

DESIGN SPECIFICATIONS

NEW PORTIONS OF THIS STRUCTURE CONFORM TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, LRFD 8TH EDITION, AND THE 2020 ODOT BRIDGE DESIGN MANUAL.

ORIGINAL DESIGN LOADING

HS20-44 AND THE ALTERNATE MILITARY LOADING

DECK PROTECTION METHOD

SEALING OF CONCRETE DECK SURFACES WITH HMWM RESIN

EXISTING STRUCTURE VERIFICATION

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 & 105.02.

BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

EXISTING BRIDGE PLANS

EXISTING BRIDGE PLANS MAY BE INSPECTED IN THE OFFICE OF STRUCTURAL ENGINEERING IN COLUMBUS, OHIO OR AT THE ODOT DISTRICT EIGHT OFFICE IN LEBANON, OHIO.

GRANULAR MATERIAL, TYPE E

THE VOLUME OF GRANULAR MATERIAL, TYPE E PLACED TO PROVIDE A DRIVABLE SURFACE ON THE TEMPORARY ACCESS FILL SHALL BE INCLUDED WITH ITEM 530 - STRUCTURE MISC.: TEMPORARY CONSTRUCTION SITE ACCESS FOR PAYMENT.

MASONRY REPAIR

THIS WORK SHALL CONSIST OF EXCAVATING THE EXISTING STREMBED, PERFORMING FINAL GRADING AND RESTORATION OF MASONRY MORTAR AT THE GRE-US 68-9.57 BRIDGE TO THE LIMITS SHOWN IN THE PLANS.

THE CONTRACTOR SHALL ADHERE TO THE CMS AND THE STONE MASONRY RESTORATION AND REPAIR SPECIAL PROVISIONS. WHEN COMPLETED, REPAIRS SHALL MATCH THE APPEARANCE OF THE EXISTING MASONRY. PAYMENT FOR THE ABOVE WORK SHALL INCLUDE ALL EARTHWORK BELOW GRADE, MATERIAL, EQUIPMENT, LABOR, SURVEY AND ANY OTHER APPURTENANCES REQUIRED TO COMPLETE THE MASONRY REPAIRS.

THE FOLLOWING PAY ITEMS HAVE BEEN PROVIDED FOR THIS WORK:

- ITEM 602 - MASONRY MISC.: STONE MASONRY RESTORATION AND REPAIRS (S.F.)
- ITEM 602 - MASONRY MISC.: STONE MASONRY RESTORATION AND REPAIRS (C.Y. - FOR DEEP MORTAR REPAIRS)

CHANNEL SCOUR PREVENTION SYSTEM

THIS WORK SHALL CONSIST OF EXCAVATING THE EXISTING STREMBED, PERFORMING FINAL GRADING, PLACEMENT OF GEOTEXTILE FABRIC AND AGGREGATE BASE AS NEEDED AND INSTALLATION OF A CHANNEL LINER TYPE OF SCOUR PROTECTION UNDER THE GRE-US 68-9.57 BRIDGE AND BEYOND TO THE LIMITS SHOWN IN THE PLANS.

THE CONTRACTOR SHALL ADHERE TO THE CMS AND THE CHANNEL SCOUR PREVENTION SYSTEM SPECIAL PROVISIONS CONTAINING THE MANUFACTURER'S SPECIFICATIONS FOR MATERIAL QUALITY AND PROPER INSTALLATION OF THE CHANNEL LINER. WHEN COMPLETED, FLOW THROUGH THE CHANNEL SHALL BE POSITIVE AND UNIFORM ACROSS THE CHANNEL WIDTH.

THE FOLLOWING SCOUR PROTECTION SYSTEMS HAVE BEEN APPROVED FOR USE:

- RIPRAP TYPE D (6" THICK REINFORCED CONCRETE SLAB)
- ARTICULATED GROUT FILLED BLOCK AB600LL OR BETTER PRODUCT FROM SYNTHETEX

SYNTHETEX, LLC.
5550 TRIANGLE PARKWAY, SUITE 220
PEACHTREE CORNERS, GA 30092 USA
1-800-253-0561
770-399-5051

- 9" THICK GABION MATTRESS
2.5"x2.5" WELDED WIRE GALVANIZED MESH WITH ADDITIONAL PVC COATING AND 12 GAUGE MINIMUM WIRE THICKNESS PER SS 838
- ARMORFLEX CLASS 40 (OPEN) ARTICULATED CONCRETE BLOCK BY CONTECH
BLOCKS SHALL BE HAND PLACED BELOW THE BRIDGE AND CONNECTED TOGETHER WITH LONGITUDINAL CABLES AFTER PLACEMENT. MATTED BLOCK SECTIONS MAY BE USED OUTSIDE OF THE BRIDGE LIMITS.

CONTECH ENGINEERED SOLUTIONS
9025 CENTRE POINTE DRIVE
SUITE 400
WEST CHESTER TOWNSHIP, OHIO 45069

BARRIE KING, P.E.
AREA MANAGER - ARMORTEC NORTHEAST
(O) 513.645.7241
(M) 513.320.2010

PAYMENT FOR THE ABOVE WORK SHALL INCLUDE ALL EARTHWORK BELOW FINISHED CHANNEL GRADE, AGGREGATE BEDDING, GEOGRID, CHANNEL LINER MATERIAL, EQUIPMENT, LABOR, SURVEY AND ANY OTHER APPURTENANCES REQUIRED TO INSTALL A COMPLETED CHANNEL SCOUR PREVENTION SYSTEM.

THE FOLLOWING ALTERNATE PAY ITEMS HAVE BEEN PROVIDED FOR THIS WORK:

- ITEM 601 - RIPRAP, TYPE D
- ITEM 601 - ARTICULATING CONCRETE BLOCK REVETMENT SYSTEM, TYPE 1 (ALTERNATE 2 - ARMORFLEX BY CONTECH)
- ITEM 601 - ARTICULATING CONCRETE BLOCK REVETMENT SYSTEM, TYPE 1, AS PER PLAN (ALTERNATE 3 - SYTHETEX GROUT FILLED MATTRESS)
- ITEM 828 - GABIONS WITH ADDITIONAL COATING, AS PER PLAN (ALTERNATE 4 - GABION MATTRESS)

ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN (FOR BRIDGE No. GRE-US 68-0957)

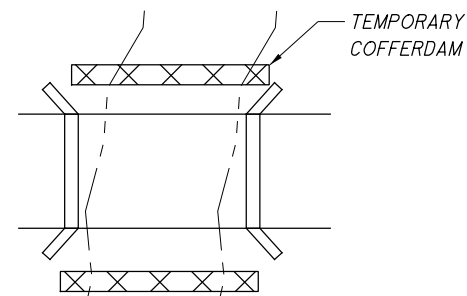
COFFERDAMS AND EXCAVATION BRACING INSTALLED FOR THE PROJECT ARE FOR DEWATERING THE WORK AREA. COFFERDAMS AND EXCAVATION BRACING DESIGN, CONSTRUCTION, AND REIMBURSEMENT FOR DAMAGE IS BASED ON CMS 503. THE CONTRACTOR MUST COMPLY WITH ALL IN-STREAM RESTRICTIONS LISTED IN THE SPECIAL PROVISIONS WATERWAY PERMIT. ADDING FILL TO OR EXCAVATING FROM THE STREAM TO DEWATER THE WORK AREA REQUIRES A TEMPORARY ACCESS FILL (TAF) SUBMISSION PER THE SPECIAL PROVISIONS. FILLING THE EXCAVATED AREA AFTERWARDS IS CONSIDERED A PERMANENT FILL AND MAY VIOLATE THE WATERWAY PERMIT'S THRESHOLDS OF IMPACTS.

IF THE CONTRACTOR WILL USE PUMPS TO DEWATER THE SITE, THEN THE CONTRACTOR WILL NEED TO SIZE THE PUMP(S) TO HANDLE TWICE THE HIGHEST MONTHLY FLOW WITHOUT PRODUCING A RISE IN THE BACKWATER ABOVE THE OHWM. ACCORDING TO STREAMSTATS, TWICE THE HIGHEST MONTHLY FLOW THAT NEEDS TO BYPASS THE DEWATERED WORK SITE IS 9.8 CFS.

IF THE CONTRACTOR CHOOSES TO IMPACT THE STREAM DURING THE MONTHS OF APRIL THROUGH OCTOBER: ALL REQUIREMENTS OF CMS 503 APPLY, UNLESS STIPULATED ELSEWHERE IN THIS NOTE. THE REHABILITATION WORK REQUIRED IN THE PLANS MUST BE COMPLETED IN SECTIONS. THE LONGEST SECTION THAT CAN BE COMPLETED AT ONE TIME IS 300 FEET. IF THE CONTRACTOR CHOOSES TO COMPLETE SECTIONS GREATER THAN 300 FEET AT A TIME, THEN THE DEPARTMENT WILL ONLY REIMBURSE THE CONTRACTOR FOR RESULTING DAMAGE TO 300 FEET OF WORK PROTECTED BY THE COFFERDAM, PROVIDED THE CONTRACTOR HAS EXERCISED DUE DILIGENCE AS DETERMINED BY THE ENGINEER.

IF THE CONTRACTOR CHOOSES TO IMPACT THE STREAM AT ANY TIME IN THE MONTHS OF NOVEMBER THROUGH MARCH: EVEN IF THE ACTUAL WATER ELEVATION EXCEEDS 3 FEET ABOVE THE STATED ORDINARY HIGH WATER MARK, THE DEPARTMENT WILL NOT REIMBURSE THE CONTRACTOR FOR RESULTING DAMAGE TO THE WORK PROTECTED BY THE COFFERDAM. ALL OTHER REQUIREMENTS OF CMS 503 APPLY.

ALL WORK ASSOCIATED WITH COFFERDAMS AND EXCAVATION BRACING, INCLUDING ALL REQUIREMENTS OF THE TAF SUBMISSION, SHALL BE PAID FOR WITH THE COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN PAY ITEM.



TEMPORARY COFFERDAM/STREAM DIVERSION DETAIL FOR BRIDGE
(NOT ACTUAL SITE LAYOUT)

PROPOSED WORK FOR BRIDGE No. GRE-US 68-0957

1. PROTECT THE ABUTMENTS FROM SCOUR USING ROCK CHANNEL PROTECTION ALONG WITH A RIP RAP CONCRETE SLAB, AN ARTICULATING BLOCK PRODUCT FROM SYNTHETEX, GABION MATTRESS OR ARMORFLEX BY CONTECH.
2. RESHAPE THE CHANNEL UNDER THE BRIDGE TO KEEP THE CHANNEL CENTERED UNDER THE BRIDGE. THE PROPOSED CHANNEL CROSS-SECTION SHALL NOT INCREASE THE 100 YEAR FLOOD.
3. SEAL THE DECK WITH HIGH MOLECULAR WEIGHT METHACRYLATE.
4. REPAIR DISTURBED GRASS AREAS USING ITEM 659 - SEEDING AND MULCHING CLASS 1.
5. REPOINT SPECIFIED AREAS WHERE MORTAR IS LOST PER THE STONE MASONRY RESTORATION AND REPAIR SPECIAL PROVISION.

REPOINT MORTAR UNDER THE 18" DIAMETER PIPE LOCATED THROUGH THE NORTH ABUTMENT SEAT UNDER THE WEST SIDEWALK FOR WIDTH OF 5 FEET BELOW THE OUTLET. (REPAIR AREA = 25 SF)



REPOINT MORTAR UNDER THE 18" DIAMETER PIPE LOCATED THROUGH THE SOUTH ABUTMENT SEAT UNDER THE EAST SIDEWALK FOR WIDTH OF 5 FEET BELOW THE OUTLET. (REPAIR AREA = 25 SF)



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DESIGN AGENCY
STATE OF OHIO
DEPT. OF TRANSPORTATION
DISTRICT 8 BRIDGE DEPT.

DATE
REVIEWED
STRUCTURE FILE NUMBER
2901447

DRAWN
CAH
CHECKED
REVISID

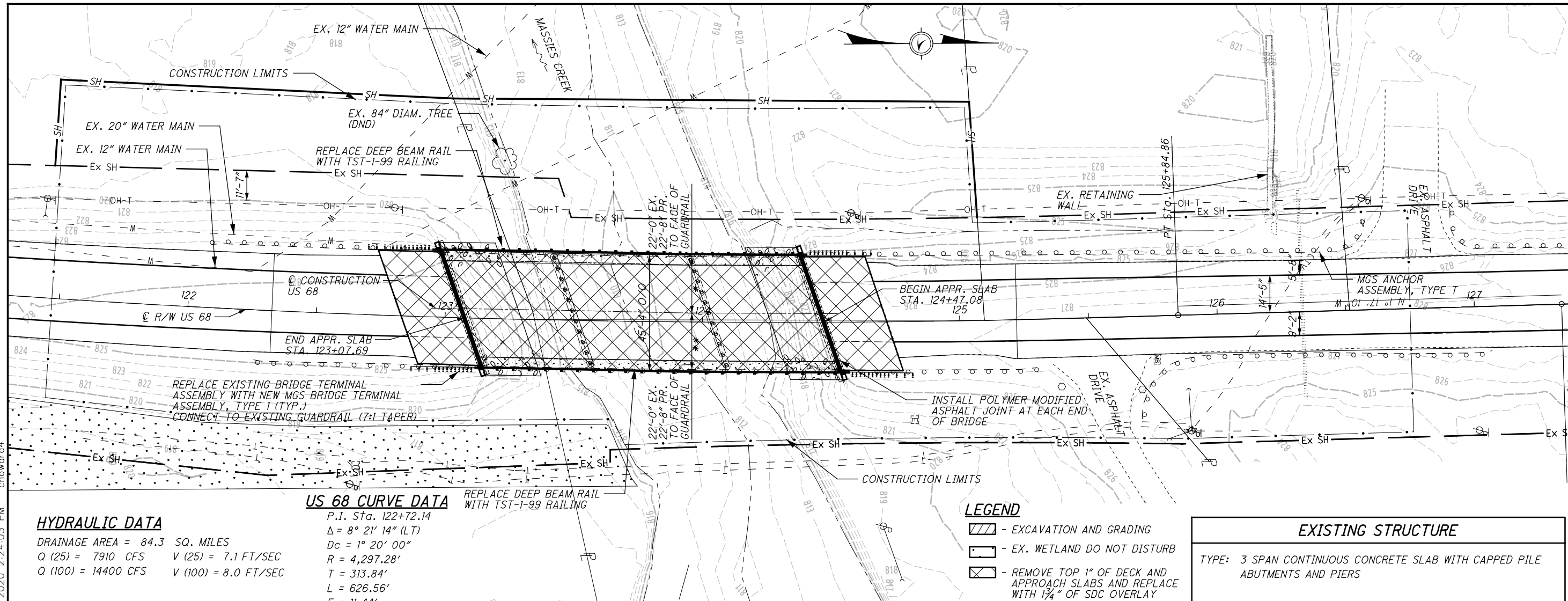
STRUCTURE NOTE -1
BRIDGE NO. GRE-US 68-0957
OVER SHAWNEE RUN

GRE-US 68-
9.57 / 13.35
PID No. 98510

3 / 6

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US 68 CURVE DATA

P.I. Sta. 122+72.14
 $\Delta = 8^\circ 21' 14''$ (LT)
 $D_c = 1^\circ 20' 00''$
 $R = 4,297.28'$
 $T = 313.84'$
 $L = 626.56'$
 $E = 11.44'$
 $e_{max} = 0.000$
 $C = 626.01'$
 C.B. = N 2° 30' 20" E

HYDRAULIC DATA

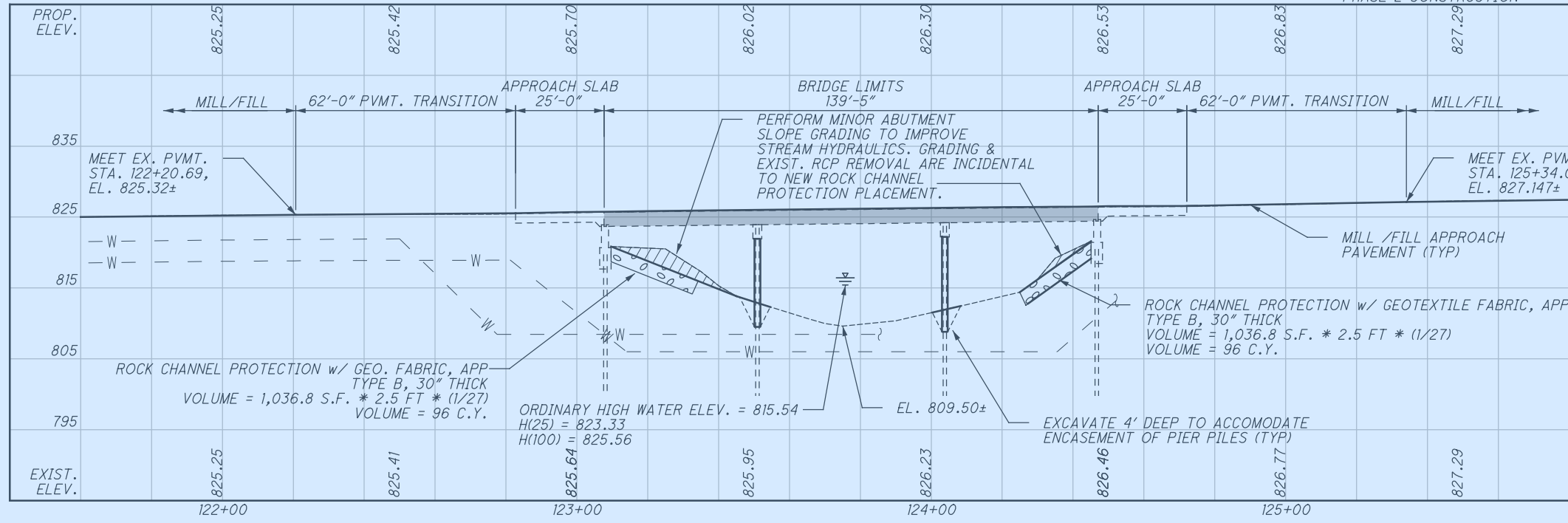
DRAINAGE AREA = 84.3 SQ. MILES
 $Q(25) = 7910$ CFS $V(25) = 7.1$ FT/SEC
 $Q(100) = 14400$ CFS $V(100) = 8.0$ FT/SEC

DESIGN TRAFFIC:

2019 ADT = 10,000 2019 ADTT = 800
 2031 ADT = 10,000 2031 ADTT = 800
 DIRECTIONAL DISTRIBUTION = 51%

LEGEND

- EXCAVATION AND GRADING
- EX. WETLAND DO NOT DISTURB
- REMOVE TOP 1" OF DECK AND APPROACH SLABS AND REPLACE WITH 1 3/4" OF SDC OVERLAY
- REPLACE 4' OF EXISTING DECK EDGES FULL DEPTH
- PHASE 1 CONSTRUCTION
- PHASE 2 CONSTRUCTION



PROFILE ALONG \hat{C} OF CONSTRUCTION US 68

EXISTING STRUCTURE

TYPE: 3 SPAN CONTINUOUS CONCRETE SLAB WITH CAPPED PILE ABUTMENTS AND PIERS

SPANS: 42'-52.5'-42' F/F OF ABUTMENT
 ROADWAY: 44' F/F GUARDRAIL
 LOADING: HS 20-44 AND THE ALTERNATE MILITARY LOADING
 SKEW: 20° RIGHT FORWARD
 APPROACH SLABS: AS-1-72 (25' LONG)
 ALIGNMENT: 1° 20' CURVE LEFT
 SUPERELEVATION: 0.031 FT/FT
 STRUCTURAL FILE NUMBER: 2901498
 DATE BUILT: 1982
 WEARING SURFACE: MONOLITHIC CONCRETE

PROPOSED STRUCTURE

TYPE: 3 SPAN CONTINUOUS CONCRETE SLAB WITH CAPPED PILE ABUTMENTS AND PIERS

SPANS: 42'-52.5'-42' F/F OF ABUTMENT
 ROADWAY: 45'-4" F/F RAILING
 LOADING: HS 20-H4 AND THE ALTERNATE MILITARY LOADING
 SKEW: 20° RIGHT FORWARD
 APPROACH SLABS: AS-1-72 (25' LONG)
 ALIGNMENT: 1° 20' CURVE LEFT
 SUPERELEVATION: 0.031 FT/FT
 WEARING SURFACE: 1.75" THICK SDC OVERLAY
 COORDINATES: LATITUDE 39° 44' 8"
 LONGITUDE 83° 56' 10"

SITE PLAN

BRIDGE NO. GRE-US 68-1340
 OVER MASSIES CREEK

DESIGN AGENCY: STATE OF OHIO DEPT. OF TRANSPORTATION DISTRICT 8 BRIDGE DEPT.
 DATE: _____
 REVIEWED: _____
 DRAWN: JAC
 CHECKED: CAH
 DESIGNED: JAC
 STRUCTURE FILE NUMBER: 2901498
 GREENE COUNTY
 STA. 123+07.69
 STA. 124+47.08

GRE-US 68-9.57 / 13.35
 PID No. 98510

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