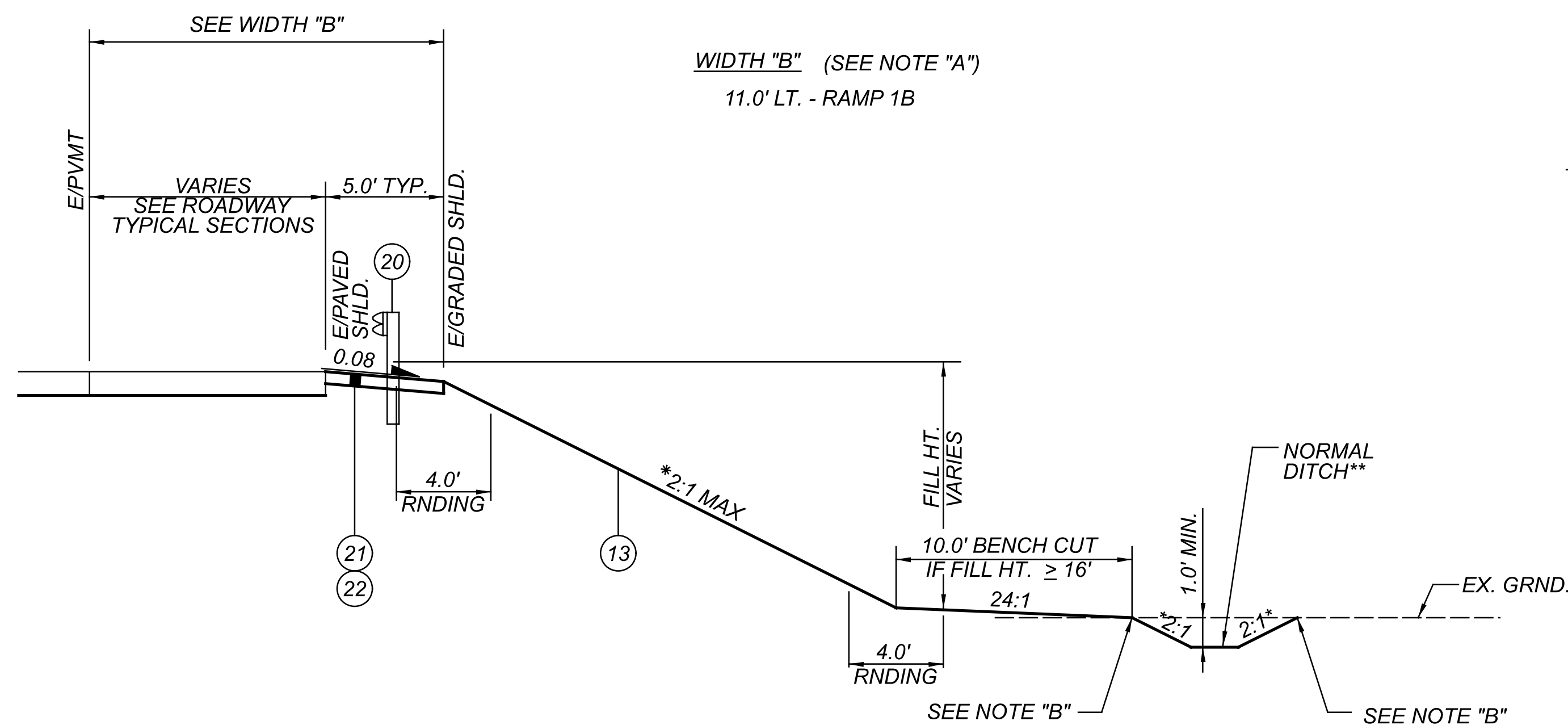


UNCURBED ROADWAY  
GUARDRAIL INSTALLATION DETAIL

SEE PLANS FOR LOCATIONS



VEGETATED FILTER STRIPS DETAIL  
FOR LOCATIONS, SEE PROJECT SITE PLANS ON SHEET 187

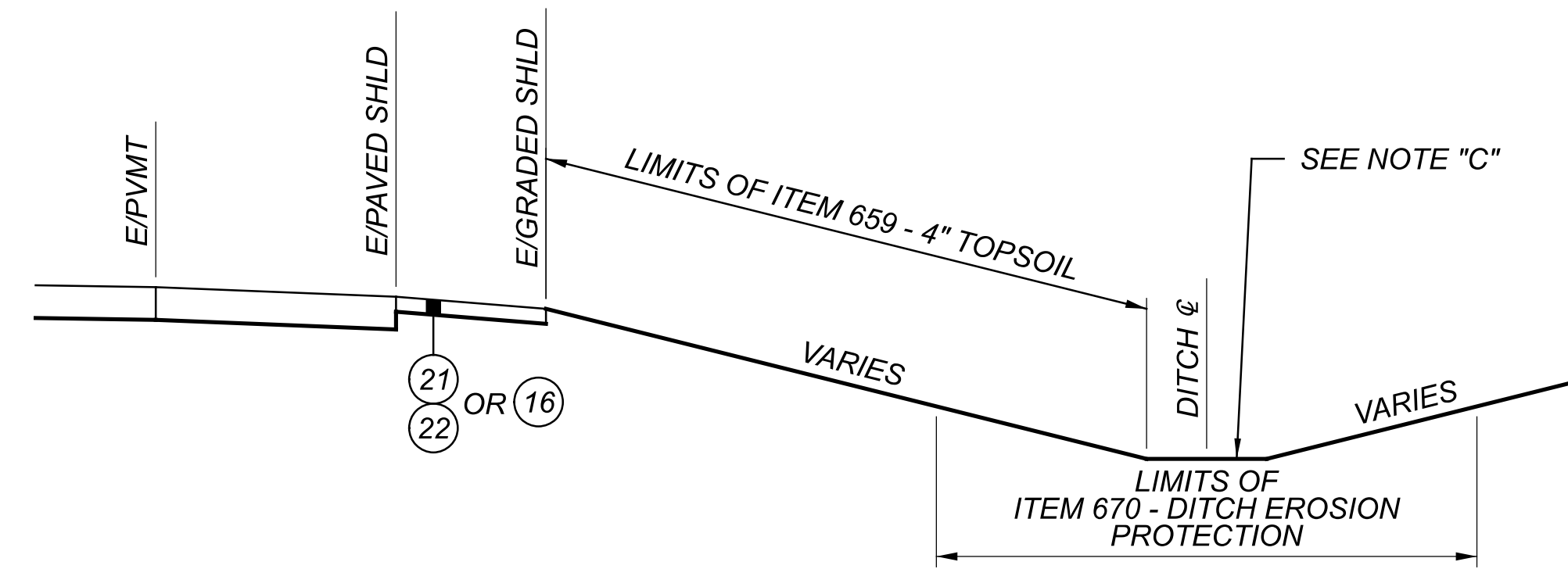


FILL SECTION - CASE 1 (BARRIER GRADING)

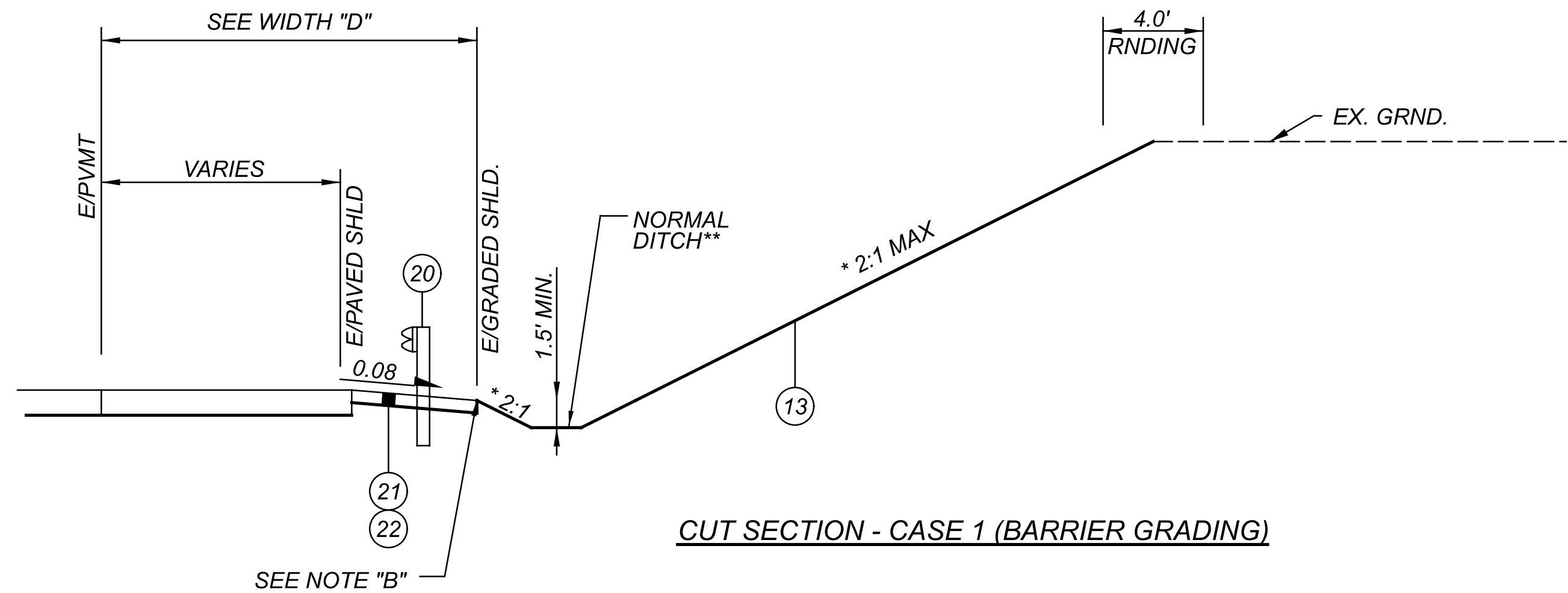
NOTE "A"  
ALL DIMENSIONS ARE DEFINED LOOKING IN  
DIRECTION OF TRAVEL

NOTE "B"  
4.0' ROUNDING

NOTE "C"  
ALL DITCHES LOCATED WITHIN LIMITS OF VBF  
SHALL BE TRAPEZOIDAL AND NOT HAVE ROUNDING



VEGETATED BIOFILTER DETAIL  
FOR LOCATIONS, SEE PROJECT SITE PLANS ON SHEETS 187



CUT SECTION - CASE 1 (BARRIER GRADING)

WIDTH "D" (SEE NOTE "A")  
11.0' LT. - RAMP 1B  
11.0' RT. - RAMP 2A

\*\* SEE NORMAL DITCH DETAIL ON THIS SHEET.  
\* OR AS SHOWN ON CROSS SECTIONS

FOR PROPOSED LEGEND, SEE SHEET 11

GENERAL

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

AT&T - OHIO  
13630 LORAIN AVE.  
2ND FLOOR  
CLEVELAND, OH 44111  
ATTN: JAMES JANIS  
PHONE: 216-476-6142  
EMAIL: pj8191@att.com

BUCKEYE PIPELINE  
5002 BUCKEYE RD.  
EMMAUS, PA 18049  
ATTN: DONALD SAMALA  
OFFICE: 484-232-4303  
ATTN: BILL SERRA  
OFFICE: 412-264-7432

CITY OF CLEVELAND (DIVISION OF WATER)  
1201 LAKESIDE AVE.  
CLEVELAND, OH 44114  
ATTN: FRED ROBERTS  
PHONE: 216-664-2444 EXT. 75590  
EMERGENCY: 216-664-3060  
INSPECTION: 216-664-2342  
EMAIL: fred\_roberts@ClevelandWater.com

CITY OF SOLON (ENGINEERING DEPT.)  
34200 BAINBRIDGE RD.  
SOLON, OH 44139  
ATTN: MATTHEW J. HARTZELL  
PHONE: 440-349-6745  
EMAIL: mhartzell@solonohio.org

CHARTER COMM. (SPECTRUM/TIME WARNER)  
7 SEVERANCE CIRCLE  
CLEVELAND HEIGHTS, OH 44118  
ATTN: PAT SANTOITEMMO  
PHONE: 216-575-8016, EXT. 2165554202  
EMAIL: Pat.Santoitemmo@charter.com  
ATTN: JOSH CURTIS  
PHONE: 440-343-2146  
EMAIL: Joshua.curtis@charter.com

DOMINION ENERGY OHIO  
320 SPRINGSIDE DRIVE, SUITE 320  
AKRON, OH 44333  
ATTN: DOUGLAS REIBEL  
PHONE: 330-664-2409  
EMAIL: douglas.h.reibel@dominionenergy.com  
relocation@dominionenergy.com

CEI FIRST ENERGY (ILLUMINATING CO.)  
6896 MILLER RD.  
BRECKSVILLE, OH 44141  
ATTN: JOHN M. ZASSICK  
OFFICE: 440-546-8706  
EMAIL: jmzassick@firstenergycorp.com  
ATTN: MATT HESS  
OFFICE: 440-387-6232  
EMAIL: mhess@firstenergycorp.com

VERIZON (MCI)  
12300 RIDGE RD.  
NORTH ROYALTON, OH 44133  
ATTN: DAN ARZ  
OFFICE: 440-457-4832  
EMAIL: daniel.arz@verizon.com

ODOT DISTRICT 12  
5500 TRANSPORTATION BLVD  
GARFIELD HEIGHTS, OH 44125  
ATTN: CURTIS WILLS  
OFFICE: 216-584-2109  
EMAIL: curtis.wills@dot.ohio.gov  
ATTN: KEITH HAMILTON  
OFFICE: 216-584-2106  
EMAIL: keith.hamilton@dot.ohio.gov  
ATTN: DAVID NIMRICHTER  
OFFICE: 216-584-2106  
EMAIL: david.nimrichter@dot.ohio.gov

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLY TO ALL CROSS SECTIONS, EVEN THOUGH OTHERWISE SHOWN.

SURVEY PARAMETERS

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET \_8\_ OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PROJECT CONTROL

POSITIONING METHOD: ODOT VRS  
MONUMENT TYPE: 5/8" x 30" REBAR WITH RED "GPD" CAP

VERTICAL POSITIONING

ORTHOMETRIC HEIGHT DATUM: NAVD88  
GEOID: 12B

HORIZONTAL POSITIONING

REFERENCE FRAME: NAD83(2011)  
ELLIPSOID: GRS80  
MAP PROJECTION: LAMBERT CONFORMAL CONIC  
COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE, 3401  
COMBINED SCALE FACTOR: 1.000088925  
METHOD OF OBTAINING SCALE FACTOR: TRIMBLE BUSINESS CENTER  
ORIGIN OF COORDINATE SYSTEM: 0,0

USE THE POSITIONING METHODS AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

PROTECTION OF RIGHT-OF-WAY LANDSCAPING

PRIOR TO BEGINNING WORK, THE CONTRACTOR, THE PROJECT ENGINEER, AND A REPRESENTATIVE OF THE MAINTAINING AGENCY WILL REVIEW AND RECORD ALL LANDSCAPING ITEMS WITHIN THE RIGHT-OF-WAY (BOTH WITHIN AND OUTSIDE THE CONSTRUCTION LIMITS). A RECORD OF THIS REVIEW WILL BE KEPT IN THE PROJECT ENGINEER'S FILES. PRIOR TO FINAL ACCEPTANCE, A FINAL REVIEW OF LANDSCAPING ITEMS WILL BE MADE.

CONSTRUCT ALL ACTIVITIES, EQUIPMENT STORAGE, AND STAGING TO WITHIN THE CONSTRUCTION LIMITS. UNLESS OTHERWISE IDENTIFIED IN THE PLANS OR PROPOSAL, THE CONSTRUCTION LIMITS ARE IDENTIFIED AS 30 FEET FROM THE EDGE OF PAVEMENT.

SUBMIT A WRITTEN REQUEST TO THE PROJECT ENGINEER TO USE ANY AREA OUTSIDE THESE LIMITS. THE DOCUMENT SUBMITTED MUST CLEARLY IDENTIFY THE AREA AND EXPLAIN THE PROPOSED USE AND RESTORATION OF THE AREA. USE OF THESE AREAS FOR DISPOSAL OF WASTE MATERIAL AND CONSTRUCTION DEBRIS, EXCAVATION OF BORROW MATERIAL AND PLACEMENT OF PORTABLE PLANTS IS PROHIBITED. THE REQUEST MUST BE APPROVED, IN WRITING, BEFORE THE CONTRACTOR HAS PERMISSION TO USE THE AREA.

ANY ITEMS DAMAGED BEYOND THE CONSTRUCTION LIMITS, AS DEFINED ABOVE, WILL BE REPLACED IN KIND OR AS APPROVED BY THE PROJECT ENGINEER AT THE COST OF THE CONTRACTOR.

ITEM 623 - CONSTRUCTION LAYOUT STAKES AND SURVEYING, AS PER PLAN

AFTER COMPLETION OF ALL WORK, BUT PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, AN OHIO PROFESSIONAL SURVEYOR SHALL DETERMINE THE MINIMUM VERTICAL CLEARANCES OF ALL EXISTING AND NEW BRIDGES WITHIN THE PROJECT LIMITS. AT A MINIMUM, MEASUREMENTS SHALL TAKEN ALONG EACH FASCIA BEAM AT THE EDGE OF SHOULDERS, EDGE LINES, LANE LINES, AND CROWN OF THE ROADWAY BELOW. THE ODOT DISTRICT 12 VERTICAL CLEARANCE SURVEY FORM SHALL BE USED, WHERE APPLICABLE, TO DOCUMENT THE MEASUREMENTS. WHERE THE ODOT DISTRICT 12 VERTICAL CLEARANCE SURVEY FORM IS NOT APPLICABLE, THE MEASUREMENTS SHALL BE DOCUMENTED ON A CONTRACTOR-DEVELOPED FORM THAT CLOSELY RESEMBLES THE ODOT DISTRICT 12 VERTICAL CLEARANCE SURVEY FORM AND ACCURATELY DEPICTS THE BRIDGE AND BELOW LANE AND SHOULDER CONFIGURATION. THE COMPLETED FORM SHALL BEAR THE STAMP OR SEAL OF THE OHIO PROFESSIONAL SURVEYOR WHO HAS TAKEN THE MEASUREMENTS AND SHALL BE SUBMITTED TO THE PROJECT ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

THE ODOT DISTRICT 12 VERTICAL CLEARANCE SURVEY FORM CAN BE DOWNLOADED FROM THE FOLLOWING FTP SITE:

ftp://ftp.dot.state.oh.us/pub/Contracts/Attach/CUY-113889

ITEM 623 - MONUMENT ASSEMBLY, TYPE C, AS PER PLAN

THIS ITEM SHALL CONFORM TO ITEM 623 AND THE CITY OF SOLON STANDARD CONSTRUCTION DRAWING MONUMENT ASSEMBLY (P-9) AS SHOWN ON SHEET 360.

CLEARING AND GRUBBING

REMOVE ALL TREES AND STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE CONSTRUCTION LIMITS UNDER THE LUMP SUM BID FOR ITEM 201, CLEARING AND GRUBBING. THE FOLLOWING IS AN APPROXIMATE ESTIMATE OF THE NUMBER OF TREES AND STUMPS TO BE REMOVED.

| SIZES | NO. TREES | NO. STUMPS | TOTAL |
|-------|-----------|------------|-------|
| 18"   | 8         |            | 8     |
| 30"   | 2         |            | 2     |
| 48"   |           |            |       |
| 60"   |           |            |       |

ITEM SPECIAL - SURVEY CONTROL VERIFICATION

THE CONTRACTOR SHALL PERFORM THIS WORK TO VERIFY THE PROVIDED SURVEY CONTROL. THE CONTRACTOR WILL PERFORM THE VERIFICATION USING ONE OF THE TWO METHODS BELOW DEPENDENT UPON THE CONTRACTOR'S CHOSEN MEANS OF SURVEY CONTROL TO BE USED ON THE PROJECT. THE WORK SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF AN OHIO LICENSED SURVEYOR.

- IF USING GPS DEVICES TO ESTABLISH AND OR PROVIDE SUPPLEMENTAL HORIZONTAL AND VERTICAL SURVEY CONTROL
  - LOCATE VERTICAL CONTROL POINTS PROVIDED IN THE PLANS AND PERFORM A DIFFERENTIAL LEVEL CIRCUIT.
  - PERFORM A SITE CALIBRATION UTILIZING THE AVAILABLE HORIZONTAL AND VERTICAL CONTROL POINTS PROVIDED IN THE PLAN.
  - PROVIDE A REPORT, SIGNED BY AN OHIO LICENSED SURVEYOR, TO THE PROJECT ENGINEER COMPARING THE OBSERVED DATA TO THE PLAN DATA ALONG WITH A NARRATIVE DETAILING ANY DISCREPANCIES FOUND.
- IF USING CONVENTIONAL SURVEY INSTRUMENTATION TO ESTABLISH AND OR PROVIDE SUPPLEMENTAL HORIZONTAL AND VERTICAL SURVEY CONTROL
  - LOCATE VERTICAL CONTROL POINTS PROVIDED IN THE PLANS AND PERFORM A DIFFERENTIAL LEVEL CIRCUIT.
  - LOCATE AND OBSERVE ANGLE AND DISTANCE TO ALL AVAILABLE HORIZONTAL CONTROL POINTS PROVIDE IN THE PLAN.
  - PROVIDE A REPORT, SIGNED BY AN OHIO LICENSED SURVEYOR, TO THE PROJECT ENGINEER COMPARING THE OBSERVED DATA TO THE PLAN DATA ALONG WITH A NARRATIVE DETAILING ANY DISCREPANCIES FOUND.

ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED IN THE LUMP SUM BID ITEM.

FENCE LENGTHS

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607.

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

113889

SHEET

21

TOTAL

488

QUANTITIES CARRIED TO GENERAL  
NOTES SUBSUMMARY ON SHEET 26

ROADWAY

ITEM 606 - GUARDRAIL, TYPE MGS, AS PER PLAN

THIS ITEM SHALL CONSIST OF LOCATING THE ADJACENT ELECTRICAL LINE BEFORE THE INSTALLATION OF THE GUARDRAIL POSTS. HAND DIG POSTS IF NECESSARY TO AVOID EXISTING ELECTRICAL LINE.

PAVING UNDER GUARDRAIL

THIS OPERATION SHALL INCLUDE PREPARATION OF THE GRADED SHOULDER USING ITEM 209, LINEAR GRADING, AS PER PLAN AND PAVING UNDER THE GUARDRAIL USING 441 ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449), UNDER GUARDRAIL, AS PER PLAN.

ITEM 209, LINEAR GRADING, AS PER PLAN SHALL CONSIST OF EXCAVATING TOPSOIL, AND PLACING GRANULAR MATERIAL.

ALL COLLECTED DEBRIS AND TOPSOIL, INCLUDING RHIZOMES, ROOTS AND OTHER VEGETATIVE PLANT MATERIAL SHALL BE REMOVED AND DISPOSED OF AS SPECIFIED IN 105.17.

THE REMOVED MATERIAL SHALL BE REPLACED WITH COMPACTABLE GRANULAR MATERIAL CONFORMING TO 703.16 PLACED TO GRADE AS DETAILED ON THE TYPICAL SECTION OR AS APPROVED BY THE ENGINEER.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 209, LINEAR GRADING, AS PER PLAN.

PAVING UNDER GUARDRAIL SHALL CONSIST OF PLACING ITEM 441 TO THE DEPTH SPECIFIED USING ONE OF THE FOLLOWING METHODS:

METHOD A:

- 1. SET GUARDRAIL POSTS
- 2. PLACE ITEM 441

METHOD B:

- 1. PLACE ITEM 441
- 2. BORE ASPHALT AT POST LOCATIONS (MAY BE OMITTED IF STEEL POSTS ARE USED)
- 3. SET GUARDRAIL POSTS
- 4. PATCH AROUND POSTS. THE MATERIALS USED FOR PATCHING SHALL BE AN ASPHALT CONCRETE APPROVED BY THE ENGINEER. PATCHED AREAS SHALL BE COMPACTED USING EITHER HAND OR MECHANICAL METHODS. FINISHED SURFACES SHALL BE SMOOTH AND SLOPED TO DRAIN AWAY FROM THE POSTS.

ALL EQUIPMENT, MATERIALS AND LABOR REQUIRED TO PERFORM THE WORK OUTLINED ABOVE, WITH THE EXCEPTION OF SETTING GUARDRAIL POSTS, SHALL BE INCLUDED FOR PAYMENT UNDER ITEM 441, ASPHALT CONCRETE, INTERMEDIATE COURSE, TYPE 1, (449), (UNDER GUARDRAIL), AS PER PLAN

ITEM 607 - FENCE, MISC.: WOOD FENCE

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A WOODEN BIKE RAIL PER ODOT STANDARD DRAWING RM-5.2 AT THE LOCATIONS SHOWN IN THE PLANS. ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR FABRICATION, DELIVERY, AND INSTALLATION OF THE RAILING SHALL BE INCLUDED IN THE UNIT BID FOR ITEM 607 - FENCE, MISC.: WOOD FENCE.

THE CONTRACTOR SHOULD BE AWARE OF ALL EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED FENCE TO BE INSTALLED AND SHOULD TAKE ANY NECESSARY PRECAUTIONS TO AVOID DISTUPTING THEM. POST DEPTH AND SPACING MAY BE ADJUSTED IN THE FIELD AS DIRECTED BY THE ENGINEER IN ORDER TO AVOID ANY EXISTING UTILITIES.

ITEM 203 - ROADWAY, MISC.: PRE-CONSTRUCTION VIDEO

THE CONTRACTOR SHALL SUBMIT A DVD OR OTHER APPROVED FORMAT RECORDING OF THE CONSTRUCTION LIMITS TO THE CITY OF SOLON PRIOR TO ANY WORK. THE RECORDING SHALL TAKE SPECIAL NOTE OF ALL SURFACE FEATURES, INCLUDING BUT NOT LIMITED TO: DRIVEWAYS, TREES, FENCES, LANDSCAPING FEATURES, AND PLANTERS. THE RECORDING WILL BE USED TO ASSIST THE ENGINEER IN THE CASE THAT PROPERTY OWNERS CLAIM DAMAGE HAS BEEN DONE TO THEIR PROPERTY BY THE CONTRACTOR DURING CONSTRUCTION. AREAS THAT HAVE BEEN DAMAGED DUE TO CONTRACTOR NEGLIGENCE SHALL BE RESTORED TO IT'S ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY OR THE PROPERTY OWNER.

SUBGRADE STABILIZATION

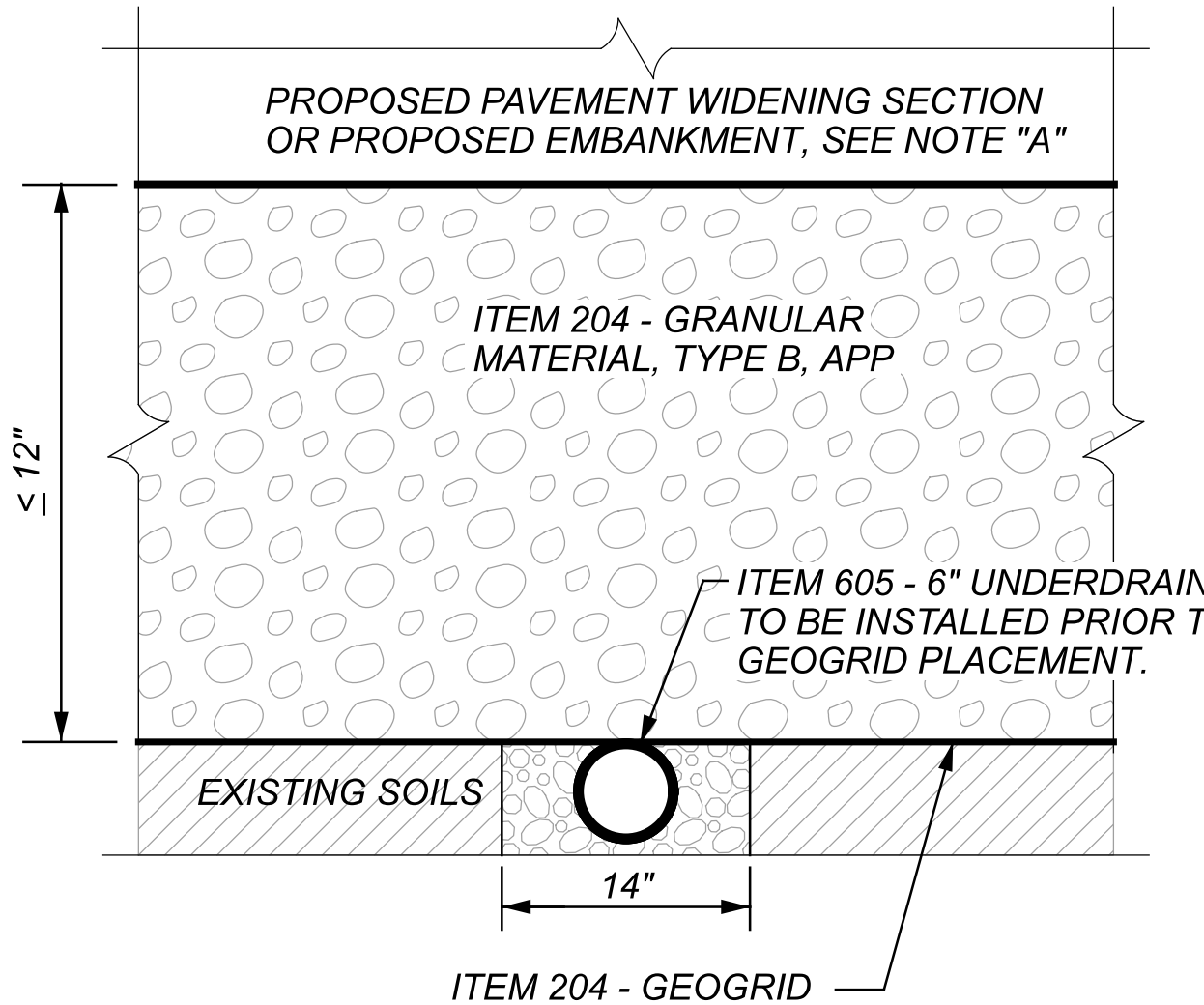
ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN

THE GEOTECHNICAL INVESTIGATION REVEALED AREAS OUTSIDE OF EXISTING PAVEMENT THAT MAYBE UNSTABLE. FOR ESTIMATION PURPOSES THE PLANS INCLUDE UNDERCUT AND REPLACEMENT OUTSIDE OF EXISTING PAVEMENT .

THIS INVOLVES THE PLACEMENT OF GRANULAR MATERIAL, TYPE B, AS PER PLAN FOR THE LOCATIONS OF UNSUITABLE MATERIALS AS VERIFIED AND DELINEATED BY THE ENGINEER. GRANULATED SLAG (GS) SHALL NOT BE PERMITTED FOR THIS ITEM. ALL OTHER REQUIREMENTS OF SECTIONS 204 AND 703.16.C OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL BE APPLICABLE FOR GRANULAR MATERIAL, TYPE B, AS PER PLAN.

ITEM 204 - GEOGRID

IN AREAS BUILT VIA PART-WIDTH CONSTRUCTION, THE GEOGRID SHALL OVERLAP AS PER CMS 204.07.B.

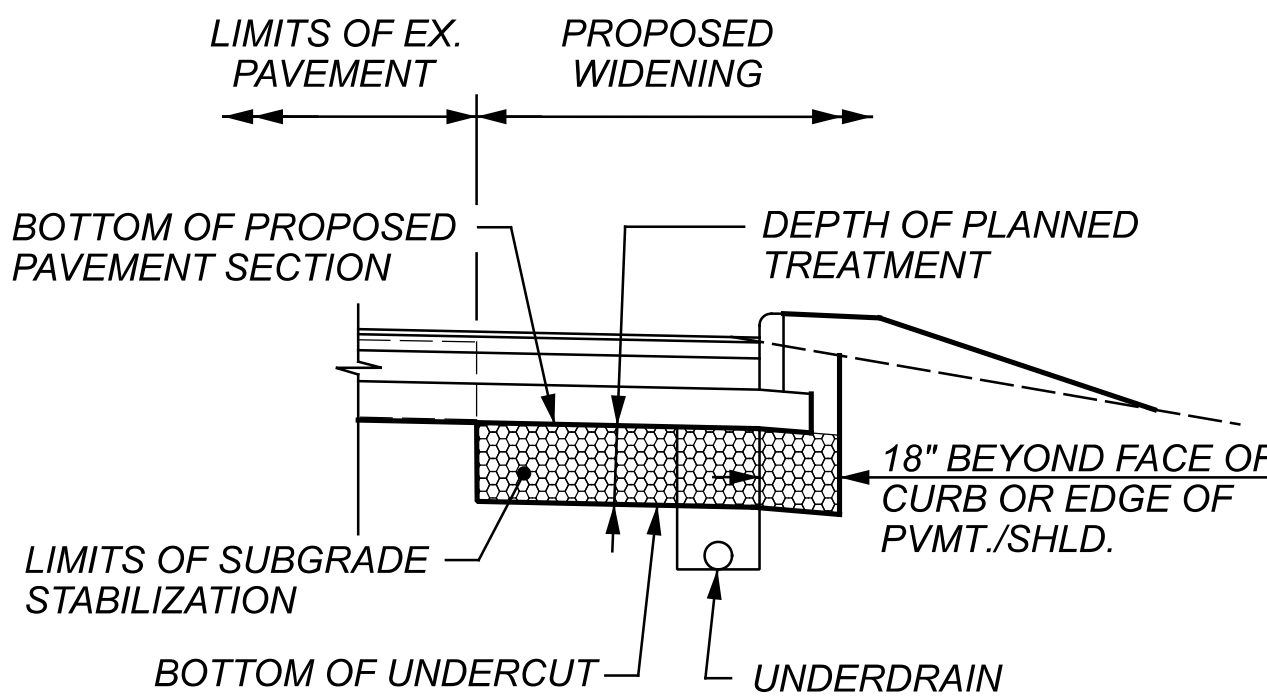


NOTE "A":

BASED ON GEOTECHNICAL SUBSURFACE INVESTIGATION, UNDERCUT AND REPLACEMENT IS PROPOSED IN THE AREAS OF PROPOSED WIDENING/OUTSIDE THE LIMITS OF EXISTING PAVEMENT ONLY.

DETAIL - UNDERCUT/ REPLACEMENT TREATMENT METHOD

NOT TO SCALE



TYPICAL PAVEMENT SUBGRADE CROSS SECTION

| PAVEMENT SUBGRADE IMPROVEMENT SCHEDULE |                              |             |                 |                    |       |                 |
|----------------------------------------|------------------------------|-------------|-----------------|--------------------|-------|-----------------|
| ALIGNMENT                              | BEGIN STATION                | END STATION | SUBGRADE METHOD | DEPTH OF TREATMENT | SIDE  | UNDERCUT REASON |
| HARPER RD                              | AREA OF WIDENING - SEE PLANS |             | UNDERCUT        | 12"                | LT/RT | UNSTABLE        |
| RAMP 1A                                | AREA OF WIDENING - SEE PLANS |             | UNDERCUT        | 12"                | LT/RT | UNSTABLE        |
| RAMP 1B                                | AREA OF WIDENING - SEE PLANS |             | UNDERCUT        | 12"                | LT/RT | UNSTABLE        |
| RAMP 2B                                | AREA OF WIDENING - SEE PLANS |             | UNDERCUT        | 12"                | LT/RT | UNSTABLE        |
| RAMP 3A                                | AREA OF WIDENING - SEE PLANS |             | UNDERCUT        | 12"                | LT/RT | UNSTABLE        |
| RAMP 3B                                | AREA OF WIDENING - SEE PLANS |             | UNDERCUT        | 12"                | LT/RT | UNSTABLE        |
| RAMP 4A                                | AREA OF WIDENING - SEE PLANS |             | UNDERCUT        | 12"                | LT/RT | UNSTABLE        |
| RAMP 4B                                | AREA OF WIDENING - SEE PLANS |             | UNDERCUT        | 12"                | LT/RT | UNSTABLE        |

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.

2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO SECTION 204.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS). IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.

3. COMPACT THE SUBGRADE ACCORDING TO C&MS 204.03.

4. APPROXIMATE LIMITS FOR EXCAVATION OF UNSTABLE SUBGRADE ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSTABLE SUBGRADE. THE ENGINEER WILL IDENTIFY THE ACTUAL LIMITS OF EXCAVATION FOR UNSTABLE SUBGRADE BASED ON THE PROOF ROLLING RESULTS AND VISUAL OBSERVATIONS. PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO C&MS 204.06.

5. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO C&MS 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.

6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO C&MS 204.06 TO VERIFY STABILITY.

7. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE.

THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204, EXCAVATION OF SUBGRADE.

ITEM 606 - IMPACT ATTENUATOR, TYPE 2, (BIDIRECTIONAL), (35 MPH, 24" WIDTH)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE TYPE 2 IMPACT ATTENUATORS AS LISTED ON THE OFFICE OF ROADWAY ENGINEERING'S WEB PAGE (REFER TO THE POSTED SHOP DRAWINGS FOR THE MOST CURRENT APPROVED PRODUCT MODELS). WHEN BI-DIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

TYPE 2 IMPACT ATTENUATORS ARE NECESSARY AT THE FOLLOWING LOCATIONS:

- 1. SB HARPER RD AT MEDIAN BARRIER
- 2. NB HARPER RD AT MEDIAN BARRIER

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, IMPACT ATTENUATOR, TYPE 2 (35 MPH, 24" WIDTH), (BIDIRECTIONAL), EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT, AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS/BACKSTOPS, TRANSITIONS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

ITEM 608 - 6" CONCRETE WALK, AS PER PLAN

ITEM 608 - 8" CONCRETE WALK, AS PER PLAN

ALL REQUIREMENTS OF SECTION 608 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL APPLY WITH THE FOLLOWING MODIFICATION: CONCRETE SHALL BE QC MS WITHIN THE DRIVE LIMITS AS SHOWN IN THE DETAIL ON SHEET 356

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE B

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND, THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

THE FACE OF THE TYPE B IMPACT HEAD SHALL BE COVERED WITH TYPE G REFLECTIVE SHEETING, PER CMS 730.193.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE B, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING REFLECTIVE SHEETING AND ALL RELATED HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

ITEM 606 - ANCHOR ASSEMBLY, MGS TYPE E (MASH 2016)

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING ANY OF THE GUARDRAIL END TERMINALS FOR TYPE MGS GUARDRAIL AS LISTED ON ROADWAY ENGINEERING'S WEB PAGE UNDER ROADSIDE SAFETY DEVICES FOR APPROVED GUARDRAIL END TREATMENTS. INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS, IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE FACE OF THE TYPE E IMPACT HEAD SHALL BE COVERED WITH A SHEET OF TYPE G REFLECTIVE SHEETING, PER CMS 730.193.

REFER TO THE MANUFACTURER'S INSTRUCTIONS REGARDING THE INSTALLATION OF, AND THE GRADING AROUND THE FOUNDATION TUBES AND GROUND STRUT. THE TOP OF ANY FOUNDATION TUBE SHOULD BE LESS THAN 4 INCHES ABOVE THE GROUND. THE PLACEMENT OF THE FOUNDATION TUBES SHOULD BE AN APPROPRIATE DEPTH BELOW THE LEVEL LINE IN ORDER TO MAINTAIN THE FINISHED GUARDRAIL HEIGHT OF 31 INCHES FROM THE EDGE OF THE SHOULDER.

ON-SITE GRADING IS REQUIRED IF THE TOP OF THE FOUNDATION TUBES OR TOP OF THE GROUND STRUT DOES PROJECT MORE THAN 4 INCHES ABOVE THE GROUND LINE.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID FOR ITEM 606, ANCHOR ASSEMBLY, MGS TYPE E, EACH, AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT A COMPLETE AND FUNCTIONAL ANCHOR ASSEMBLY SYSTEM, INCLUDING ALL RELATED TRANSITIONS, REFLECTIVE SHEETING, HARDWARE, GRADING, EMBANKMENT AND EXCAVATION NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

QUANTITIES CARRIED TO GENERAL  
NOTES SUBSUMMARY ON SHEET 26

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

113889

SHEET

22

TOTAL

488

PAVEMENT

ITEM 304 - AGGREGATE BASE, AS PER PLAN

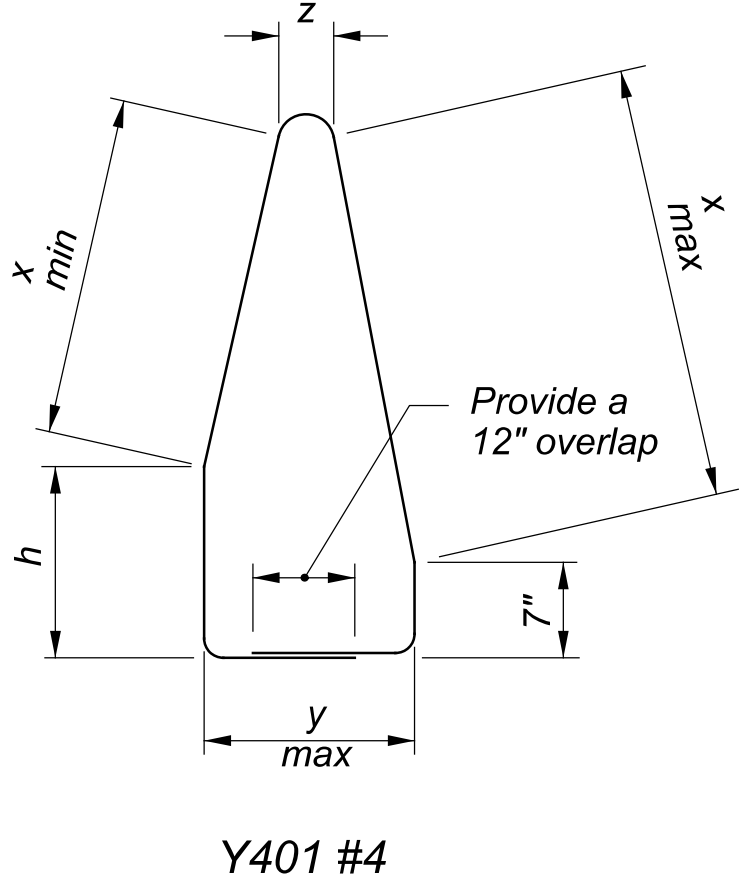
THIS ITEM SHALL CONFORM TO ITEM 304 WITH THE EXCEPTION THAT THE AGGREGATE SHALL BE LIMESTONE AND MEET THE GRADATION REQUIREMENTS FOR #57 AND #8. NO RECYCLED MATERIALS WILL BE PERMITTED.

ITEM 609 - 6" CONCRETE TRAFFIC ISLAND, AS PER PLAN

THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 609 WITH THE ADDITION OF 1" THICK CMS 705.03 PREFORMED FILLER AT THE INTERFACE OF THE EXISTING BRIDGE PIERS AND ITEM 609 - 6" CONCRETE TRAFFIC ISLAND, AS PER PLAN.

ITEM 622 - CONCRETE BARRIER, END ANCHORAGE, REIENFORCED, TYPE C1

| CUY-422 END ANCHORAGES |                  |               |               |
|------------------------|------------------|---------------|---------------|
| STATION                | LENGTH<br>(FEET) | "h"<br>(INCH) | "y"<br>(INCH) |
| 268+12.47              | 15.00            | 29.37         | 33.94         |
| 268+27.47              |                  | 29.42         | 33.95         |



DRAINAGE

ROTATE MANHOLE COVERS

THE CONTRACTOR SHALL ROTATE/ORIENT THE MANHOLE RISER SO THAT THE COVER IS IN THE SHOULDER AT THE FOLLOWING STRUCTURES:

D-18 AND D-63

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEM.

ITEM SPECIAL - MISCELLANEOUS METAL

EXISTING CASTINGS MAY PROVE TO BE UNSUITABLE FOR REUSE, AS DETERMINED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE CASTINGS OF THE REQUIRED TYPE, SIZE AND STRENGTH (HEAVY OR LIGHT DUTY) FOR THE PARTICULAR STRUCTURE IN QUESTION. FURNISH MATERIALS PER ITEM 611 WITH PRIOR APPROVAL OF THE ENGINEER.

THE FOLLOWING ESTIMATED QUANTITY HAS BEEN PROVIDED FOR USE AS DIRECTED BY THE ENGINEER.

SPECIAL, MISCELLANEOUS METAL 500 POUNDS

REPLACE CASTINGS DAMAGED BY THE CONTRACTOR NEGLIGENCE, AS DETERMINED BY THE ENGINEER, AT THE EXPENSE OF THE CONTRACTOR.

REVIEW OF DRAINAGE FACILITIES

PRIOR TO THE START OF WORK AND AGAIN BEFORE FINAL ACCEPTANCE, PERFORM AN INSPECTION WITH REPRESENTATIVES OF THE STATE, CONTRACTOR, AND LOCAL REPRESENTATIVES OF ALL EXISTING DRAINAGE FACILITIES THAT ARE TO REMAIN IN SERVICE AND WHICH MAY BE AFFECTED BY THE WORK. THE CONDITION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTION ARE MAINTAINED BY THE STATE.

CONFIRM ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE MENTIONED PARTIES ARE MAINTAINED AND LEFT IN A CONDITION COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. THE CONTRACTOR IS RESPONSIBLE TO CORRECT ANY CHANGE IN THE CONDITON RESULTING FROM THEIR OPERATIONS AS DIRECTED AND APPROVED BY THE ENGINEER.

PAYMENT FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 611 CONDUIT ITEMS.

EXISTING SUBSURFACE DRAINAGE

PROVIDE UNOBSTRUCTED OUTLETS FOR ALL EXISTING UNDERDRAINS OR AGGREGATE DRAINS ENCOUNTERED DURING CONSTRUCTION.

PROVIDE AN OUTLET PER STANDARD CONSTRUCTION DRAWING DM-1.1 FOR ALL UNDERDRAINS THAT OUTLET TO A SLOPE. UNDERDRAINS THAT CAN BE CONNECTED TO THE NEW OR EXISTING UNDERDRAINS AT THE END OF THE PROJECT LIMITS AS WELL AS ALL NECESSARY BENDS OR BRANCHES REQUIRED FOR CONNECTION ARE INCLUDED IN THE BASIS OF PAYMENT FOR UNCLASSIFIED PIPE UNDERDRAINS.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED FOR THE WORK NOTED ABOVE:

|                                                                           |           |
|---------------------------------------------------------------------------|-----------|
| 601, TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT                     | 8 SQ. YD. |
| 611, 6" CONDUIT, TYPE F                                                   | 40 FT.    |
| 611, PRECAST REINFORCED CONCRETE OUTLET                                   | 4 EACH    |
| 605, 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN | 40 FT.    |

UNRECORDED STORM WATER DRAINAGE

FURNISH A CONTINUANCE FOR ALL UNRECORDED STORM WATER DRAINAGE, SUCH AS ROOF DRAINS, FOOTER DRAINS, OR YARD DRAINS, DISTURBED BY THE WORK. FURNISH EITHER AN OPEN CONTINUANCE OR AN UNOBSTRUCTED CONTINUANCE BY CONNECTING A CONDUIT THROUGH THE CURB OR INTO A DRAINAGE STRUCTURE. THE LOCATION, TYPE, SIZE AND GRADE OF THE NEEDED CONDUIT TO REPLACE OR EXTEND AN EXISTING DRAIN WILL BE DETERMINED BY THE ENGINEER. ALL SUCH CONTINUANCE REQUIRES A RIGHT OF WAY USE PERMIT.

THE FOLLOWING CONDUIT TYPES MAY BE USED: 707.33, 707.41 NON-PERFORATED, 707.42, 707.43, 707.45, 707.46, 707.47, 707.51, 707.52 SDR35.

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN PROVIDED FOR USE AS DIRECTED BY THE ENGINEER FOR THE WORK NOTED ABOVE:

|                                                  |         |
|--------------------------------------------------|---------|
| 611, 6" CONDUIT, TYPE B, FOR DRAINAGE CONNECTION | 200 FT. |
| 611, 6" CONDUIT, TYPE C, FOR DRAINAGE CONNECTION | 200 FT. |
| 611, 6" CONDUIT, TYPE E, FOR DRAINAGE CONNECTION | 200 FT. |
| 611, 6" CONDUIT, TYPE F, FOR DRAINAGE CONNECTION | 200 FT. |

ITEM 605 - 6" SHALLOW PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN  
ITEM 605 - 6" UNCLASSIFIED PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN  
ITEM 605 - 6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC, AS PER PLAN

THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 605 WITH THE EXCEPTION THAT CONDUIT MATERIAL SHALL CONFORM TO CMS 707.41 AND BACKFILL CONFORM TO CMS 703.01.

ITEM 611 - MANHOLE, NO. 3, AS PER PLAN

MANHOLES UNDER THIS ITEM HAVE A BASE LARGER THAN 60" AND ARE NOT ADDRESSED IN THE CITY OF SOLON STANDARD CONSTRUCTION DRAWINGS. THUS THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CITY OF SOLON STANDARD CONSTRUCTION DRAWING ST-3 EXCEPT THAT THE MANHOLE BASE SIZE AND TRANSITION FOLLOW ODOT ITEM 611 AND STANDARD CONSTRUCTION DRAWING MH-3. IN ADDITION, A SLOTTED ROUND GRATE SHALL BE INSTALLED WHERE NOTED IN THE PLANS AND SHALL BE EAST JORDAN GRATE 1251M OR GRATE 1450M OR APPROVED EQUIVALENT.

ITEM 611 - MANHOLE, MISC.: CITY OF SOLON STANDARD MANHOLE, TYPE "C" (ST-3)

MANHOLES DESIGNATED UNDER THIS ITEM SHALL BE IN ACCORDANCE WITH CITY OF SOLON STANDARD CONSTRUCTION DRAWING ST-3, AS SHOWN ON SHEET 369 .

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL USING CRUSHED LIMESTONE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 611 - MANHOLE, MISC.: CITY OF SOLON STANDARD MANHOLE, TYPE "C" (ST-3).

ITEM 611 - CATCH BASIN, MISC.: CITY OF SOLON STANDARD VERTICAL CURB INLET (ST-5B)

CATCH BASINS DESIGNATED UNDER THIS ITEM SHALL BE IN ACCORDANCE WITH CITY OF SOLON STANDARD CONSTRUCTION DRAWING ST-5B, AS SHOWN ON SHEET 369 .

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL USING CRUSHED LIMESTONE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 611 - CATCH BASIN, MISC.: CITY OF SOLON STANDARD VERTICAL CURB INLET (ST-5B).

ITEM 611 - CATCH BASIN, MISC.: CITY OF SOLON STANDARD 2-2B CATCH BASIN (ST-6B)

CATCH BASINS DESIGNATED UNDER THIS ITEM SHALL BE IN ACCORDANCE WITH CITY OF SOLON STANDARD CONSTRUCTION DRAWING ST-6B, AS SHOWN ON SHEET 369 .

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL USING CRUSHED LIMESTONE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 611 - CATCH BASIN, MISC.: CITY OF SOLON STANDARD CATCH BASIN (ST-6B).

ITEM 611 - CATCH BASIN, NO. 6, AS PER PLAN

THIS ITEM SHALL BE CONSTRUCTED IN CONFORMANCE WITH ITEM 611 AND STANDARD CONSTRUCTION DRAWING CB-6 WITH THE FOLLOWING EXCEPTIONS FROM THE CITY OF SOLON:

1. ALL BRICK SHALL BE RED SHALE BRICK CONFORMING TO ODOT ITEM 704.01 (ASTM C32), UNLESS APPROVED IN WRITTING BY THE ENGINEER
2. THE ENTIRE AREA AROUND THE BASIN SHALL BE BACKFILLED WITH ODOT ITEM #304 CRUSHED LIMESTONE, MECHANICALLY COMPACTED IN 12" LIFTS.
3. PRECAST UNITS SHALL BE SET ON 6" - #57 CRUSHED LIMESTONE.
4. ALL SEWER PIPES SHALL HAVE BOOTED CONNECTIONS CAST INTO THE STRUCTURE.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL USING CRUSHED LIMESTONE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 611 - CATCH BASIN, NO. 6, AS PER PLAN

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

113889

SHEET

23

TOTAL

488

QUANTITIES CARRIED TO GENERAL  
NOTES SUBSUMMARY ON SHEET 26

EROSION CONTROL

ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN

THIS ITEM SHALL CONSIST OF CONSTRUCTING CONCRETE PAVED GUTTER AS PER STANDARD CONSTRUCTION DRAWING DM-2.1 AND THE DETAILS AS SHOWN ON SHEET NO. 18 AT THE LOCATIONS SHOWN IN THE PLANS. THE GUTTER SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN IN THE DETAIL. PEJF (PERFORMED EXPANSION JOINT FILLER) SHALL BE PER CMS 516 AND IS INCLUDED IN THE COST OF THE PAVED GUTTER.

ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO COMPLETE THE ABOVE-DESCRIBED WORK SHALL BE INCLUDED IN THE CONTRACT PRICE BID PER FOOT FOR ITEM 601 - PAVED GUTTER, TYPE 1-2, AS PER PLAN.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF PERMANENT SEEDED AREAS:

|                                       |               |
|---------------------------------------|---------------|
| ITEM 659, SOIL ANALYSIS TEST          | 2 EACH        |
| ITEM 659, TOPSOIL                     | 2224 CU. YD.  |
| ITEM 659, SEEDING AND MULCHING        | 20034 SQ. YD. |
| ITEM 659, REPAIR SEEDING AND MULCHING | 1002 SQ. YD.  |
| ITEM 659, INTER-SEEDING               | 1002 SQ. YD.  |
| ITEM 659, COMMERCIAL FERTILIZER       | 2.80 TON      |
| ITEM 659, LIME                        | 4.14 ACRES    |
| ITEM 659, WATER                       | 111 M. GAL.   |

SEEDING AND MULCHING SHALL BE APPLIED TO ALL AREAS OF EXPOSED SOIL BETWEEN THE RIGHT-OF-WAY LINES, AND WITHIN THE CONSTRUCTION LIMITS FOR AREAS OUTSIDE THE RIGHT-OF-WAY LINES COVERED BY WORK AGREEMENT OR SLOPE EASEMENT.

QUANTITY CALCULATIONS FOR SEEDING AND MULCHING ARE BASED ON THESE LIMITS. ANY ADDITIONAL AREAS OUTSIDE OF THE AREAS INDENTIFIED THAT ARE DISTURBED BY CONTRACTOR TO FACILITATE CONSTRUCTION MUST BE RESTORED IN ACCORDANCE WITH C&MS 107.10 AND CONSIDERED INCIDENTAL TO THE WORK. NO ADDITIONAL COMPENSATION WILL BE MADE FOR THESE AREAS.

EARTHWORK

THE FOLLOWING IS A SUMMARY OF ALL EARTHWORK QUANTITES.

|                                |              |
|--------------------------------|--------------|
| HARPER RD                      |              |
| 203, EXCAVATION                | 5196 CU. YD. |
| 203, EMBANKMENT                | 1526 CU. YD. |
| 204, EXCAVATION OF SUBGRADE    | 830 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |              |
| AS PER PLAN                    | 830 CU. YD.  |
| 204, GEOGRID                   | 2491 SQ. YD. |
| 659, SEEDING AND MULCHING      | 2531 SQ. YD. |

|                                |              |
|--------------------------------|--------------|
| RAMP 1A                        |              |
| 203, EXCAVATION                | 649 CU. YD.  |
| 203, EMBANKMENT                | 207 CU. YD.  |
| 204, EXCAVATION OF SUBGRADE    | 189 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |              |
| AS PER PLAN                    | 189 CU. YD.  |
| 204, GEOGRID                   | 566 SQ. YD.  |
| 659, SEEDING AND MULCHING      | 1384 SQ. YD. |

|                                |              |
|--------------------------------|--------------|
| RAMP 1B                        |              |
| 203, EXCAVATION                | 1453 CU. YD. |
| 203, EMBANKMENT                | 210 CU. YD.  |
| 204, EXCAVATION OF SUBGRADE    | 443 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |              |
| AS PER PLAN                    | 443 CU. YD.  |
| 204, GEOGRID                   | 1329 SQ. YD. |
| 659, SEEDING AND MULCHING      | 2971 SQ. YD. |

|                                |             |
|--------------------------------|-------------|
| RAMP 2A                        |             |
| 203, EXCAVATION                | 310 CU. YD. |
| 203, EMBANKMENT                | 65 CU. YD.  |
| 204, EXCAVATION OF SUBGRADE    | 74 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |             |
| AS PER PLAN                    | 74 CU. YD.  |
| 204, GEOGRID                   | 221 SQ. YD. |
| 659, SEEDING AND MULCHING      | 452 SQ. YD. |

|                                |             |
|--------------------------------|-------------|
| RAMP 2B                        |             |
| 203, EXCAVATION                | 254 CU. YD. |
| 203, EMBANKMENT                | 211 CU. YD. |
| 204, EXCAVATION OF SUBGRADE    | 120 CU. YD. |
| 204, GRANULAR MATERIAL, TYPE B |             |
| AS PER PLAN                    | 120 CU. YD. |
| 204, GEOGRID                   | 359 SQ. YD. |
| 659, SEEDING AND MULCHING      | 730 SQ. YD. |

EARTHWORK - CONTINUED

|                                |              |
|--------------------------------|--------------|
| RAMP 3A                        |              |
| 203, EXCAVATION                | 1621 CU. YD. |
| 203, EMBANKMENT                | 794 CU. YD.  |
| 204, EXCAVATION OF SUBGRADE    | 318 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |              |
| AS PER PLAN                    | 318 CU. YD.  |
| 204, GEOGRID                   | 955 SQ. YD.  |
| 659, SEEDING AND MULCHING      | 6894 SQ. YD. |

|                                |              |
|--------------------------------|--------------|
| RAMP 3B                        |              |
| 203, EXCAVATION                | 518 CU. YD.  |
| 203, EMBANKMENT                | 203 CU. YD.  |
| 204, EXCAVATION OF SUBGRADE    | 174 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |              |
| AS PER PLAN                    | 174 CU. YD.  |
| 204, GEOGRID                   | 523 SQ. YD.  |
| 659, SEEDING AND MULCHING      | 1307 SQ. YD. |

|                                |             |
|--------------------------------|-------------|
| RAMP 4A                        |             |
| 203, EXCAVATION                | 124 CU. YD. |
| 203, EMBANKMENT                | 632 CU. YD. |
| 204, EXCAVATION OF SUBGRADE    | 153 CU. YD. |
| 204, GRANULAR MATERIAL, TYPE B |             |
| AS PER PLAN                    | 153 CU. YD. |
| 204, GEOGRID                   | 458 SQ. YD. |
| 659, SEEDING AND MULCHING      | 606 SQ. YD. |

|                                |              |
|--------------------------------|--------------|
| RAMP 4B                        |              |
| 203, EXCAVATION                | 250 CU. YD.  |
| 203, EMBANKMENT                | 348 CU. YD.  |
| 204, EXCAVATION OF SUBGRADE    | 136 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |              |
| AS PER PLAN                    | 136 CU. YD.  |
| 204, GEOGRID                   | 408 SQ. YD.  |
| 659, SEEDING AND MULCHING      | 1173 SQ. YD. |

|                                |              |
|--------------------------------|--------------|
| RAMP 4                         |              |
| 203, EXCAVATION                | 469 CU. YD.  |
| 203, EMBANKMENT                | 158 CU. YD.  |
| 204, EXCAVATION OF SUBGRADE    | 159 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |              |
| AS PER PLAN                    | 159 CU. YD.  |
| 204, GEOGRID                   | 478 SQ. YD.  |
| 659, SEEDING AND MULCHING      | 1986 SQ. YD. |

THE FOLLOWING GRAND TOTAL HAS BEEN CARRIED TO THE GENERAL NOTES SUBSUMMARY:

|                                |               |
|--------------------------------|---------------|
| 203, EXCAVATION                | 10844 CU. YD. |
| 203, EMBANKMENT                | 4354 CU. YD.  |
| 204, EXCAVATION OF SUBGRADE    | 2596 CU. YD.  |
| 204, GRANULAR MATERIAL, TYPE B |               |
| AS PER PLAN                    | 2596 CU. YD.  |
| 204, GEOGRID                   | 7788 SQ. YD.  |

ENVIRONMENTAL

THE PROJECT IS LOCATED WITHIN A FEMA FLOOD ZONE AND WILL BEDESIGNED TO COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL FLOODPLAIN PROTECTION STANDARDS. APPROPRIATE FLOODPLAIN PERMITTING SHALL BE OBTAINED PRIOR TO THE START OF CONSTRUCTION.

DO NOT PERFORM ANY WORK WITHIN THE JURISDICTIONAL BOUNDARIES OF ANY WATERWAY, INCLUDING WETLANDS, UNTIL THE CITY OF SOLON OBTAINS THE NECESSARY WATERWAY PERMIT(S). WORK INCLUDES THE PLACEMENT OF ANY TEMPORARY OR PERMANENT FILLS.

ENSURE TREE REMOVAL IS LIMITED TO THAT SPECIFIED IN PROJECT PLANS BY CLEARLY MARKING CLEARING LIMITS. ENSURE THAT CONTRACTORS UNDERSTAND CLEARING LIMITS AND HOW THEY ARE MARKED IN THE FIELD.

MODIFY ALL PHASES/ASPECTS OF THE PROJECT (E.G., TEMPORARY WORK AREAS, ALIGNMENTS) TO AVOID TREE REMOVAL IN EXCESS OF WHAT IS REQUIRED TO IMPLEMENT THE PROJECT SAFELY.

WETLAND AND ENVIRONMENTAL IMPACTS/AVOIDANCE

THIS PROJECT WILL IMPACT A TOTAL OF 0.20 ACRES OF WETLANDS, 0 LINEAR FEET OF STREAMS AND 0.00 ACRES OF IMPOUNDMENTS. THIS PROJECT WILL IMPACT WETLAND/STREAM/IMPOUNDMENTS AT THE FOLLOWING LOCATION:

|                    |            |
|--------------------|------------|
| WETLAND 1:         |            |
| US 422 STA. 825+41 | 0.00 ACRES |

|                     |            |
|---------------------|------------|
| WETLAND 2:          |            |
| RAMP 1B STA. 441+54 | 0.00 ACRES |

|                     |            |
|---------------------|------------|
| WETLAND 3:          |            |
| RAMP 1B STA. 446+16 | 0.05 ACRES |

|                     |            |
|---------------------|------------|
| WETLAND 4:          |            |
| RAMP 3A STA. 650+67 | 0.00 ACRES |

|                     |            |
|---------------------|------------|
| WETLAND 5:          |            |
| RAMP 3A STA. 656+46 | 0.00 ACRES |

|                     |                  |
|---------------------|------------------|
| WETLAND 6:          |                  |
| RAMP 4A STA. 351+00 | 0.15 ACRES       |
|                     | 0.20 ACRES TOTAL |

|                     |            |
|---------------------|------------|
| STREAM 1:           |            |
| RAMP 2A STA. 646+15 | 0 LIN. FT. |

|                     |            |
|---------------------|------------|
| STREAM 2:           |            |
| RAMP 1B STA. 437+59 | 0 LIN. FT. |

|                      |                  |
|----------------------|------------------|
| STREAM 3:            |                  |
| HARPER RD STA. 70+58 | 0 LIN. FT.       |
|                      | 0 LIN. FT. TOTAL |

|                      |                  |
|----------------------|------------------|
| IMPOUNDMENT 1:       |                  |
| HARPER RD STA. 57+02 | 0.00 ACRES       |
|                      | 0.00 ACRES TOTAL |

UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR IMPACT THE REMAINING WETLANDS/STREAMS/IMPOUNDMENTS INDICATED ON THE PLAN. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR STORE EQUIPMENT AND/OR MATERIALS WITHIN THESE WETLANDS.

TO PROTECT AND DELINEATE THE BOUNDARY OF THE EXISTING REMAINING WETLANDS, TEMPORARY CONSTRUCTION FENCE AND FILTER FABRIC FENCE 1500 LINEAR FEET, PAYMENT FOR THIS ITEM WILL BE MADE UNDER ITEM 832, EROSION CONTROL) SHALL BE INSTALLED ALONG THE PROPOSED CONSTRUCTION LIMITS WITHIN THE WETLANDS AREA BY THE CONTRACTOR PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES WITHIN THESE LIMITS AND ADJACENT AREA AND MAINTAINED BY CONTRACTOR THROUGHOUT PROJECT CONSTRUCTION.

BEST MANAGEMENT PRACTICES/SOIL EROSION AND SEDIMENTATION CONTROL

ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES AS SPECIFIED IN THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE IN PLACE PRIOR TO ANY CLEARING AND GRUBBING EXCAVATION, GRADING OR FILLING OPERATIONS AND INSTALLATION OF PROPOSED STRUCTURES OR UTILITIES. THEY SHALL REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE AND THE AREA IS STABILIZED AS ACCEPTED BY THE ENGINEER.

ENDANGERED BAT HABITAT REMOVAL

NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR BETWEEN OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACT TO THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NORTHERN LONG - EARED BAT AS REQUIRED BY THE ENDANGERED SPECIES ACT (ESA). FOR THE PURPOSE OF THIS NOTE, A TREE IS DEFINED AS A LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK 3 INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND A MINIMUM HEIGHT OF 13 FEET.

WATER QUALITY

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

VEGETATED FILTER STRIPS

THIS PLAN UTILIZES VEGETATED FILTER STRIPS FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AND ITEM 670, SLOPE EROSION PROTECTION TO ALL DISTURBED AREAS DESIGNATED AS VEGETATED FILTER STRIPS, THE EDGE OF SHOULDER, AND FORESLOPE AS SPECIFIED IN THE PLANS.

VEGETATED BIOFILTER

THIS PLAN UTILIZES VEGETATED BIOFILTER(S) FOR POST CONSTRUCTION STORM WATER TREATMENT. PLACE EITHER ITEM 660 SODDING OR ITEM 659 SEEDING AND MULCHING WITH A 4-INCH LIFT OF TOPSOIL AS SHOWN IN THE PLANS TO ANY DISTURBED AREA ON THE SHOULDER AND FORESLOPE DRAINING TO A VEGETATED BIOFILTER. THE DITCH FOR EACH VEGETATED BIOFILTER IS TRAPEZOIDAL, AS SHOWN IN THE PLAN CROSS SECTIONS. PROVIDE ITEM 670 AS SPECIFIED IN THE PLANS.

DESIGN AGENCY



DESIGNER

ATR

REVIEWER  
CWL 09/02/21

PROJECT ID  
113889

|       |       |
|-------|-------|
| SHEET | TOTAL |
| 24    | 488   |

QUANTITIES CARRIED TO GENERAL  
NOTES SUBSUMMARY ON SHEET 26

WATER WORK

CLEVELAND WATER DEPARTMENT FEES AND CHARGES

THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CLEVELAND WATER DEPARTMENT FEES AND CHARGES ASSOCIATED WITH THIS PROJECT. A LINE ITEM WITH A FIXED AMOUNT HAS BEEN ADDED TO THE BID FORM. A COPY OF THE CHARGE LETTER WILL BE PROVIDED UPON RECEIPT. PAYMENT WILL BE BASED ON THE CONTRACTOR'S PAID INVOICE TO CLEVELAND WATER DEPARTMENT. THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 638 - WATER WORK, MISC. CLEVELAND WATER DEPARTMENT FEES AND CHARGES LS

CLEVELAND WATER DEPARTMENT AS-BUILTS

THIS ITEM SHALL INCULDE ALL NECESSARY LABOR AND MATERIAL TO PROVIDE THE CITY OFFICIALS AND THE CITY OF CLEVELAND DIVISION OF WATER WITH ACCURATE AS-BUILT DRAWINGS. THESE DRAWINGS SHALL INCLUDE THE EXACT LOCATION OF ALL NEW VALVES AND HYDRANTS INSTALLED. THE DATE OF VALVE AND HYDRANT INSTALLATION SHALL BE INDICATED ON THE DRAWINGS. THE DRAWINGS SHALL SHOW THE EXACT LIMITS OF THE PIPE THAT WAS INSTALLED. ALL EXCAVATIONS SHALL BE RECORDED WITH LOCATION AND DIMENSIONS, DATE OPENED, DATE BACKFILLED, DATE PAVED AND SHALL BE SHOWN ON THE AS-BUILTS. A REGISTERED PROFESSIONAL ENGINEER SHALL SEAL THE DRAWINGS. AS-BUILTS WILL BE REQUIRED PRIOR TO DISINFECTING THE WATER MAIN. ALL WORK REQUIRED SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR "AS-BUILT DRAWINGS." THE FOLLOWING ESTIMATED QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 638 - WATER WORK, MISC.: CLEVELAND WATER DEPARTMENT AS-BUILT DRAWINGS LS

ITEM SPECIAL - 6" FIRE HYDRANT (CLEVELAND)

ALL HYDRANTS SHALL BE "MUELLER-CENTURION" (PAINTED YELLOW). THIS ITEM SHALL INCLUDE ALL NECESSARY EXCAVATION, EMBANKMENT, DEWATERING, SHEETING, PREPARATION OF THE TRENCH BOTTOM, ROCK EXCAVATION, VALVE, VALVE BOX, HYDRANT, 12"x6" TEE, JOINT MATERIAL, BLOCKING, ADJUSTMENT, BEDDING, BACKFILL, TESTING, DISPOSAL OF WASTE AND ALL OTHER EXPENSES WHETHER SPECIFICALLY MENTIONED OR NOT, FOR THE INSTALLATION OF A 6" HYDRANT ASSEMBLY IN ACCORDANCE WITH CLEVELAND WATER DEPARTMENT STANDARDS. SEE SHEETS 372 AND 373 FOR CLEVELAND WATER DEPARTMENT STANDARD CONSTRUCTION DRAWING STD-H06 AND STD-H08.

HYDRANT ASSEMBLIES SHALL BE EQUIPPED WITH A 4" HPHA HARRINGTON PERMANENT HYDRANT STORZ COUPLING AS MANUFACTURED BY HARRINGTON, INC.

THREADS ON HYDRANTS MUST BE CLEVELAND STANDARD THREAD AND MUST BE APPROVED BY THE FIRE CHIEF. THE CONTRACTOR IS REQUIRED TO SCHEDULE AN INSPECTION WITH THE FIRE CHIEF TO REVIEW FUNCTIONALITY OF ALL HYDRANTS PRIOR TO RECEIVING FINAL APPROVAL.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID FOR EACH HYDRANT ASSEMBLY INSTALLED COMPLETE, TESTED, DISINFECTED, AND READY FOR SERVICE INCLUDING PERMANENT ADAPTERS.

TEMPORARY WATER CONNECTIONS AT STOUFFER'S-NESTLE / WATER SERVICE COORDINATION

THE CONTRACTOR SHALL SUBMIT A TEMPORARY WATER SERVICE PLAN TO THE CITY OF SOLON ENGINEER AND THE CITY OF CLEVELAND WATER DEPARTMENT AS APPLICABLE PRIOR TO ANY WORK ON THE WATER SYSTEMS THAT MAY AFFECT CONTINUOUS WATER SERVICE TO THE STOUFFER'S/NESTLE COMPLEX. ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO PROVIDE TEMPORARY CONNECTION IS CONSIDERED INCIDENTAL TO THE PROPOSED WORK.

WORK THAT MAY INTERRUPT ANY OTHER WATER SERVICE CONNECTION SHALL BE COORDINATED WITH THE PROPERTY OWNER, CITY OF SOLON ENGINEER AND CITY OF CLEVELAND WATER DEPARTMENT PRIOR TO STARTING THE WORK WITH SERVICE DISRUPTIONS HELD TO A MINIMUM.

ITEM 638 - WATER WORK, MISC.: METER REMOVED AND RESET (CLEVELAND)

REMOVE AND RESET THE EXISTING WATER METER PER CITY OF CLEVELAND SPECIFICATIONS AND STANDARDS. CONTRACTOR SHALL INCLUDE 20' OF 2" TYPE K COPPER AND ALL COUPLERS TO RECONNECT TO THE SERVICE LINE.

ALL LABOR, TOOLS, EQUIPMENT, MATERIALS AND INCIDENTALS INCLUDING EXCAVATION AND BACKFILL SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR ITEM 638 - WATER WORK, MISC.: METER REMOVED AND RESET (CLEVELAND)

ITEM SPECIAL - FIRE HYDRANT SERVICE LINE EXTENDED AND ADJUSTED TO GRADE (CLEVELAND)  
ITEM SPECIAL - FIRE HYDRANT SERVICE LINE SHORTENED AND ADJUSTED TO GRADE (CLEVELAND)

ALL HYDRANTS SHALL BE "MUELLER-CENTURION" (PAINTED YELLOW). THIS ITEM SHALL INCLUDE ALL NECESSARY EXCAVATION, EMBANKMENT, DEWATERING, SHEETING, PREPARATION OF THE TRENCH BOTTOM, ROCK EXCAVATION, HYDRANT, JOINT MATERIAL, BLOCKING, ADJUSTMENT, BEDDING, BACKFILL, TESTING, DISPOSAL OF WASTE AND ALL OTHER EXPENSES WHETHER SPECIFICALLY MENTIONED OR NOT, FOR THE INSTALLATION OF A 6" HYDRANT ASSEMBLY IN ACCORDANCE WITH CLEVELAND WATER DEPARTMENT STANDARDS. SEE SHEET 372 FOR CLEVELAND WATER DEPARTMENT STANDARD CONSTRUCTION DRAWING STD-H02.

HYDRANT ASSEMBLIES SHALL BE EQUIPPED WITH A 4" HPHA HARRINGTON PERMANENT HYDRANT STORZ COUPLING AS MANUFACTURED BY HARRINGTON, INC.

THREADS ON HYDRANTS MUST BE CLEVELAND STANDARD THREAD AND MUST BE APPROVED BY THE FIRE CHIEF. THE CONTRACTOR IS REQUIRED TO SCHEDULE AN INSPECTION WITH THE FIRE CHIEF TO REVIEW FUNCTIONALITY OF ALL HYDRANTS PRIOR TO RECEIVING FINAL APPROVAL.

PAYMENT WILL BE MADE AT THE UNIT PRICE BID FOR EACH HYDRANT ASSEMBLY EXTENDED, SHORTENED AND ADJUSTED TO GRADE COMPLETE, TESTED, DISINFECTED, AND READY FOR SERVICE INCLUDING PERMANENT ADAPTERS.

ITEM SPECIAL - 12" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 52, MECHANICAL JOINTS AND FITTINGS (CLEVELAND)

THIS ITEM SHALL BE CONSTRUCTRED IN ACCORDANCE WITH CLEVELAND WATER DEPARTMENT STANDARDS. SEE SHEET 372 FOR CLEVELAND WATER DEPARTMENT STANDARD CONSTRUCTION DRAWING STD-008 FOR SPOOL PIECE INSTALLATION.

GENERAL NOTES

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

113889

SHEET

25

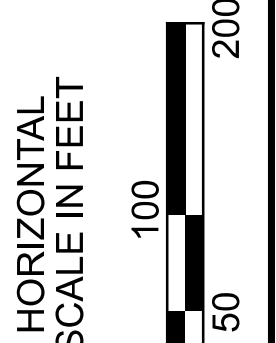
TOTAL

488

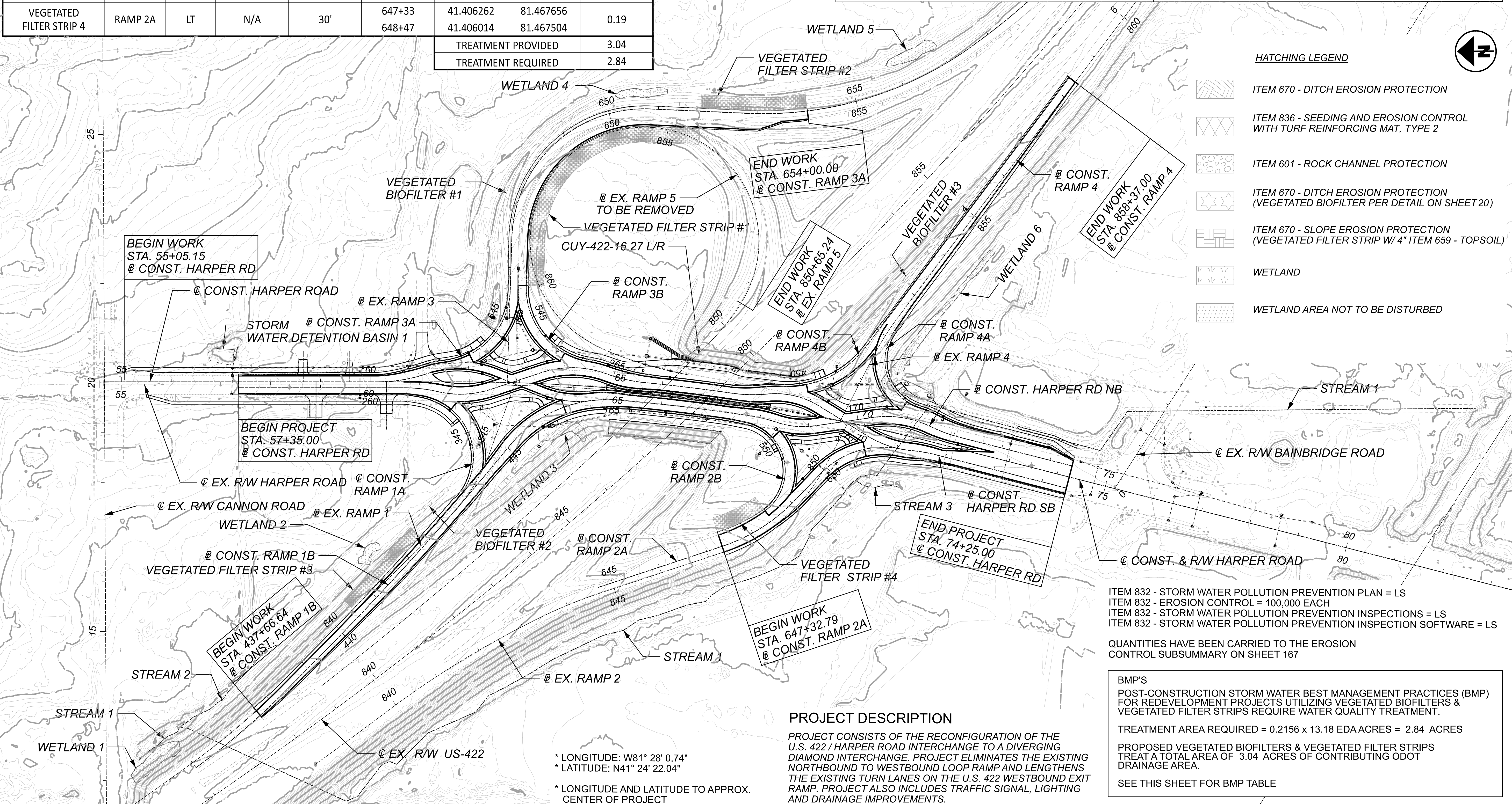
QUANTITIES CARRIED TO GENERAL  
NOTES SUBSUMMARY ON SHEET 26

| BMP TYPE                 | LOCATION | SIDE | DITCH WIDTH | FILTER STRIP WIDTH | STATION | LATITUDE  | LONGITUDE | EDA CREDITS (ACRES) |
|--------------------------|----------|------|-------------|--------------------|---------|-----------|-----------|---------------------|
| VEGETATED BIOFILTER 1    | RAMP 3A  | LT   | 4'          | N/A                | 650+50  | 41.406821 | 81.464509 | 0.71                |
| VEGETATED BIOFILTER 2    | RAMP 1B  | LT   | 4'          | N/A                | 443+60  | 41.407968 | 81.467598 | 0.23                |
| VEGETATED BIOFILTER 3    | RAMP 4   | LT   | 4'          | N/A                | 442+50  | 41.407731 | 81.467349 | 0.50                |
| VEGETATED FILTER STRIP 1 | RAMP 3A  | RT   | N/A         | 32'                | 852+19  | 41.405352 | 81.466149 | 0.86                |
| VEGETATED FILTER STRIP 2 | RAMP 3A  | LT   | N/A         | 27'                | 855+75  | 41.404724 | 81.465156 | 0.29                |
| VEGETATED FILTER STRIP 3 | RAMP 1B  | LT   | N/A         | 22'/27'            | 645+65  | 41.407221 | 81.465876 | 0.26                |
| VEGETATED FILTER STRIP 4 | RAMP 2A  | LT   | N/A         | 30'                | 651+85  | 41.406290 | 81.464549 | 0.19                |
|                          |          |      |             |                    | 654+00  | 41.405711 | 81.464557 |                     |
|                          |          |      |             |                    | 440+50  | 41.408300 | 81.468179 |                     |
|                          |          |      |             |                    | 442+50  | 41.407917 | 81.467663 |                     |
|                          |          |      |             |                    | 647+33  | 41.406262 | 81.467656 |                     |
|                          |          |      |             |                    | 648+47  | 41.406014 | 81.467504 |                     |
| TREATMENT PROVIDED       |          |      |             |                    |         |           |           | 3.04                |
| TREATMENT REQUIRED       |          |      |             |                    |         |           |           | 2.84                |

| PROJECT DATA                                       |           |                                                    |          |
|----------------------------------------------------|-----------|----------------------------------------------------|----------|
| TOTAL AREA OF PROJECT (RIGHT OF WAY)               | 16.95 AC. | PRE-CONSTRUCTION RUNOFF COEFFICIENT                | 0.67     |
| PROJECT EARTH DISTURBING ACTIVITIES                | 13.18 AC. | POST CONSTRUCTION RUNOFF COEFFICIENT               | 0.70     |
| CONTRACTOR EARTH DISTURBING ACTIVITIES             | 1.00 AC.  | IMPERVIOUS AREA FOR PRE-CONSTRUCTION               | 5.57 AC. |
| NOI EARTH DISTURBING ACTIVITIES                    | 14.18 AC. | IMPERVIOUS AREA FOR POST CONSTRUCTION              | 6.61 AC. |
| SOIL DATA                                          |           | CUYAHOGA COUNTY SOIL SURVEY (NRCS WEB SOIL SURVEY) |          |
| IMMEDIATE RECEIVING STREAM(S) OR SURFACE WATER(S)  |           | TINKERS CREEK                                      |          |
| SUBSEQUENT RECEIVING STREAM(S) OR SURFACE WATER(S) |           | CUYAHOGA RIVER                                     |          |



PROJECT SITE PLAN



DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CJC 09/02/21

PROJECT ID

113889

SHEET

187

TOTAL

488

CUY-422-16.20 (HARPER ROAD)

MODEL: I13889\_GP503 - Roadway PAPER SIZE: 34x22 (in.) DATE: 11/29/2022 TIME: 2:00:10 PM  
O:\Clients\ORD\2020\2020336\I13889\400-Engineering\Roadway\Sheets\I13889\_GP003.dgn USER: ccoo

FOR RAMP 1B PLANS, SEE SHEETS 196- 198  
FOR RAMP 2B PLANS, SEE SHEETS 201-203  
FOR RAMP 3B PLANS, SEE SHEETS 204-206  
FOR RAMP 4B PLANS, SEE SHEETS 211-212  
FOR ESTIMATED QUANTITIES, SEE SHEETS 170 -181

FOR INTERSECTION DETAILS, SEE SHEETS 340 - 343  
FOR ISLAND DETAILS, SEE SHEETS 344 - 347  
FOR CURB RAMP DETAILS, SEE SHEETS 348- 355  
FOR DRAINAGE PLAN, SEE SHEET 192  
FOR UNDERDRAIN DETAILS, SEE SHEETS 367 - 368

A IMPACT ATTENUATOR, TYPE 2  
BIDIRECTIONAL, (24" WIDTH)  
STA. 264+69.85

BEGIN TYPE D BARRIER  
STA. 264+92.92

MEET EX. PAVED GUTTER  
STA. 266+11.25

BEGIN TYPE D BARRIER  
STA. 164+89.17

BTA TYPE 1  
BEGIN TYPE C1 BARRIER  
STA. 267+45.00

END TYPE C1 BARRIER  
STA 268+27.17

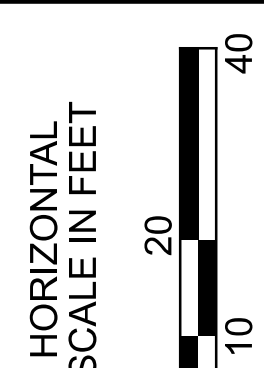
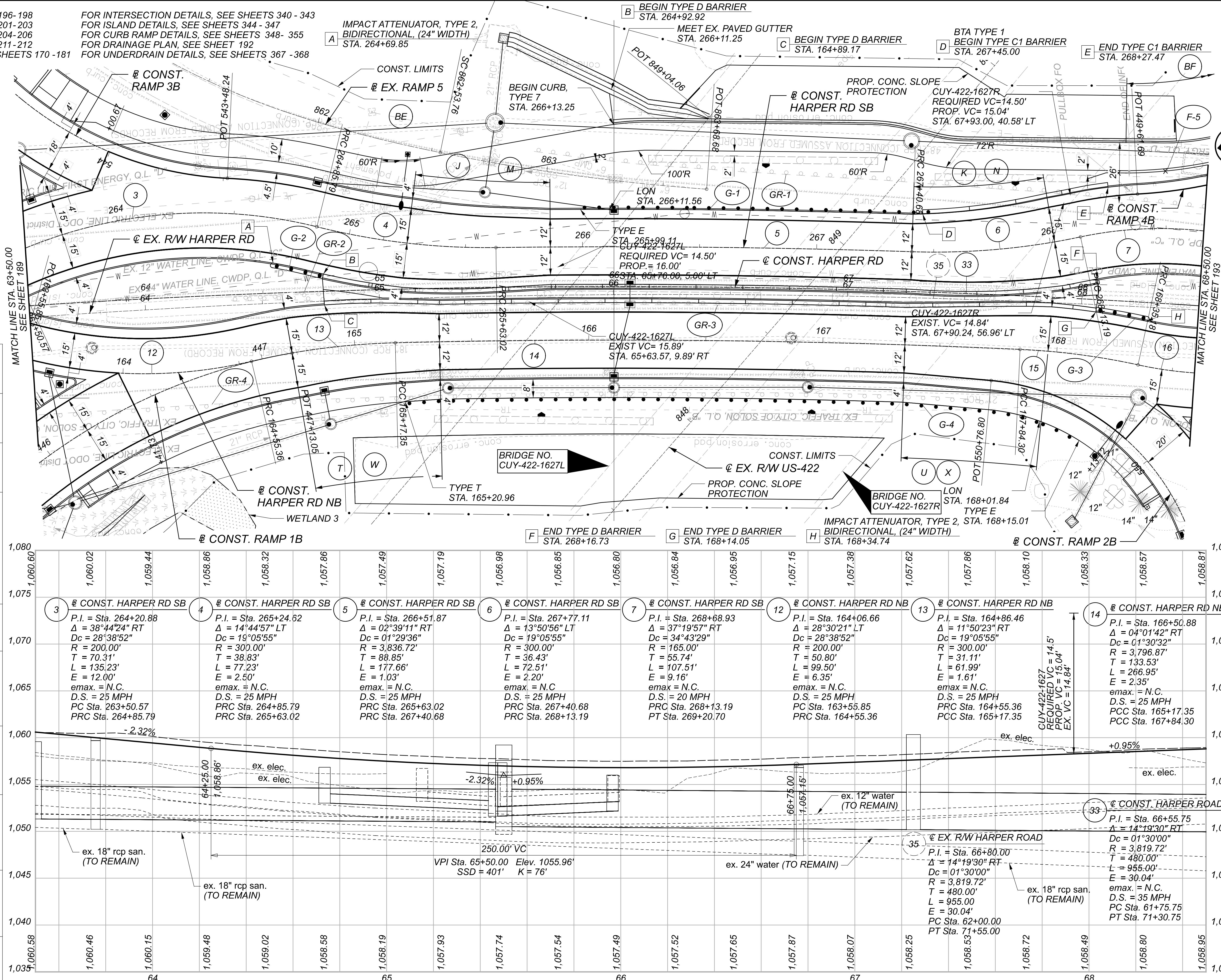
15 CONST. HARPER RD NB

*P.I.* = Sta. 168+09.80  
*Δ* = 09°43'04" RT  
*Dc* = 19°05'55"  
*R* = 300.00'  
*T* = 25.50'  
*L* = 50.88'  
*E* = 1.08'  
*emax.* = N.C.  
*D.S.* = 25 MPH  
*PCC* Sta. 167+84.30  
*PRC* Sta. 168+35.18

16 CONST. HARPER RD NB

*P.I.* = Sta. 168+74.72  
 $\Delta$  = 26°57'08" LT  
*Dc* = 34°43'29"  
*R* = 165.00'  
*T* = 39.54'  
*L* = 77.62'  
*E* = 4.67'  
*emax.* = N.C.  
*D.S.* = 20 MPH  
*PRC Sta.* 168+35.18  
*PT Sta.* 169+12.80

| TAPER TABLE |                   |           |                |           |      |               |             |           |            |
|-------------|-------------------|-----------|----------------|-----------|------|---------------|-------------|-----------|------------|
| TAPER CODE  | BEGINNING STATION |           | ENDING STATION |           | SIDE | DESCRIPTION   | BEGIN WIDTH | END WIDTH | TAPER RATE |
| J           | 265+25.00         | HARPER SB | 265+86.25      | HARPER SB | LT   | PAVEMENT      | 15.00'      | 12.00'    | 20:1       |
| K           | 267+40.68         | HARPER SB | 268+01.93      | HARPER SB | LT   | PAVEMENT      | 12.00'      | 15.00'    | 20:1       |
| M           | 265+25.00         | HARPER SB | 265+86.25      | HARPER SB | RT   | PAVEMENT      | 15.00'      | 12.00'    | 20:1       |
| N           | 267+40.68         | HARPER SB | 268+01.93      | HARPER SB | RT   | PAVEMENT      | 12.00'      | 15.00'    | 20:1       |
| T           | 164+75.00         | HARPER NB | 165+36.25      | HARPER NB | LT   | PAVEMENT      | 15.00'      | 12.00'    | 20:1       |
| U           | 167+35.00         | HARPER NB | 167+96.25      | HARPER NB | LT   | PAVEMENT      | 12.00'      | 15.00'    | 20:1       |
| W           | 164+75.00         | HARPER NB | 165+35.25      | HARPER NB | RT   | PAVEMENT      | 15.00'      | 12.00'    | 20:1       |
| X           | 167+35.00         | HARPER NB | 167+96.25      | HARPER NB | RT   | PAVEMENT      | 12.00'      | 15.00'    | 20:1       |
| BE          | 265+05.50         | HARPER SB | 265+39.24      | HARPER SB | LT   | DUAL-USE PATH | 10.00'      | 12.00'    | 17:1       |
| BF          | 268+35.70         | HARPER SB | 268+75.39      | HARPER SB | LT   | DUAL-USE PATH | 12.00'      | 10.00'    | 20:1       |



PLAN AND PROFILE - HARPER ROAD (ROADWAY)  
STA. 63+50.00 TO STA. 68+50.00

STA. 63+50.00 TO STA. 68+50.00

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWI 09/0

CVVL 09/C

PROJECT ID  
11000

113889

|       |       |
|-------|-------|
| SHEET | TOTAL |
|-------|-------|

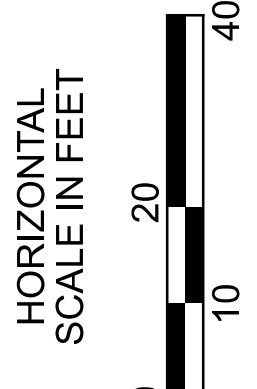
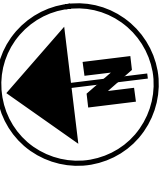
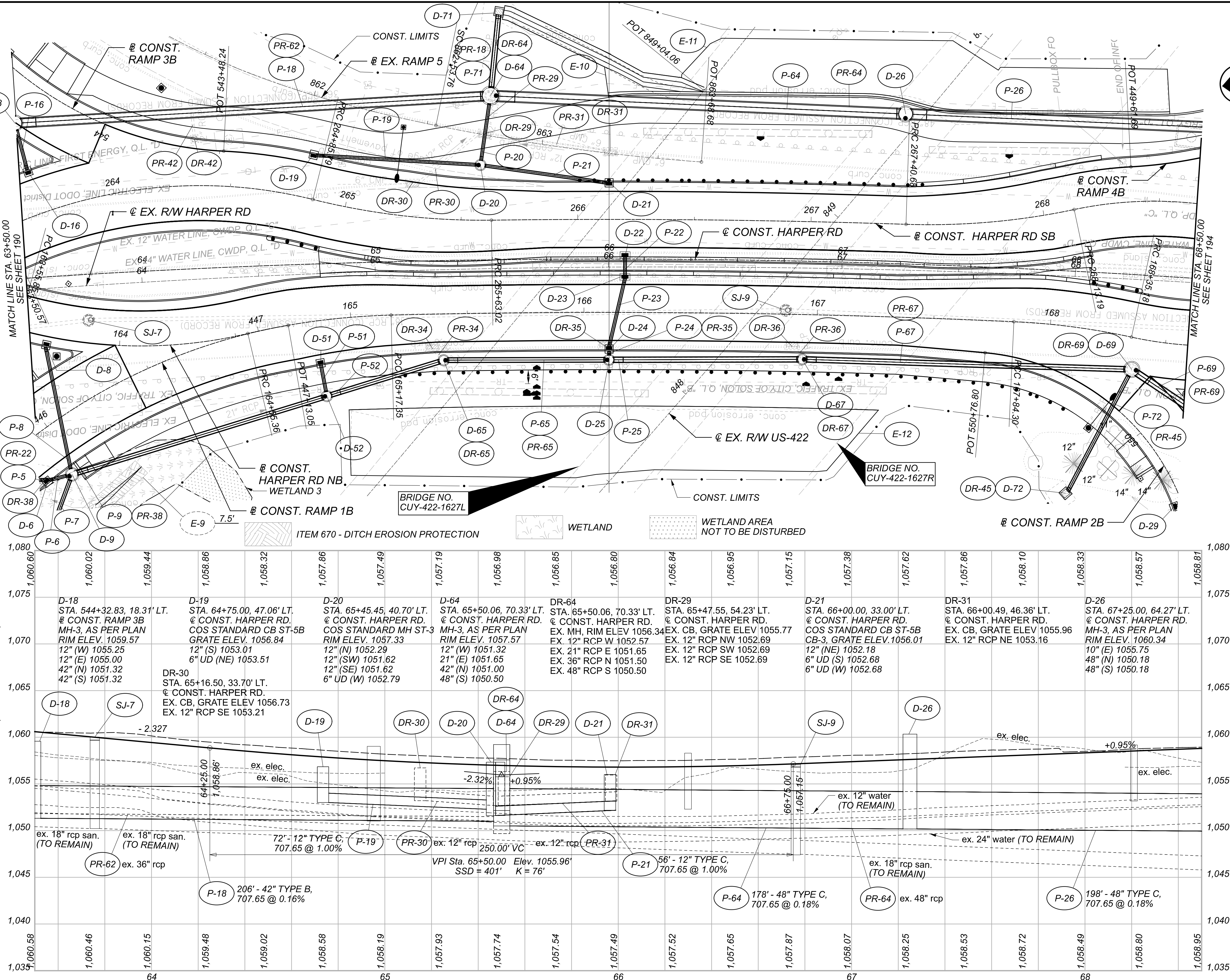
191

D-71  
STA. 65+54.12, 106.62' LT.  
@ CONST. HARPER RD.  
CB-5, GRATE ELEV. 1054.80  
21" (W) 1051.90

FOR RAMP 1B PLANS,  
SEE SHEETS 196- 198  
FOR RAMP 2B PLANS,  
SEE SHEETS 201- 203  
FOR RAMP 3B PLANS,  
SEE SHEETS 204- 206  
FOR RAMP 4B PLANS,  
SEE SHEETS 211- 212  
FOR INTERSECTION DETAILS,  
SEE SHEETS 340- 343  
FOR ISLAND DETAILS,  
SEE SHEETS 344- 347  
FOR CURB RAMP DETAILS,  
SEE SHEETS 348- 355  
FOR ROADWAY PLAN,  
SEE SHEET 191  
FOR UNDERDRAIN DETAILS,  
SEE SHEETS 367- 368  
FOR ESTIMATED QUANTITIES,  
SEE SHEETS 170- 181

SJ-7  
STA. 63+75.68, 19.65' RT.  
@ CONST. HARPER RD.  
SAN MH, ADJUSTED TO GRADE  
PROP. RIM ELEV 1059.69  
EX. MH, RIM ELEV 1060.02  
EX. 18" RCP N 1050.22  
EX. 18" RCP S 1050.22

SJ-9  
STA. 66+76.08, 21.21' RT.  
@ CONST. HARPER RD.  
SAN MH, ADJUSTED TO GRADE  
PROP. RIM ELEV 1056.82  
EX. MH, RIM ELEV 1057.04  
EX. 18" RCP N 1047.40  
EX. 18" RCP S 1047.40



PLAN AND PROFILE - HARPER ROAD (DRAINAGE)  
STA. 63+50.00 TO STA. 68+50.00

DESIGN AGENCY



DESIGNER

REVIEWER

CWL 09/02/21

PROJECT ID

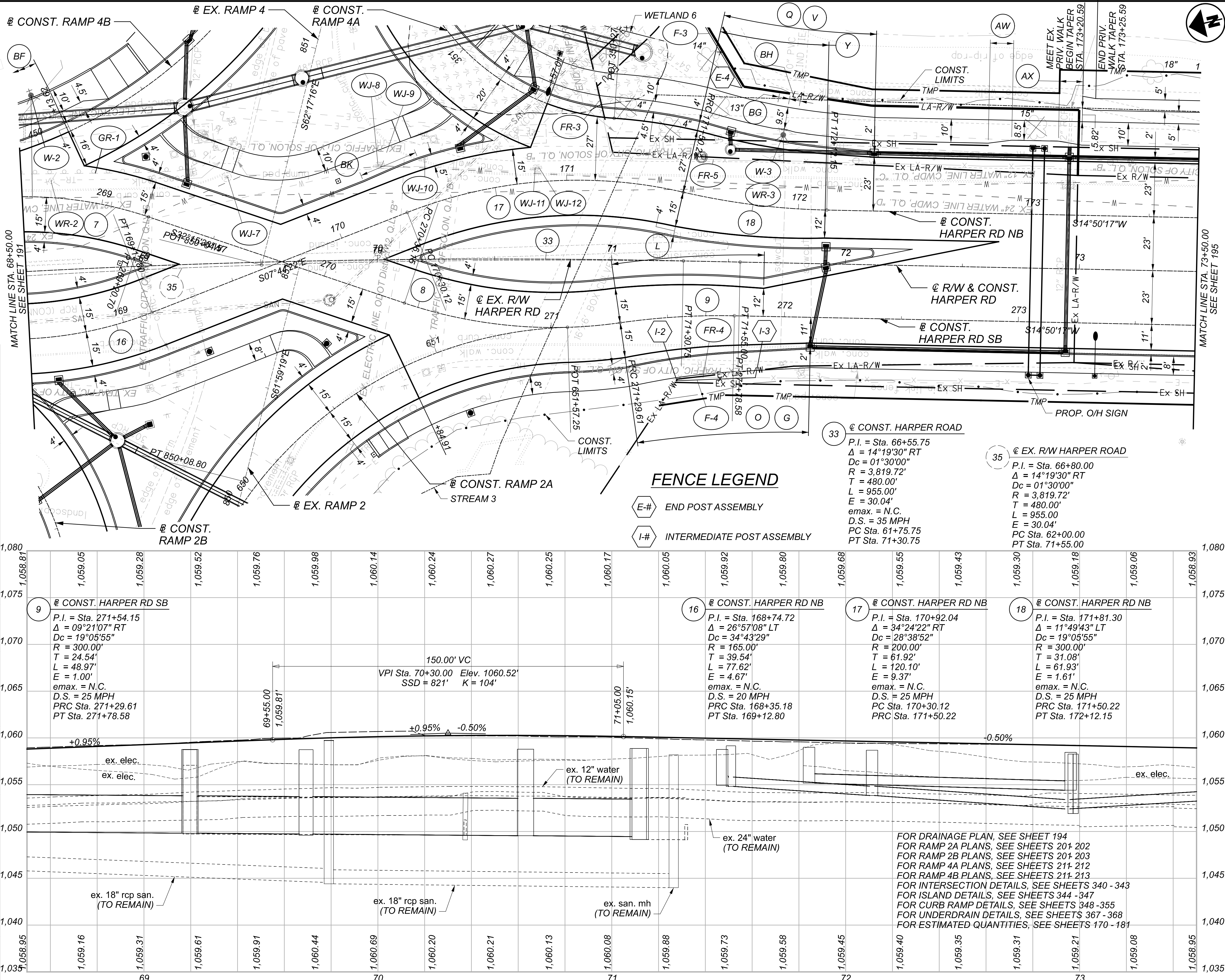
113889

SHEET

TOTAL

192 488

| TAPER TABLE |                   |                |           | TAPER TABLE   |             |           |            |
|-------------|-------------------|----------------|-----------|---------------|-------------|-----------|------------|
| TAPER CODE  | BEGINNING STATION | ENDING STATION | SIDE      | DESCRIPTION   | BEGIN WIDTH | END WIDTH | TAPER RATE |
| G           | 271+29.61         | 272+11.28      | HARPER SB | SHOULDER      | 4.00'       | 2.00'     | 41:1       |
| L           | 271+29.61         | 271+90.86      | HARPER SB | PAVEMENT      | 15.00'      | 12.00'    | 20:1       |
| O           | 271+29.61         | 272+11.28      | HARPER SB | PAVEMENT      | 15.00'      | 11.00'    | 20:1       |
| Q           | 171+50.22         | 172+31.89      | HARPER NB | SHOULDER      | 4.00'       | 2.00'     | 41:1       |
| V           | 171+50.22         | 172+31.89      | HARPER NB | PAVEMENT      | 27.00'      | 23.00'    | 20:1       |
| Y           | 171+50.22         | 172+11.47      | HARPER NB | PAVEMENT      | 15.00'      | 12.00'    | 20:1       |
| AW          | 172+80.57         | 172+90.57      | HARPER NB | DUAL-USE PATH | 10.00'      | 8.50'     | 7:1        |
| AX          | 173+10.57         | 173+20.57      | HARPER NB | DUAL-USE PATH | 8.50'       | 10.00'    | 7:1        |
| BF          | 268+35.70         | 268+75.39      | HARPER SB | DUAL-USE PATH | 12.00'      | 10.00'    | 20:1       |
| BG          | 171+85.33         | 171+90.88      | HARPER NB | DUAL-USE PATH | 10.00'      | 9.50'     | 11:1       |
| BH          | 171+90.88         | 171+96.32      | HARPER NB | DUAL-USE PATH | 9.50'       | 10.00'    | 11:1       |
| BL          | 261+65.45         | 262+28.96      | HARPER SB | SHOULDER      | 6.35'       | 4.00'     | 27:1       |



FOR ROADWAY PLAN,  
SEE SHEET 193  
FOR RAMP 2A PLANS,  
SEE SHEETS 201- 202  
FOR RAMP 2B PLANS,  
SEE SHEETS 201- 203  
FOR RAMP 4A PLANS,  
SEE SHEETS 211- 212  
FOR RAMP 4B PLANS,  
SEE SHEETS 211- 213  
FOR INTERSECTION DETAILS,  
SEE SHEETS 340 - 343  
FOR ISLAND DETAILS,  
SEE SHEETS 344 - 347  
FOR CURB RAMP DETAILS,  
SEE SHEETS 348 - 355  
FOR UNDERDRAIN DETAILS,  
SEE SHEETS 367 - 368  
FOR ESTIMATED QUANTITIES,  
SEE SHEETS 170 - 181

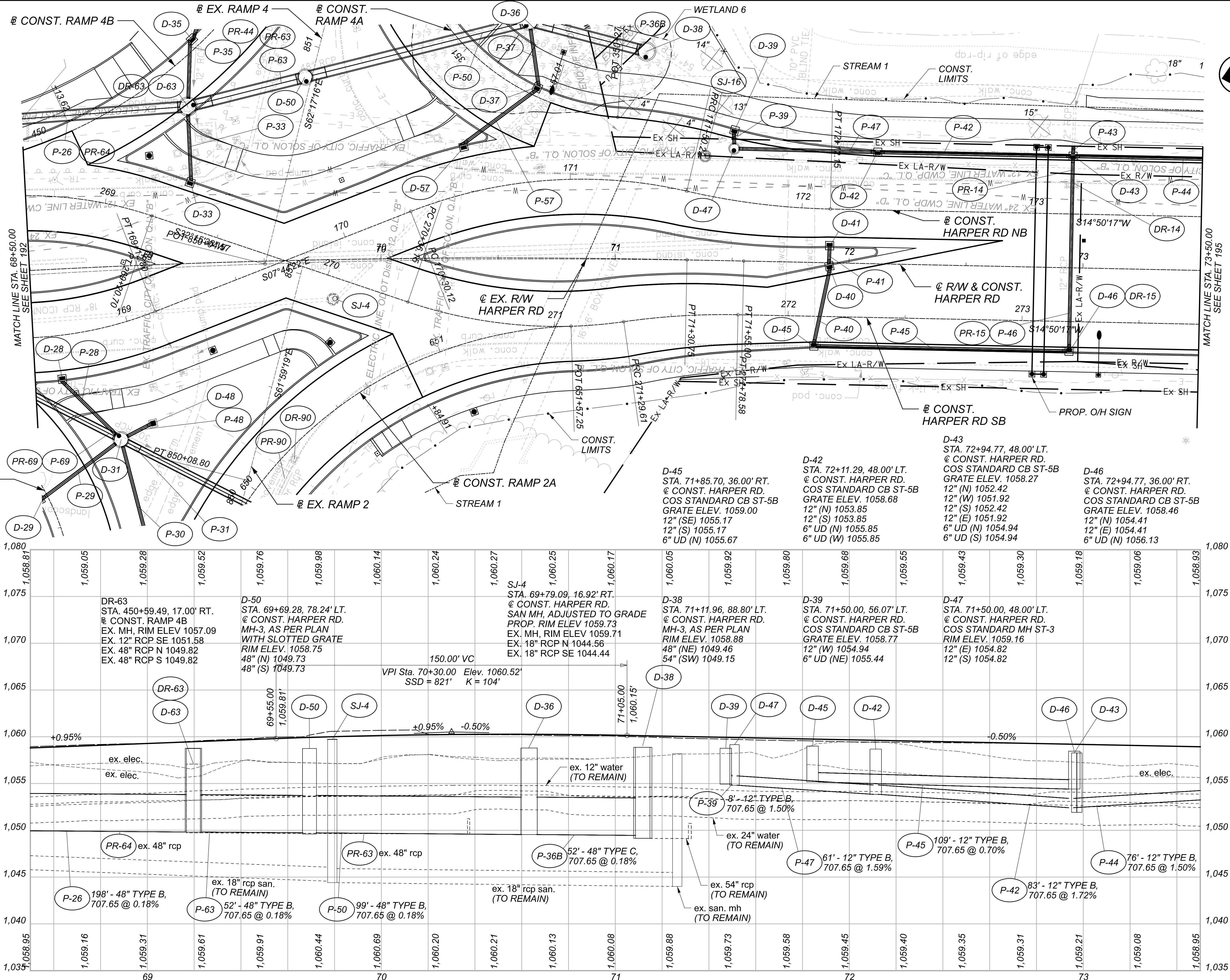


SJ-16  
STA. 71+37.62, 44.55' LT.  
@ CONST. HARPER RD.  
SAN MH, RECONST. TO GRADE  
PROP. RIM ELEV 1059.15  
EX. MH, RIM ELEV 1060.68

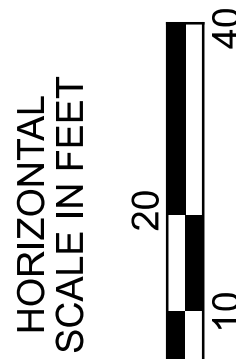
@ CONST.  
RAMP 2B

D-63  
STA. 450+59.49, 17.00' RT.  
@ CONST. RAMP 4B  
MH-3, AS PER PLAN  
RIM ELEV. 1058.75  
12" (W) 1053.82  
12" (E) 1051.58  
48" (N) 1049.82  
48" (S) 1049.82

D-36  
STA. 350+85.70, 26.40' RT.  
@ CONST. RAMP 4A  
MH-3, AS PER PLAN  
RIM ELEV. 1058.80  
12" (W) 1054.14  
36" (E) 1051.11  
48" (N) 1049.55  
48" (SW) 1049.55



PLAN AND PROFILE - HARPER ROAD (DRAINAGE)  
STA. 68+50.00 TO STA. 73+50.00



DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

113889

SHEET

194

TOTAL

488

| TAPER TABLE |                   |         |                |         |      |             |             |            |
|-------------|-------------------|---------|----------------|---------|------|-------------|-------------|------------|
| TAPER CODE  | BEGINNING STATION |         | ENDING STATION |         | SIDE | DESCRIPTION | BEGIN WIDTH | END WIDTH  |
| Z           | 345+99.49         | RAMP 1A | 346+22.52      | RAMP 1A | LT   | SHOULDER    | 4.00'       | 3.25'      |
| AB          | 443+34.80         | RAMP 1B | 443+59.80      | RAMP 1B | RT   | SHOULDER    | 3.00'       | 4.00'      |
| AD          | 444+45.86         | RAMP 1B | 445+07.11      | RAMP 1B | RT   | PAVEMENT    | 12.00'      | 15.00'     |
| AE          | 444+45.86         | RAMP 1B | 445+07.11      | RAMP 1B | LT   | PAVEMENT    | 12.00'      | 15.00'     |
| AG          | 443+49.80         | RAMP 1B | 443+59.80      | RAMP 1B | LT   | SHOULDER    | 6.00'       | 4.00'      |
|             |                   |         |                |         |      |             |             | TAPER RATE |
|             |                   |         |                |         |      |             |             | 31:1       |
|             |                   |         |                |         |      |             |             | 25:1       |
|             |                   |         |                |         |      |             |             | 20:1       |
|             |                   |         |                |         |      |             |             | 20:1       |
|             |                   |         |                |         |      |             |             | 5:1        |

\* TRANSITION CURB HEIGHT FROM 0" TO 6" IN 10 FT

### FENCE LEGEND

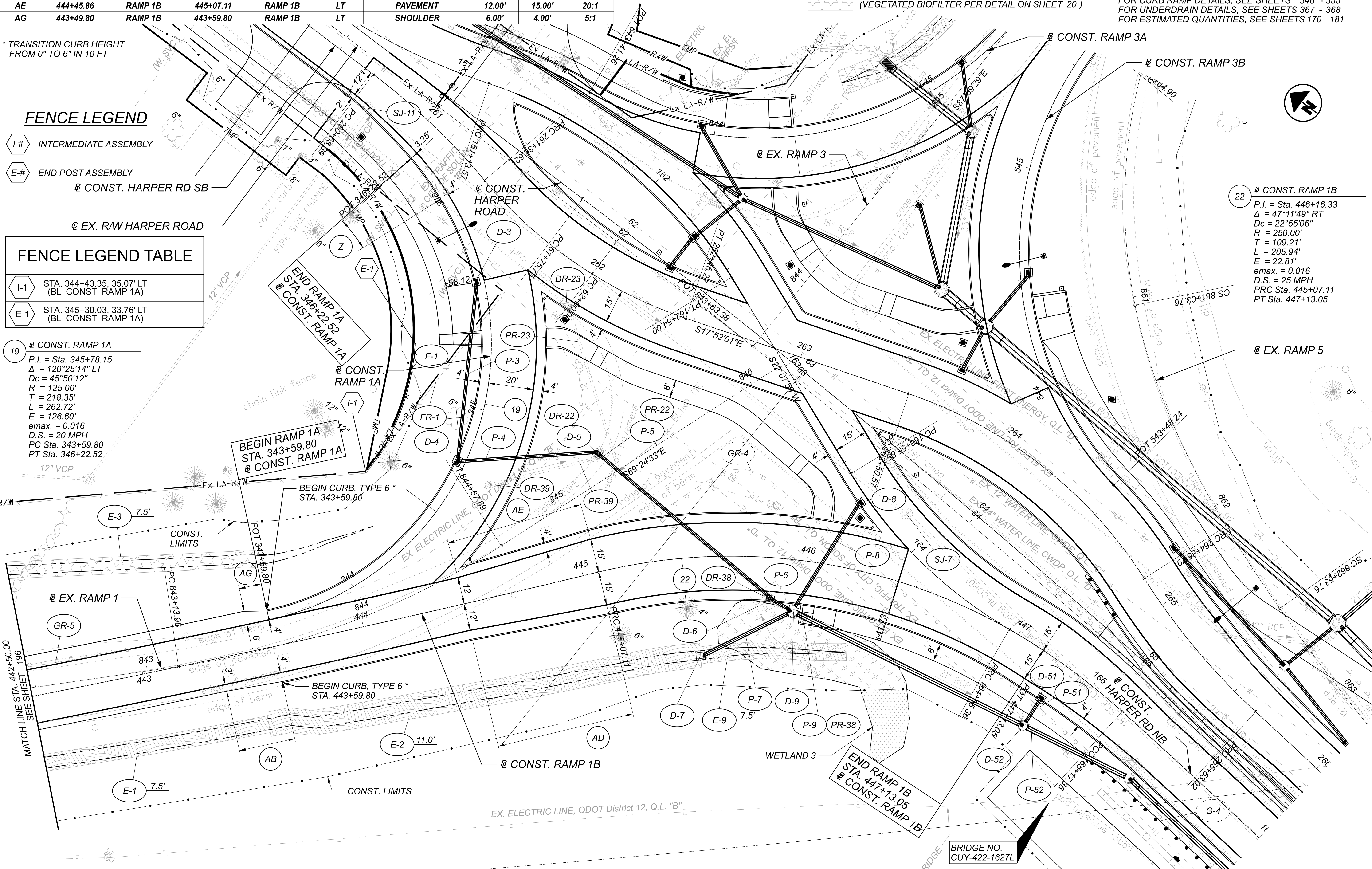
- I-# INTERMEDIATE ASSEMBLY
- E-# END POST ASSEMBLY
- CONST. HARPER RD SB

EX. R/W HARPER ROAD

### FENCE LEGEND TABLE

- |     |                                                |
|-----|------------------------------------------------|
| I-1 | STA. 344+43.35, 35.07' LT (BL. CONST. RAMP 1A) |
| E-1 | STA. 345+30.03, 33.76' LT (BL. CONST. RAMP 1A) |

- 19 CONST. RAMP 1A  
P.I. = Sta. 345+78.15  
 $\Delta = 120^\circ 25' 14''$  LT  
 $D_c = 45^\circ 50' 12''$   
 $R = 125.00'$   
 $T = 218.35'$   
 $L = 262.72'$   
 $E = 126.60'$   
 $e_{max} = 0.016$   
 $D.S. = 20$  MPH  
 $PC$  Sta. 343+59.80  
 $PT$  Sta. 346+22.52



- WETLAND
- WETLAND AREA NOT TO BE DISTURBED
- ITEM 670 - DITCH EROSION PROTECTION
- ITEM 836 - SEEDING AND EROSION CONTROL WITH TURF REINFORCING MAT, TYPE 2
- ITEM 670 - DITCH EROSION PROTECTION (VEGETATED BIOFILTER PER DETAIL ON SHEET 20)

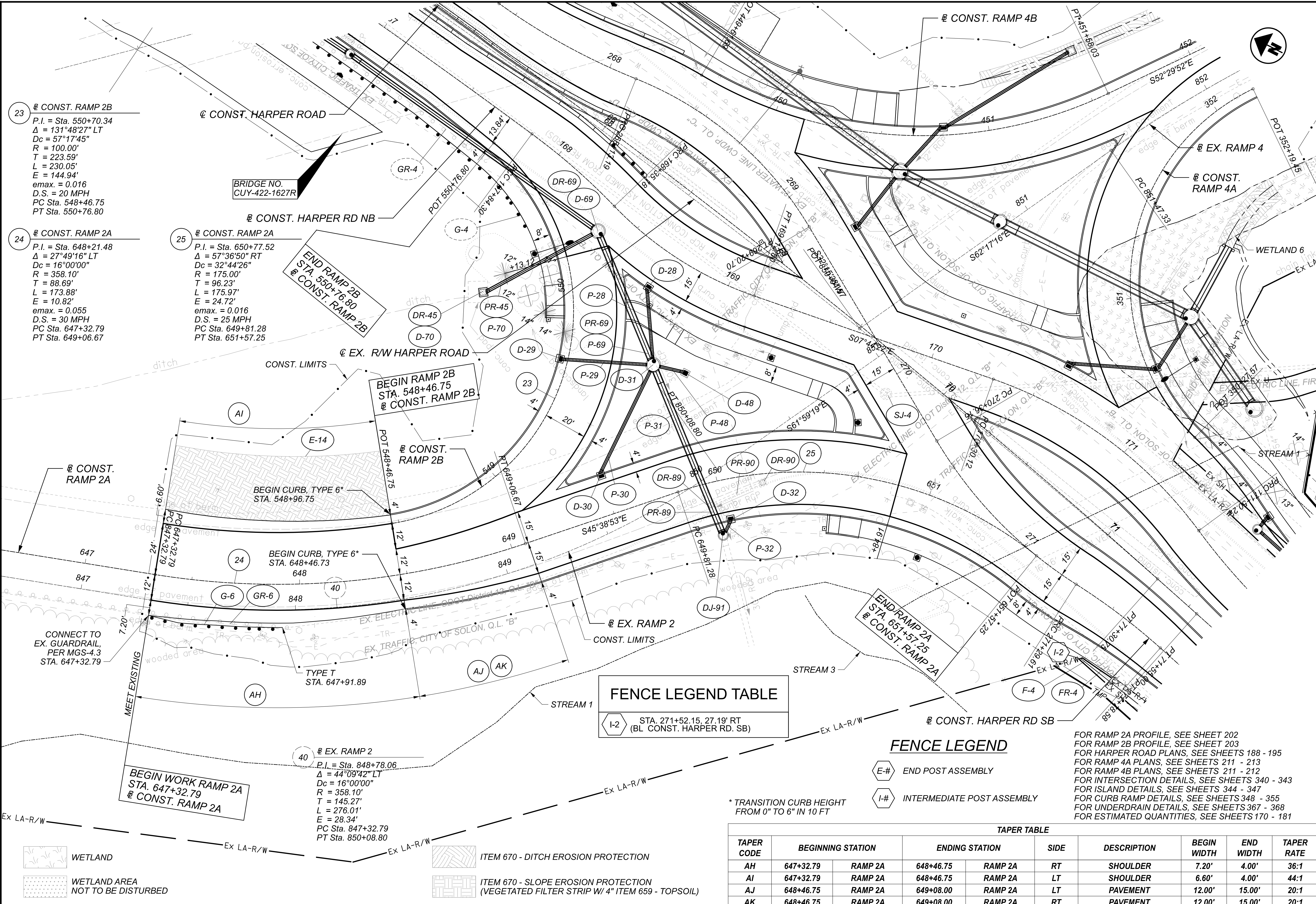
FOR RAMP 1B PROFILE, SEE SHEET 199  
FOR RAMP 1A PROFILE, SEE SHEET 200  
FOR HARPER ROAD PLANS, SEE SHEETS 188 - 195  
FOR RAMP 3A PLANS, SEE SHEETS 204 - 210  
FOR RAMP 3B PLANS, SEE SHEETS 204 - 206  
FOR INTERSECTION DETAILS, SEE SHEETS 340 - 343  
FOR ISLAND DETAILS, SEE SHEETS 344 - 347  
FOR CURB RAMP DETAILS, SEE SHEETS 348 - 355  
FOR UNDERDRAIN DETAILS, SEE SHEETS 367 - 368  
FOR ESTIMATED QUANTITIES, SEE SHEETS 170 - 181

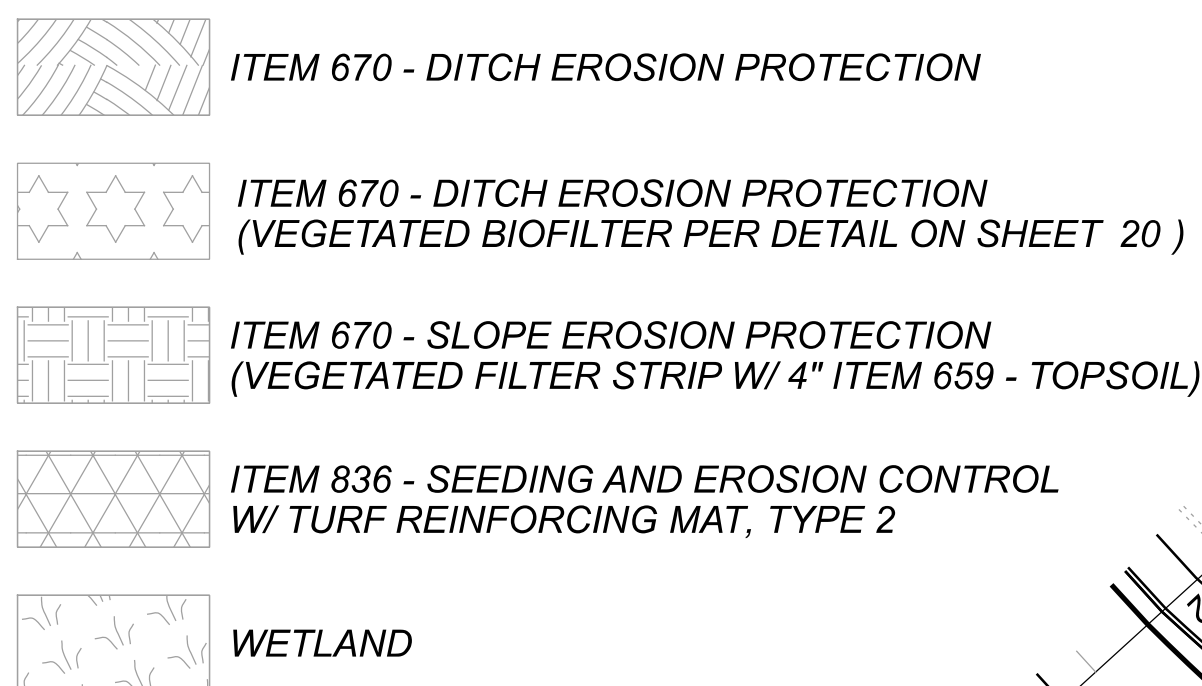
## PLAN - RAMP 1B & 1A STA. 442+50.00 TO END

DESIGN AGENCY



|            |              |
|------------|--------------|
| DESIGNER   | ATR          |
| REVIEWER   | CWL 09/02/21 |
| PROJECT ID | 113889       |
| SHEET      | 198          |
| TOTAL      | 488          |





\*\* TRANSITION CURB HEIGHT  
FROM 10" TO 6" IN 10'

\*\*\*TRANSITION CURB HEIGHT  
FROM 0" TO 10" IN 10'

\* TRANSITION CURB HEIGHT  
FROM 0" TO 6" IN 10 FT

| TAPER TABLE |                   |         |                |         |      |             |             |           |
|-------------|-------------------|---------|----------------|---------|------|-------------|-------------|-----------|
| TAPER CODE  | BEGINNING STATION |         | ENDING STATION |         | SIDE | DESCRIPTION | BEGIN WIDTH | END WIDTH |
| AM          | 645+64.90         | RAMP 3A | 645+89.90      | RAMP 3A | RT   | SHOULDER    | 4.00'       | 3.00'     |
| AN          | 645+64.90         | RAMP 3A | 646+14.90      | RAMP 3A | LT   | SHOULDER    | 4.00'       | 6.00'     |

## FENCE LEGEND

E-# END POST ASSEMBLY

## FENCE LEGEND TABLE

E-3 STA. 644+35.65, 22.10' LT  
(BL CONST. RAMP 3A)

26 @ CONST. RAMP 3A  
P.I. = Sta. 644+69.90  
 $\Delta = 81^{\circ}13'59"$  LT  
Dc = 38°11'50"  
R = 150.00'  
T = 128.64'  
L = 212.67'  
E = 47.61'  
emax. = 0.016  
D.S. = 20 MPH  
PC Sta. 643+41.26  
PT Sta. 645+53.92

46 @ EX. RAMP 5  
P.I. = Sta. 854+38.48  
 $\Delta = 249^{\circ}02'14"$  LT  
Dc = 24°54'40"  
R = 230.00'  
T = 334.42'  
L = 999.70'  
E = 175.88'  
SC Sta. 851+04.06  
CS Sta. 861+03.76

27 @ CONST. RAMP 3A  
P.I. = Sta. 649+31.93  
 $\Delta = 90^{\circ}47'29"$  RT  
Dc = 21°27'33"  
R = 267.00'  
T = 270.71'  
L = 423.09'  
E = 113.23'  
emax. = 0.059  
D.S. = 30 MPH  
PC Sta. 646+61.21  
PT Sta. 650+84.30

41 @ EX. RAMP 3  
P.I. = Sta. 849+31.93  
 $\Delta = 90^{\circ}47'29"$  RT  
Dc = 21°27'33"  
R = 267.00'  
T = 270.71'  
L = 423.09'  
E = 113.23'  
PC Sta. 846+61.21  
PT Sta. 850+84.30

30 @ CONST. RAMP 3B  
P.I. = Sta. 544+80.39  
 $\Delta = 82^{\circ}45'26"$  RT  
Dc = 38°11'50"  
R = 150.00'  
T = 132.14'  
L = 216.66'  
E = 49.90'  
emax. = 0.016  
D.S. = 20 MPH  
PC Sta. 543+48.24  
PT Sta. 545+64.90

FOR RAMP 3A PROFILE, SEE SHEET 205  
FOR RAMP 3B PROFILE, SEE SHEET 206  
FOR HARPER ROAD PLANS, SEE SHEETS 188 - 195  
FOR RAMP 1A PLANS, SEE SHEETS 198 - 200  
FOR RAMP 1B PLANS, SEE SHEETS 196 - 199  
FOR INTERSECTION DETAILS, SEE SHEETS 340 - 343  
FOR ISLAND DETAILS, SEE SHEETS 344 - 347  
FOR CURB RAMP DETAILS, SEE SHEETS 348 - 355  
FOR UNDERDRAIN DETAILS, SEE SHEETS 367 - 368  
FOR ESTIMATED QUANTITIES, SEE SHEETS 170 - 181

HORIZONTAL  
SCALE IN FEET

PLAN - RAMP 3A & 3B  
BEGIN TO STA. 647+00.00

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 09/02/21

PROJECT ID

113889

SHEET

204

TOTAL

488

**E-#** *END POST ASSEMBLY*

**I-#** *INTERMEDIATE POST ASSEMBLY*

|     |                                                        |
|-----|--------------------------------------------------------|
| I-4 | STA. 852+26.44, 94.78' RT<br>(BL CONST. RAMP 4)        |
| E-4 | STA. 171+67.34, 48.67' LT<br>(BL CONST. HARPER RD. NB) |

\* TRANSITION CURB HEIGHT  
FROM 0" TO 6" IN 10 FT

\*\* TRANSITION CURB HEIGHT  
FROM 10" TO 6" IN 10 FT

44 EX. RAMP 4

$P.I. = Sta. 851+96.40$   
 $\Delta = 09^{\circ}47'24'' RT$   
 $Dc = 10^{\circ}00'00''$   
 $R = 572.96'$   
 $T = 49.07'$   
 $L = 97.90'$   
 $E = 2.10'$   
 $PC Sta. 851+47.33$   
 $PT Sta. 852+45.23$

2 Ⓔ CONST. RAMP 4A  
*P.I.* = Sta. 351+70.22  
 $\Delta = 109^{\circ}56'04''$  RT  
*Dc* =  $57^{\circ}17'45''$   
*R* = 100.00'  
*T* = 142.64'  
*L* = 191.87'  
*E* = 74.20'  
*emax.* = 0.016  
*D.S.* = 20 MPH  
*PC* Sta. 350+27.57  
*PT* Sta. 352+19.45

31 g CONST. RAMP 4B  
*P.I.* = Sta. 450+68.59  
 $\Delta = 56^{\circ}14'51''$  LT  
 $D_c = 28^{\circ}38'52''$   
 $R = 200.0'$   
 $T = 106.90'$   
 $L = 196.34'$   
 $E = 26.78'$   
 $e_{max} = 0.016$   
 $D.S. = 25$  MPH  
*PC Sta.* 449+61.69  
*PT Sta.* 451+58.03

49 @ EX. R/W US-422  
P.I. = Sta. 846+55.39  
 $\Delta = 28^{\circ}39'30''$  LT  
Dc =  $00^{\circ}40'00''$   
R = 8,594.37'  
T = 2,195.34'  
L = 4,298.75'  
E = 275.96'  
D.S. = 65 MPH  
PC Sta. 824+60.05  
PT Sta. 867+58.80

FOR RAMP 4 PLANS, SEE SHEETS 214 - 215  
FOR RAMP 4A PROFILE, SEE SHEET 213  
FOR RAMP 4B PROFILE, SEE SHEET 212  
FOR HARPER ROAD PLANS, SEE SHEETS 188 - 195  
FOR RAMP 2A PLANS, SEE SHEETS 201 - 202  
FOR RAMP 2B PLANS, SEE SHEETS 201 - 203  
FOR INTERSECTION DETAILS, SEE SHEETS 340 - 343  
FOR ISLAND DETAILS, SEE SHEETS 344 - 347  
FOR CURB RAMP DETAILS, SEE SHEETS 348 - 355  
FOR UNDERDRAIN DETAILS, SEE SHEETS 367 - 368  
FOR ESTIMATED QUANTITIES, SEE SHEETS 170 - 181

PLAN - RAMP 4A & 4B  
BEGIN TO END

DESIGN AGENCY



DESIGNER  
ATR

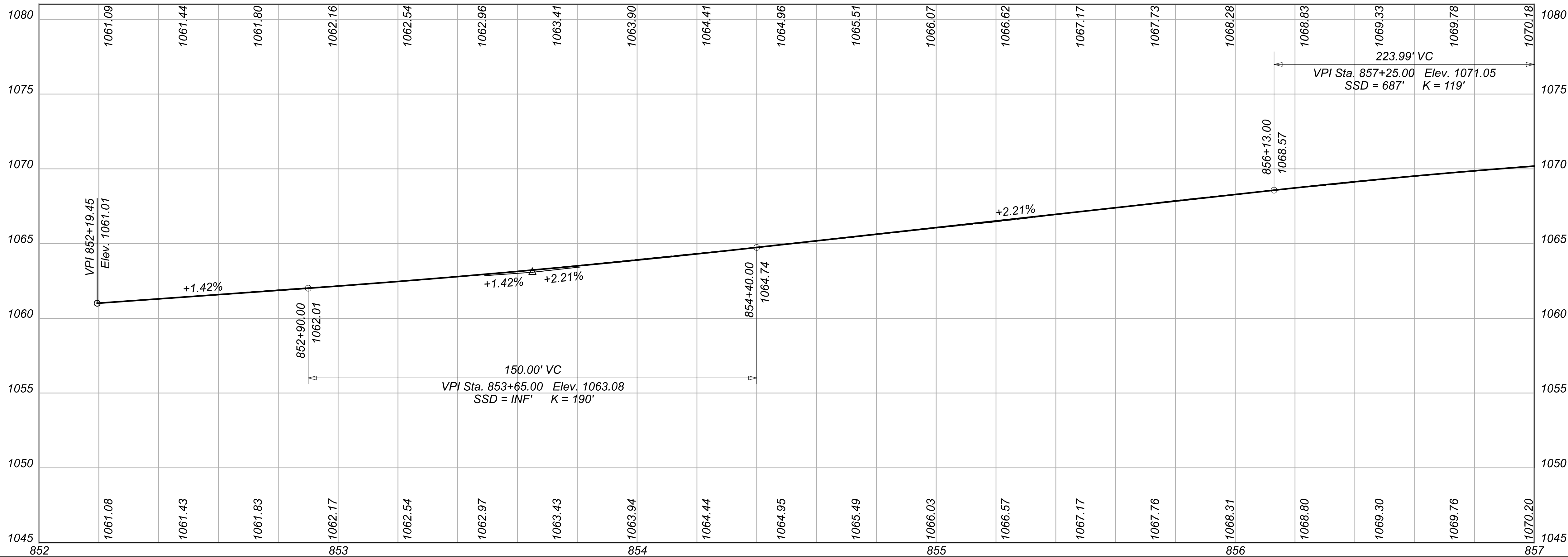
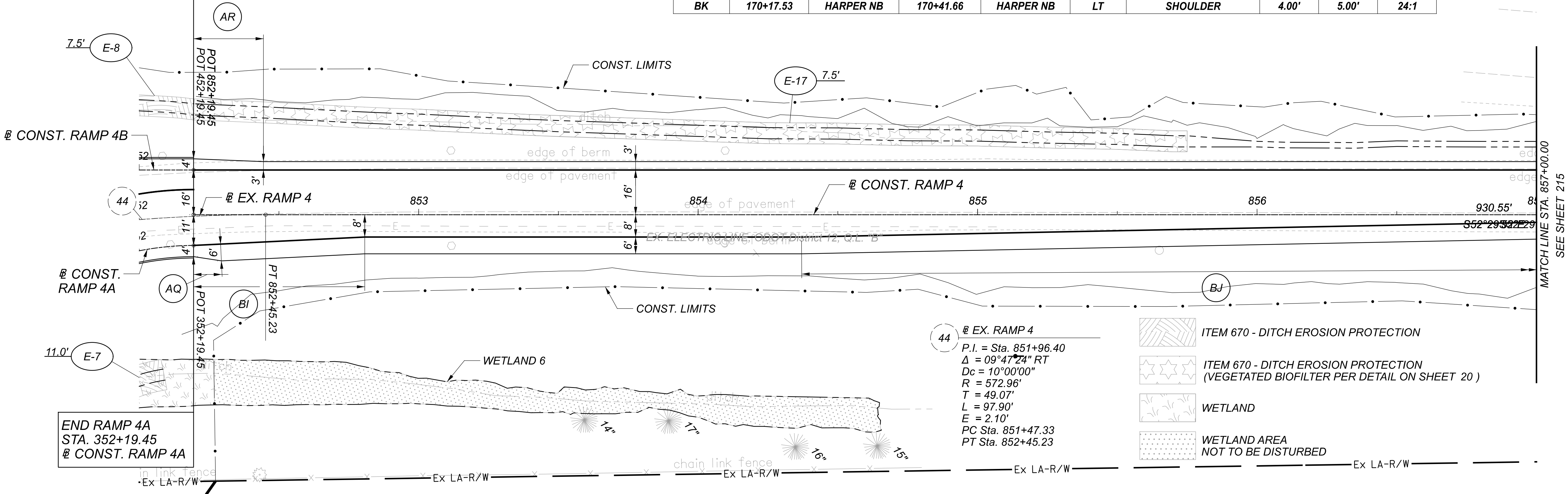
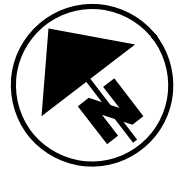
|              |
|--------------|
| REVIEWER     |
| CWL 09/02/21 |

|            |
|------------|
| PROJECT ID |
| 113889     |

|       |       |
|-------|-------|
| SHEET | TOTAL |
| 211   | 488   |

FOR RAMP 4A PLANS, SEE SHEETS 211 - 213  
FOR RAMP 4B PLANS, SEE SHEETS 211 - 212  
FOR UNDERDRAIN DETAILS, SEE SHEETS 367 - 368  
FOR ESTIMATED QUANTITIES, SEE SHEETS 170 - 181

| TAPER TABLE |                   |           |                |           |      |             |             |           |
|-------------|-------------------|-----------|----------------|-----------|------|-------------|-------------|-----------|
| TAPER CODE  | BEGINNING STATION |           | ENDING STATION |           | SIDE | DESCRIPTION | BEGIN WIDTH | END WIDTH |
| AR          | 852+19.45         | RAMP 4    | 852+44.45      | RAMP 4    | LT   | SHOULDER    | 4.00'       | 3.00'     |
| AS          | 653+50.00         | RAMP 3A   | 654+00.00      | RAMP 3A   | LT   | SHOULDER    | 6.00'       | 8.01'     |
| BJ          | 854+37.00         | RAMP 4    | 858+37.00      | RAMP 4    | RT   | PAVEMENT    | 8.00'       | 0.00'     |
| BK          | 170+17.53         | HARPER NB | 170+41.66      | HARPER NB | LT   | SHOULDER    | 4.00'       | 5.00'     |



PLAN AND PROFILE - RAMP 4  
BEGIN TO STA. 857+00.00

DESIGN AGENCY



DESIGNER

ATR

REVIEWER

CWL 02/22/22

PROJECT ID

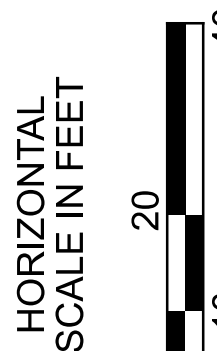
113889

SHEET

214

TOTAL

488





**US Army Corps of Engineers  
Huntington District**

Permit Number: 2023-00244-CUY

Name of Permittee: Ohio Department of Transportation

Date of Issuance: November 8, 2024

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