

**ITEM 614, MAINTAINING TRAFFIC**

TRAFFIC SHALL BE MAINTAINED AT BOTH SITES USING A SIGNALIZED ONE LANE TWO-WAY OPERATION PER STANDARD CONSTRUCTION DRAWING MT-96.11.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLANS

**DRUM REQUIREMENTS**

IN ADDITION TO THE REQUIREMENTS OF THE PLANS, SPECIFICATION AND PROPOSAL, DRUMS FURNISHED BY THE CONTRACTOR SHALL BE NEW AND UNUSED AT THE TIME OF ARRIVAL ON THE PROJECT. ANY DRUMS BROUGHT ON THE PROJECT, WHICH HAVE PREVIOUSLY BEEN USED ELSEWHERE, WILL NOT BE ACCEPTED.

PAYMENT FOR DRUMS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR MAINTAINING TRAFFIC UNLESS SEPARATELY ITEMIZED.

**DUST CONTROL**

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616, WATER 2 M. GAL.

**ITEM 614, WORK ZONE IMPACT ATTENUATOR FOR 24" WIDE HAZARDS (UNIDIRECTIONAL OR BIDIRECTIONAL)**

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING A NON-GATING IMPACT ATTENUATOR. FURNISH AN IMPACT ATTENUATOR FROM THE OFFICE OF ROADWAY ENGINEERING'S APPROVED LIST FOR WORK ZONE IMPACT ATTENUATORS, FROM THE ROADWAY STANDARDS APPROVED PRODUCTS WEB PAGE.

INSTALLATION SHALL BE AT THE LOCATIONS SPECIFIED IN THE PLANS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE CONTRACTOR SHALL REPAIR OR REPLACE A DAMAGED UNIT WITHIN 24 HOURS OF A DAMAGING IMPACT.

WHEN BIDIRECTIONAL DESIGNS ARE SPECIFIED, THE CONTRACTOR SHALL SUPPLY APPROPRIATE TRANSITIONS.

WHEN GATING IMPACT ATTENUATORS ARE DESIRED, THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER FOR ACCEPTANCE.

THE COST FOR THE ADDITIONAL BARRIER REQUIRED FOR A GATING IMPACT ATTENUATOR SHALL BE INCLUDED IN THE COST OF THE GATING IMPACT ATTENUATOR.

PAYMENT FOR THE ABOVE WORK SHALL BE MADE AT THE UNIT PRICE BID AND SHALL INCLUDE ALL LABOR, TOOLS, EQUIPMENT AND MATERIALS NECESSARY TO CONSTRUCT AND MAINTAIN A COMPLETE AND FUNCTIONAL IMPACT ATTENUATOR SYSTEM, INCLUDING ALL RELATED BACKUPS, TRANSITIONS, LEVELING PADS, HARDWARE AND GRADING, NOT SEPARATELY SPECIFIED, AS REQUIRED BY THE MANUFACTURER.

**FULLY-ACTUATED OPERATION OF WORK ZONE TRAFFIC SIGNAL**

THE WORK ZONE SIGNAL CONTROL REQUIRED FOR THIS PROJECT AND SHOWN ON SHEET P.8 AND TRAFFIC SCDS MT-96.11, 96.20 AND 96.26 SHALL BE FULLY TRAFFIC-ACTUATED AND OPERATE IN A MANNER SIMILAR TO THAT DESCRIBED IN SECTION 733.02 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS.

THE INITIAL CONTROLLER TIMING SHALL BE AS SHOWN BELOW.<sup>Δ</sup>

PROVIDE TIMING APPROPRIATE FOR THE SIGNAL LOCATION UNDER CONSIDERATION. TYPICAL FLOW RATES ARE DISPLAYED IN TABLE 697-2 IN THE ODOT TRAFFIC ENGINEERING MANUAL (TEM).

THE CONTRACTOR SHALL PROVIDE SIGNAL PHASING AS PER TRAFFIC SCD MT-96.20, "DETAIL 'B' - TYPICAL SIGNAL PHASING".

THE CONTRACTOR SHALL ALSO DESIGN, FURNISH, INSTALL AND MAINTAIN A TRAFFIC DETECTOR ON EACH TRAFFIC APPROACH WHICH WILL RELIABLY DETECT ALL LEGAL TRAFFIC APPROACHING (BUT NOT LEAVING) THE SIGNAL AS IT PASSES OR WAITS IN THE DESIGNATED DETECTOR ZONE SHOWN IN THE PLANS. DETECTOR DESIGNS WHICH DO NOT PROVIDE RELIABLE DETECTION, FREE FROM FALSE CALLS, SHALL BE IMMEDIATELY REPLACED BY THE CONTRACTOR.

**OVERHEAD-MOUNTED WORK ZONE SIGNALS**

SIGNALS SHALL BE OVERHEAD MOUNTED IN ACCORDANCE WITH THE DETAILS SHOWN ON TRAFFIC SCD MT-96.20.

**DELINEATION OF PORTABLE AND PERMANENT BARRIER**

BARRIER REFLECTORS AND OBJECT MARKERS SHALL BE INSTALLED ON ALL PORTABLE BARRIER (PB) USED FOR TRAFFIC CONTROL; AND, ON PERMANENT CONCRETE BARRIER (INCLUDING BRIDGE PARAPETS) LOCATED WITHIN 5 FEET OF THE EDGE OF THE ADJACENT TRAVEL LANE.

BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THE SPACING SHALL BE AS PER TRAFFIC SCD MT-101.70. OBJECT MARKERS AND THEIR INSTALLATION SHALL CONFORM TO C&MS 614.03 AND SCD MT-101.70. WHEN THE PB CONTAINS GLARE SCREEN, ONE SET OF THREE VERTICAL STRIPES OF SHEETING SHALL BE CONSIDERED EQUIVALENT TO AN OBJECT MARKER, ONE-WAY.

INCREASED BARRIER DELINEATION, AS SPECIFIED HEREIN, SHALL BE INSTALLED ON ALL PB AND PERMANENT CONCRETE BARRIER LOCATED WITHIN 5 FEET OF THE EDGE OF THE TRAVELED LANE UNDER EITHER OF THE FOLLOWING CONDITIONS: ALONG TAPERS AND TRANSITION AREAS; OR ALONG CURVES (OUTSIDE ONLY) WITH DEGREE OF CURVATURE GREATER THAN OR EQUAL TO 3 DEGREES.

THE INCREASED BARRIER DELINEATION SHALL CONSIST OF EITHER DELINEATION PANELS OR THE TRIPLE STACKING OF WORK ZONE BARRIER REFLECTORS.

DELINEATION PANELS SHALL CONSIST OF PANELS OF DELINEATION, APPROXIMATELY 34 INCHES LONG AND 6 INCHES WIDE AND SHALL BE "CRIMPED." PANELS SHALL BE INSTALLED AND SPACED PER TRAFFIC SCD MT-101.70.

TRIPLE-STACKED BARRIER REFLECTORS SHALL CONSIST OF ALIGNING THREE BARRIER REFLECTORS VERTICALLY, AT LOCATIONS WHERE A SINGLE BARRIER REFLECTOR WOULD BE OTHERWISE ATTACHED. THERE SHALL BE NO OPEN SPACE BETWEEN THE ADJACENT BARRIER REFLECTORS. THE TRIPLE-STACKED BARRIER REFLECTORS SHALL CONFORM TO C&MS 626, EXCEPT THAT THEY SHALL BE SPACED AND ALIGNED PER TRAFFIC SCD MT-101.70.

ESTIMATED QUANTITIES FOR PORTABLE AND PERMANENT BARRIER ARE INCLUDED IN THE MAINTENANCE OF TRAFFIC SUBSUMMARY AND CARRIED TO THE GENERAL SUMMARY.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL MATERIAL, LABOR, INCIDENTALS AND EQUIPMENT NECESSARY FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING EACH OF THE ABOVE ITEMS.

ALONG RUNS OF INCREASED BARRIER DELINEATION WHERE THIS ITEM IS PROVIDED, THE QUANTITY SHALL BE MEASURED AS THE ENTIRE LENGTH OF THE RUN OF INCREASED BARRIER DELINEATION, INCLUDING THE SPACES BETWEEN THE INDIVIDUAL DELINEATION PANELS OR STACKS OF BARRIER REFLECTORS.

**EARTHWORK FOR MAINTAINING TRAFFIC**

THE FOLLOWING QUANTITIES HAVE BEEN INCLUDED IN THE PLAN FOR INFORMATION ONLY.

EXCAVATION FOR MAINTAINING TRAFFIC 151 CU. YD.  
 EMBANKMENT FOR MAINTAINING TRAFFIC 166 CU. YD.

| ADDENDUM NO. | DATE    | REV. BY | DESCRIPTION               |
|--------------|---------|---------|---------------------------|
| 2            | 1-28-25 | ARA     | PREBID QUESTION REVISIONS |

**Δ INITIAL CONTROLLER TIMING**

|                        | PHASE                            |                     |                                  |                     |                                  |                       |                                  |                       |                                  |                        |                                   |                        |                                   |                        |
|------------------------|----------------------------------|---------------------|----------------------------------|---------------------|----------------------------------|-----------------------|----------------------------------|-----------------------|----------------------------------|------------------------|-----------------------------------|------------------------|-----------------------------------|------------------------|
|                        | 1<br>(ALL RED)<br>DUMMY<br>PHASE | 2<br>MAINLINE<br>NB | 3<br>(ALL RED)<br>DUMMY<br>PHASE | 4<br>MAINLINE<br>SB | 5<br>(ALL RED)<br>DUMMY<br>PHASE | 6<br>SIDE<br>APPROACH | 7<br>(ALL RED)<br>DUMMY<br>PHASE | 8<br>SIDE<br>APPROACH | 9<br>(ALL RED)<br>DUMMY<br>PHASE | 10<br>SIDE<br>APPROACH | 11<br>(ALL RED)<br>DUMMY<br>PHASE | 12<br>SIDE<br>APPROACH | 13<br>(ALL RED)<br>DUMMY<br>PHASE | 14<br>SIDE<br>APPROACH |
| MIN.GREEN<br>EXTENSION |                                  | 10                  |                                  | 10                  |                                  | 7                     |                                  | 7                     |                                  | 7                      |                                   | 7                      |                                   | 7                      |
| MAX.GREEN              |                                  | 4                   |                                  | 4                   |                                  | 4                     |                                  | 4                     |                                  | 4                      |                                   | 4                      |                                   | 4                      |
| YELLOW                 |                                  | 30                  |                                  | 30                  |                                  | 30                    |                                  | 30                    |                                  | 30                     |                                   | 30                     |                                   | 30                     |
| ALL RED<br>RECALL      | X<br>ON                          | 3.5<br>OFF          | X<br>OFF                         | 3.5<br>OFF          | X<br>OFF                         | 3<br>OFF              | X<br>OFF                         | 3<br>OFF              | X<br>OFF                         | 3<br>OFF               | X<br>OFF                          | 3<br>OFF               | X<br>OFF                          | 3<br>OFF               |

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**DESIGN SPECIFICATIONS**

THIS STANDARD DRAWING CONFORMS TO "LRFD BRIDGE DESIGN SPECIFICATION" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND THE BRIDGE DESIGN MANUAL.

**DESIGN DATA**

THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL,  $\phi_{br} = 30^\circ$   
 TOTAL UNIT WEIGHT OF BACKFILL SOIL = 120 PCF  
 INTERNAL ANGLE OF FRICTION (DRAINED), FOUNDATION SOIL,  $\phi_r = 28^\circ$   
 UNDRAINED SHEAR STRENGTH (COHESIVE), FOUNDATION SOIL,  $S_{ur} = 1500$  PSF  
 UNIT WEIGHT OF CONCRETE = 150 PCF  
 SLOPE OF BACKFILL = 2:1 (TYPE A & B HEADWALLS)  
 HEIGHT OF LIVE LOAD SURCHARGE = 2 FT (TYPE C HEADWALLS)

CONCRETE - COMPRESSIVE STRENGTH 4000 PSI  
 (FOOTING, WINGWALL AND FORESLOPE WALL)

REINFORCING STEEL - ASTM A615, A616, OR A617  
 GRADE 60 MINIMUM YIELD STRENGTH  
 60,000 PSI (ALL REINFORCING SHALL BE EPOXY COATED)

BASED ON THE ASSUMED DESIGN DATA, THE WINGWALLS ACHIEVE FACTORED BEARING RESISTANCES THAT ARE GREATER THAN THEIR RESPECTIVE BEARING PRESSURES. IF A BACKFILL MATERIAL WITH A HIGHER INTERNAL ANGLE OF FRICTION OR A LIGHTER TOTAL UNIT WEIGHT IS USED; OR IF A FOUNDATION SOIL WITH A HIGHER DRAINED INTERNAL ANGLE OF FRICTION OR A HIGHER UNDRAINED SHEAR STRENGTH IS ENCOUNTERED; THEN THE STABILITY OF THE WINGWALLS IS SATISFACTORY.

**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 C&MS SECTIONS 102.05 AND 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.

**POROUS BACKFILL WITH FILTER FABRIC**

POROUS BACKFILL WITH FILTER FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

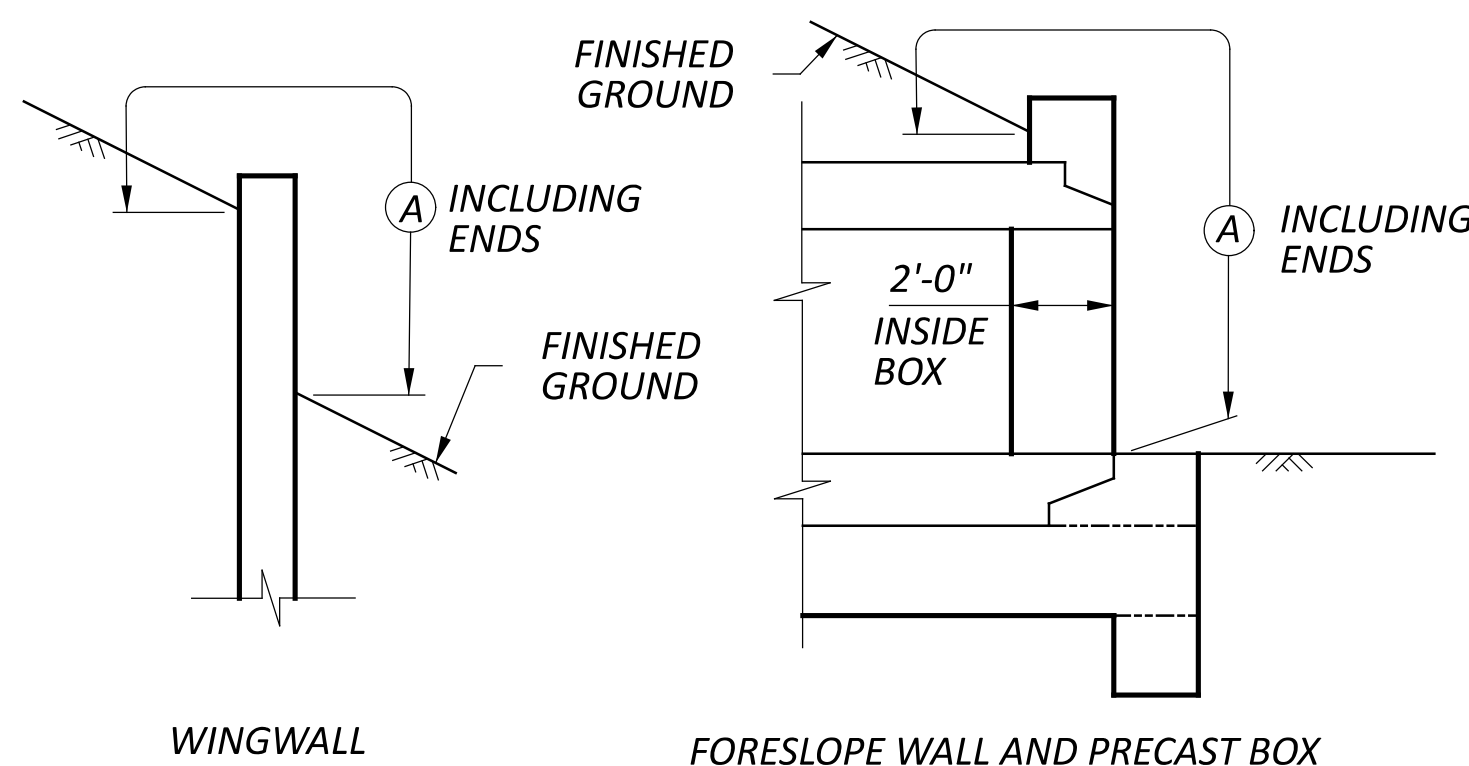
WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

**PREFORMED EXPANSION JOINT FILLER**

PREFORMED EXPANSION JOINT FILLER (PEJF) CONFORMING TO CMS 705.03, 1 INCH THICK, SHALL BE PLACED ABOVE THE FOOTING BETWEEN THE SIDES OF THE BOX CULVERT AND THE ENDS OF THE WINGWALLS. PAYMENT FOR MATERIALS AND INSTALLATION SHALL BE INCLUDED WITH ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER.

**SEALING OF FORESLOPE WALL AND WINGWALLS**

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.



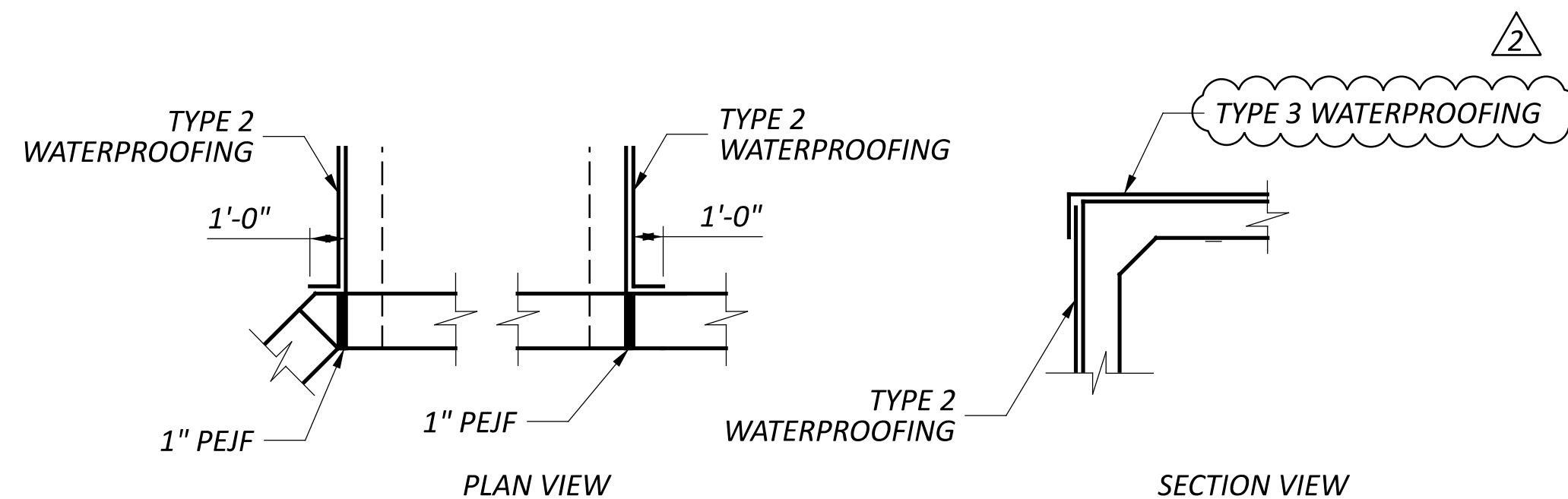
**LIMITS OF ITEM 512-SEALING CONCRETE SURFACES**

(A) - SEAL ENTIRE CONCRETE SURFACE AREA

**WATERPROOFING**

TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

TYPE 3 WATERPROOFING, PER CMS 512.10 AND 711.29 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 3 WATERPROOFING.



**WATERPROOFING DETAILS**

BASIS OF PAYMENT: ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT THE FOOTING, CUTOFF WALL, WINGWALLS AND FORESLOPE WALL SHALL BE INCLUDED WITH ITEM 511 - CLASS QC1 CONCRETE, RETAINING WALL/ WINGWALL- NOT INCLUDING FOOTING, ITEM 511 - CLASS QC1 CONCRETE, FOOTING, AND ITEM 511 - CLASS QC1 CONCRETE, HEADWALLS PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.

**ITEM 203 - EXCAVATION, AS PER PLAN**

PROVIDE A FIRM BED FOR THE FULL WIDTH AND LENGTH OF THE CONDUIT, HEADWALL OR WINGWALL. REMOVE FOUNDATION SOILS FOR THE ENTIRE WIDTH PLUS 2 FEET IN EACH DIRECTION AND LENGTH OF THE CONDUIT, HEADWALL OR WINGWALL AND TO MINIMUM ELEVATION 1147.80 FEET OR AS DIRECTED BY THE ENGINEER. THE QUANTITY SHALL BE MEASURED FROM BELOW THE BOTTOM OF THE NORMAL BEDDING TO THE DEPTH AND WIDTH AS DIRECTED BY THE ENGINEER. THE LIMITS SHOULD EXTEND AT LEAST 2 FEET BEYOND THE PROPOSED WINGWALL SLAB PERIMETER. MATERIAL THAT IS EXCAVATED SHALL BE REMOVED FROM THE SITE OF THE WORK AND REPLACED WITH ITEM 203 - GRANULAR MATERIAL, TYPE B. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY. FINAL PAYMENT SHALL BE BASED ON THE ENGINEER'S MEASUREMENT.

ITEM 203 - EXCAVATION, AS PER PLAN 100 CY  
 ITEM 203 - GRANULAR MATERIAL, TYPE B 100 CY

**ITEM 203 - GRANULAR MATERIAL, TYPE B**

THIS ITEM SHALL CONSIST OF PROVIDING A COMPACTED BEDDING MATERIAL MEETING THE GRADATION OF ITEM 304 AND COMPACTED TO 100% OF THE STANDARD PROCTOR DRY DENSITY OF THE MATERIAL IN AREAS THAT ARE OVER EXCAVATED FOR THE REMOVAL OF UNSTABLE OR UNSUITABLE MATERIAL BELOW THE NORMAL CONDUIT, HEADWALL OR WINGWALL BEDDING ELEVATION, AS DIRECTED BY THE ENGINEER. PLACE AND COMPACT THE STRUCTURAL BACKFILL IN ACCORDANCE WITH ITEM 203. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE GENERAL SUMMARY AND IS INTENDED ONLY AS AN ALLOWANCE IN THE EVENT UNSTABLE OR UNSUITABLE MATERIAL IS ENCOUNTERED. FINAL PAYMENT SHALL BE BASED ON THE ENGINEER'S FINAL MEASUREMENT.

ITEM 203 - GRANULAR MATERIAL, TYPE B 100 CY

**ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN**

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING. THE DEPARTMENT WILL NOT MAKE ADDITIONAL PAYMENT FOR PROVIDING AN ALTERNATE DESIGN.

| ADDENDUM NO. | DATE    | REV. BY | DESCRIPTION               |
|--------------|---------|---------|---------------------------|
| 2            | 1-28-25 | ARA     | PREBID QUESTION REVISIONS |

GENERAL NOTES  
 BRIDGE NO. GEA-322-0863  
 OVER BEAVER CREEK

SFN 2801389

DESIGN AGENCY



DESIGNER: CJK  
 CHECKER: ARA

REVIEWER: MDP 09/30/24

PROJECT ID: 115876

SUBSET: 2 TOTAL: 8

SHEET: P.33 TOTAL: 69

**ITEM 611 - 14' X 5' CONDUIT, TYPE A, 706.05, AS PER PLAN**

THIS ITEM CONSIST OF REPLACING THE EXISTING STRUCTURE WITH 14' X 5' PRECAST CONCRETE CULVERT STRUCTURE. ALL APPLICABLE REQUIREMENTS OF CMS 611 AND CMS 706.05 AND ASTM C1577 SHALL BE MET EXCEPT AS DETAILED IN THE PLANS AND/OR NOTED HEREIN.

DESIGN OF THE PRECAST REINFORCED CONCRETE SECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURE SHALL BE DESIGNED FOR HL-93 LOADING AND ALL OTHER APPLICABLE PROVISIONS OF THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL 2020.

THE WALL AND SLAB THICKNESS ON THE PLANS WERE OBTAINED FROM THE DESIGN DATA SHEET AT THE TIME THE PLANS WERE PREPARED. IF THE WALL AND/OR TOP SLAB THICKNESS OF THE CULVERT PROPOSED ARE DIFFERENT FROM WHAT IS SHOWN ON THE PLANS, A MARKED COPY OF THE PROJECT PLANS, INCLUDING ALL PLAN NOTES AND DETAILS SHOWING ITEMS AFFECTED BY THE DIFFERENT CULVERT DIMENSIONS, SHALL BE SUBMITTED FOR APPROVAL WITH THE SHOP DRAWINGS. ALL WORK REQUIRED TO ACCOMMODATE ANY REVISED DIMENSIONS SHALL BE AT NO ADDITIONAL COST TO THE DEPARTMENT.

AS THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE PRECAST SECTIONS, THE CONTRACTOR OR THE CONTRACTOR'S FABRICATOR SHALL PERFORM A LOAD RATING OF THE PROPOSED STRUCTURE USING BRASS-CULVERT SOFTWARE. ALL OHIO LEGAL LOADS ARE TO BE RATED, INCLUDING EV2 AND EV3. A BR-100 LOAD RATING SUMMARY REPORT, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OHIO, ALONG WITH ASSOCIATED INPUT FILES SHALL ALSO BE SUBMITTED TO THE ENGINEER.

FOR THE PURPOSES OF LOAD RATING, THE DEPTH OF COVER SHALL BE CONSIDERED TO BE 1.94 FEET.

TWO (2) HARD COPIES AND ONE (1) ELECTRONIC COPY OF THE SHOP DRAWINGS INCLUDING ALL ASSOCIATED DESIGN CALCULATIONS FOR REBAR SIZE, SPACING CLEARANCE, CONCRETE THICKNESS, ETC., MUST BE SUBMITTED TO THE ENGINEER FOR ACCEPTANCE. ALL SHOP DRAWINGS AND SUPPORTING CALCULATIONS MUST BEAR THE SIGNATURE AND SEAL OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF OHIO PER CMS 611.04.A. MANUFACTURING OF THE PRECAST SECTIONS SHALL NOT BEGIN UNTIL AFTER WRITTEN ACCEPTANCE OF THE SHOP DRAWINGS HAS BEEN RECEIVED FROM THE ENGINEER.

THE CONTRACTOR MUST SUBMIT AN INSTALLATION PLAN TO THE ENGINEER FOR ACCEPTANCE PER CMS 611.04.B. IN ADDITION TO THE REQUIRED INFORMATION LISTED IN THIS SPECIFICATION, THE CONTRACTOR MUST INCLUDE INFORMATION IN REGARD TO SUPPORTING AND MAINTAINING ALL EXISTING UTILITIES DESIGNATED TO REMAIN IN PLACE AND POSSIBLY EXPOSED AS A RESULT OF REMOVING THE EXISTING STRUCTURE AND EXCAVATING FOR PLACEMENT OF THE PROPOSED STRUCTURE.

STRUCTURAL BACKFILL (703.11) AND GRANULAR EMBANKMENT (703.16.B AND 703.16.C) MATERIALS FURNISHED FOR BEDDING AND BACKFILL OPERATIONS SHALL BE LIMITED TO LIMESTONE. THE USE OF SLAG OR LSM MATERIALS IS PROHIBITED. PER 611.06, ALL BEDDING AND BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS DESCRIBED IN THE ACCEPTED INSTALLATION PLAN.

PLACE AND JOIN ALL PRECAST CONCRETE SECTIONS PER 611.07, 611.08 AND AS DESCRIBED IN THE ACCEPTED INSTALLATION PLAN. JOINTS BETWEEN ADJACENT PRECAST CONCRETE SECTIONS SHALL BE TREATED PER THE APPROPRIATE METHOD DESCRIBED IN 611.08.B.3 FOR THE TYPE OF SECTIONS BEING JOINED. JOINT WRAP PRIMER MATERIAL SHALL ONLY BE APPLIED AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY PLACED AND JOINED IN THE FIELD.

AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY JOINED, APPLY TYPE 2 OR TYPE 3 MEMBRANE WATERPROOFING TO ALL EXTERNAL SURFACES OF THE PRECAST CONCRETE BOX SECTIONS AS PER 611.09 AND AS DETAILED IN THE PLANS. PRIMER REQUIRED FOR THE MEMBRANE MATERIAL SHALL ONLY BE APPLIED AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY PLACED AND JOINED IN THE FIELD.

**LEGEND**

- C.J. CONSTRUCTION JOINT
- CL CENTER LINE
- CONC. CONCRETE
- DIA. DIAMETER
- EXTEN. EXTENSION
- E.F. EACH FACE
- F.F. FRONT FACE
- MAX. MAXIMUM
- MIN. MINIMUM
- B.F. BACK FACE
- PEJF PREFORMED EXPANSION JOINT FILLER
- QTY. QUANTITY
- REINF. REINFORCING
- SER. SERIES
- SHT. SHEET
- T&B TOP AND BOTTOM
- TYP. TYPICAL
- ELEV. ELEVATION

| FUNDING   | ESTIMATED QUANTITIES |          |       |      | DESCRIPTION                                                   | CALCULATED: TDB 9/18/2024<br>CHECKED: ARA 9/21/2024 | REF. SHT. |
|-----------|----------------------|----------|-------|------|---------------------------------------------------------------|-----------------------------------------------------|-----------|
|           | ITEM                 | ITEM EXT | TOTAL | UNIT |                                                               |                                                     |           |
| 01/NFP/10 |                      |          |       |      |                                                               |                                                     |           |
| LS        | 202                  | 11000    | LS    |      | STRUCTURE REMOVED                                             |                                                     |           |
| 100       | 203                  | 10001    | 100   | CY   | EXCAVATION, AS PER PLAN                                       |                                                     | 33/48     |
| 100       | 203                  | 35110    | 100   | CY   | GRANULAR MATERIAL, TYPE B                                     |                                                     | 33/48     |
| LS        | 503                  | 11101    | LS    |      | COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN                |                                                     | 33/48     |
| 5413      | 509                  | 10000    | 5413  | LB   | EPOXY COATED STEEL REINFORCEMENT                              |                                                     |           |
| 17        | 511                  | 46010    | 17    | CY   | CLASS QC1 CONCRETE, RETAINING/WINGWALL, NOT INCLUDING FOOTING |                                                     |           |
| 47        | 511                  | 46510    | 47    | CY   | CLASS QC1 CONCRETE, FOOTING                                   |                                                     |           |
| 2         | 511                  | 46610    | 2     | CY   | CLASS QC1 CONCRETE, HEADWALL                                  |                                                     |           |
| 55        | 512                  | 10100    | 55    | SY   | SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)                 |                                                     |           |
| 82        | 512                  | 33000    | 82    | SY   | TYPE 2 WATERPROOFING                                          |                                                     |           |
| 90        | 512                  | 33010    | 90    | SY   | TYPE 3 WATERPROOFING                                          |                                                     |           |
| 32        | 516                  | 13600    | 32    | SF   | 1" PREFORMED EXPANSION JOINT FILLER                           |                                                     |           |
| 21        | 518                  | 21200    | 21    | CY   | POROUS BACKFILL WITH GEOTEXTILE FABRIC                        |                                                     |           |
| 47        | 601                  | 32104    | 47    | CY   | ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC        |                                                     |           |
| 51        | 611                  | 96311    | 51    | FT   | 14' X 5' CONDUIT, TYPE A, 706.05, AS PER PLAN                 |                                                     | 34/48     |

| ADDENDUM NO. | DATE    | REV. BY | DESCRIPTION               |
|--------------|---------|---------|---------------------------|
| 2            | 1-28-25 | ARA     | PREBID QUESTION REVISIONS |

**GENERAL NOTES AND ESTIMATED QUANTITIES**  
**BRIDGE NO. GEA-322-0863**  
**OVER BEAVER CREEK**

SFN  
2801389  
DESIGN AGENCY

**DLZ**  
ARCHITECTURE-ENGINEERING-PLANNING  
SURVEYING-CONSTRUCTION SERVICES

|              |      |         |     |
|--------------|------|---------|-----|
| DESIGNER     | CJK  | CHECKER | ARA |
| REVIEWER     |      |         |     |
| MDP 09/30/24 |      |         |     |
| PROJECT ID   |      |         |     |
| 115876       |      |         |     |
| SUBSET       | 3    | TOTAL   | 8   |
| SHEET        | P.34 | TOTAL   | 69  |

**DESIGN SPECIFICATIONS**

THIS STANDARD DRAWING CONFORMS TO "LRFD BRIDGE DESIGN SPECIFICATION" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS AND THE BRIDGE DESIGN MANUAL.

**DESIGN DATA**

THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL,  $\phi_{br} = 30^\circ$   
 TOTAL UNIT WEIGHT OF BACKFILL SOIL = 120 PCF  
 INTERNAL ANGLE OF FRICTION (DRAINED), FOUNDATION SOIL,  $\phi_f = 28^\circ$   
 UNDRAINED SHEAR STRENGTH (COHESIVE), FOUNDATION SOIL,  $S_{uf} = 1500$  PSF  
 UNIT WEIGHT OF CONCRETE = 150 PCF  
 SLOPE OF BACKFILL = 2:1 (TYPE A & B HEADWALLS)  
 HEIGHT OF LIVE LOAD SURCHARGE = 2 FT (TYPE C HEADWALLS)

CONCRETE - COMPRESSIVE STRENGTH 4000 PSI (FOOTING, WINGWALL AND FORESLOPE WALL)

REINFORCING STEEL - ASTM A615, A616, OR A617  
 GRADE 60 MINIMUM YIELD STRENGTH 60,000 PSI (ALL REINFORCING SHALL BE EPOXY COATED)

BASED ON THE ASSUMED DESIGN DATA, THE WINGWALLS ACHIEVE FACTORED BEARING RESISTANCES THAT ARE GREATER THAN THEIR RESPECTIVE BEARING PRESSURES. IF A BACKFILL MATERIAL WITH A HIGHER INTERNAL ANGLE OF FRICTION OR A LIGHTER TOTAL UNIT WEIGHT IS USED; OR IF A FOUNDATION SOIL WITH A HIGHER DRAINED INTERNAL ANGLE OF FRICTION OR A HIGHER UNDRAINED SHEAR STRENGTH IS ENCOUNTERED; THEN THE STABILITY OF THE WINGWALLS IS SATISFACTORY.

**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 C&MS SECTIONS 102.05 AND 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.

**POROUS BACKFILL WITH FILTER FABRIC**

POROUS BACKFILL WITH FILTER FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE POROUS BACKFILL AND RETURN 6" ABOVE THE TOP ELEVATION OF THE WEEPHOLE.

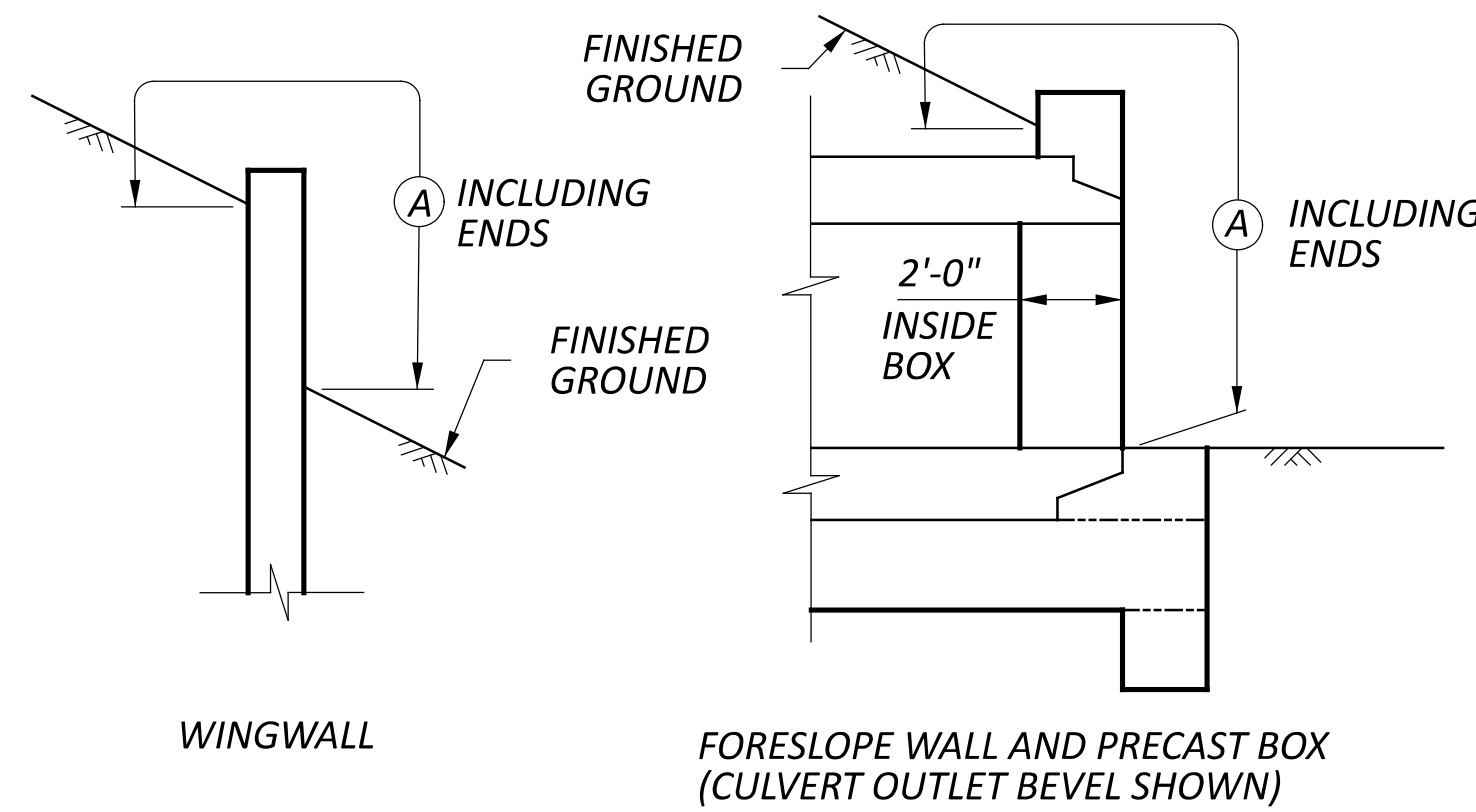
WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

**PREFORMED EXPANSION JOINT FILLER**

PREFORMED EXPANSION JOINT FILLER (PEJF) CONFORMING TO CMS 705.03, 1 INCH THICK, SHALL BE PLACED ABOVE THE FOOTING BETWEEN THE SIDES OF THE BOX CULVERT AND THE ENDS OF THE WINGWALLS. PAYMENT FOR MATERIALS AND INSTALLATION SHALL BE INCLUDED WITH ITEM 516 - 1" PREFORMED EXPANSION JOINT FILLER.

**SEALING OF FORESLOPE WALL AND WINGWALLS**

ALL EXPOSED FORESLOPE WALL AND WINGWALL CONCRETE SHALL BE SEALED WITH EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE EPOXY-URETHANE SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.



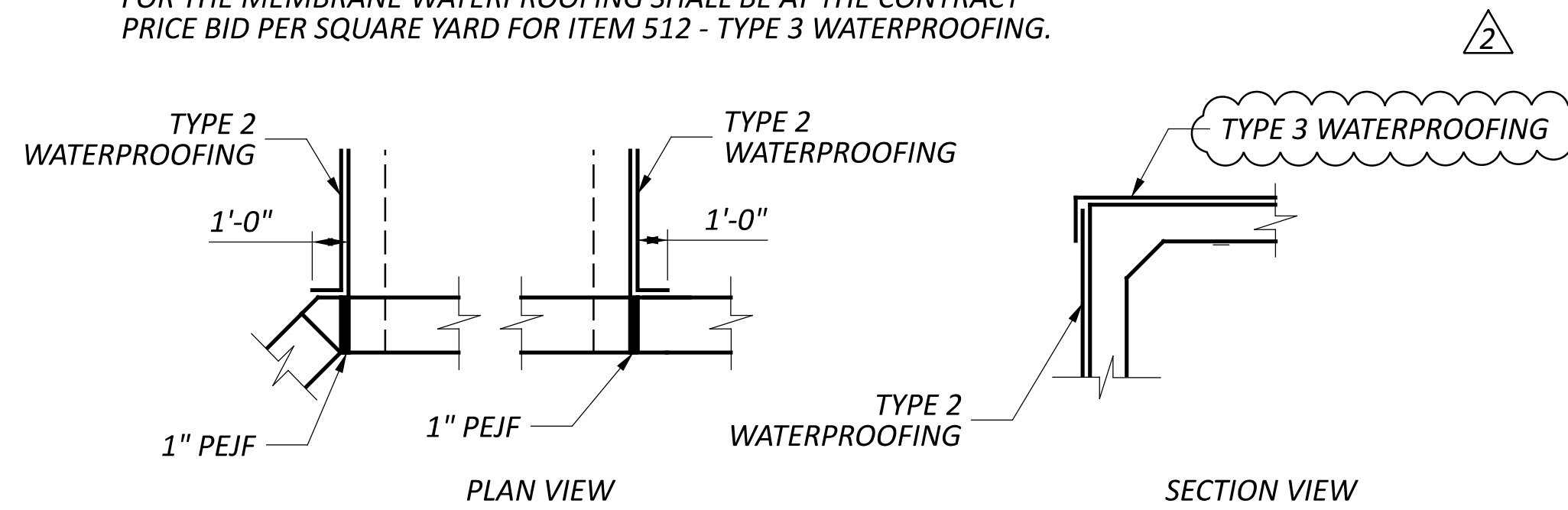
**LIMITS OF ITEM 512-SEALING CONCRETE SURFACES**

(A) - SEAL ENTIRE CONCRETE SURFACE AREA

**WATERPROOFING**

TYPE 2 WATERPROOFING, PER CMS 512.09 AND 711.25, SHALL EXTEND VERTICALLY DOWN THE ENTIRE SIDES OF THE PRECAST CULVERT SECTIONS FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 2 WATERPROOFING.

TYPE 3 WATERPROOFING, PER CMS 512.10 AND 711.29 SHALL BE APPLIED TO THE ENTIRE TOP SURFACE OF THE PRECAST CULVERT SECTIONS AND SHALL EXTEND ONE FOOT VERTICALLY DOWN THE SIDES FOR ALL PORTIONS OF THE CULVERT WHICH SHALL BE IN CONTACT WITH THE BACKFILL. PAYMENT FOR THE MEMBRANE WATERPROOFING SHALL BE AT THE CONTRACT PRICE BID PER SQUARE YARD FOR ITEM 512 - TYPE 3 WATERPROOFING.



**WATERPROOFING DETAILS**

BASIS OF PAYMENT: ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT THE FOOTING, CUTOFF WALL, WINGWALLS AND FORESLOPE WALL SHALL BE INCLUDED WITH ITEM 511 - CLASS QC1 CONCRETE, RETAINING WALL/ WINGWALL - NOT INCLUDING FOOTING, ITEM 511 - CLASS QC1 CONCRETE, FOOTING, AND ITEM 511 - CLASS QC1 CONCRETE, HEADWALLS. PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.

**ITEM 503 - COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN**

THE DESIGN SHOWN ON THE PLANS FOR TEMPORARY SUPPORT OF EXCAVATION IS ONE REPRESENTATIVE DESIGN THAT MAY BE USED TO CONSTRUCT THE PROJECT. THE CONTRACTOR MAY CONSTRUCT THE DESIGN SHOWN ON THE PLANS OR PREPARE AN ALTERNATE DESIGN TO SUPPORT THE SIDES OF THE EXCAVATIONS. IF CONSTRUCTING AN ALTERNATE DESIGN FOR TEMPORARY SUPPORT OF EXCAVATION, PREPARE AND PROVIDE PLANS IN ACCORDANCE WITH C&MS 501.05. THE DEPARTMENT WILL PAY FOR THE TEMPORARY SUPPORT OF EXCAVATION AT THE CONTRACT LUMP SUM PRICE FOR COFFERDAMS AND EXCAVATION BRACING. THE DEPARTMENT WILL NOT MAKE ADDITIONAL PAYMENT FOR PROVIDING AN ALTERNATE DESIGN.

GENERAL NOTES  
 BRIDGE NO. GEA-44-1493  
 OVER EDWARDS CREEK

CFN  
 1994030

DESIGN AGENCY



DESIGNER  
 CJK

CHECKER  
 ARA

REVIEWER  
 MDP 09/30/24

PROJECT ID  
 115876

SUBSET TOTAL  
 2 9

SHEET TOTAL  
 P.41 69

| ADDENDUM NO. | DATE    | REV. BY | DESCRIPTION               |
|--------------|---------|---------|---------------------------|
| 2            | 1-28-25 | ARA     | PREBID QUESTION REVISIONS |

**ITEM 611 - 9' X 4' CONDUIT, TYPE A, 706.05, AS PER PLAN**

THIS ITEM CONSIST OF REPLACING THE EXISTING STRUCTURE WITH 9' X 4' PRECAST CONCRETE CULVERT STRUCTURE. ALL APPLICABLE REQUIREMENTS OF CMS 611 AND CMS 706.05 AND ASTM C1577 SHALL BE MET EXCEPT AS DETAILED IN THE PLANS AND/OR NOTED HEREIN.

DESIGN OF THE PRECAST REINFORCED CONCRETE SECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURE SHALL BE DESIGNED FOR HL-93 LOADING AND ALL OTHER APPLICABLE PROVISIONS OF THE CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL 2020.

THE WALL AND SLAB THICKNESS ON THE PLANS WERE OBTAINED FROM THE DESIGN DATA SHEET AT THE TIME THE PLANS WERE PREPARED. IF THE WALL AND/OR TOP SLAB THICKNESS OF THE CULVERT PROPOSED ARE DIFFERENT FROM WHAT IS SHOWN ON THE PLANS, A MARKED COPY OF THE PROJECT PLANS, INCLUDING ALL PLAN NOTES AND DETAILS SHOWING ITEMS AFFECTED BY THE DIFFERENT CULVERT DIMENSIONS, SHALL BE SUBMITTED FOR APPROVAL WITH THE SHOP DRAWINGS. ALL WORK REQUIRED TO ACCOMMODATE ANY REVISED DIMENSIONS SHALL BE AT NO ADDITIONAL COST TO THE DEPARTMENT.

AS THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE PRECAST SECTIONS, THE CONTRACTOR OR THE CONTRACTOR'S FABRICATOR SHALL PERFORM A LOAD RATING OF THE PROPOSED STRUCTURE USING BRASS-CULVERT SOFTWARE. ALL OHIO LEGAL LOADS ARE TO BE RATED, INCLUDING EV2 AND EV3. A BR-100 LOAD RATING SUMMARY REPORT, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OHIO, ALONG WITH ASSOCIATED INPUT FILES SHALL ALSO BE SUBMITTED TO THE ENGINEER.

FOR THE PURPOSES OF LOAD RATING, THE DEPTH OF COVER SHALL BE CONSIDERED TO BE 1.94 FEET.

TWO (2) HARD COPIES AND ONE (1) ELECTRONIC COPY OF THE SHOP DRAWINGS INCLUDING ALL ASSOCIATED DESIGN CALCULATIONS FOR REBAR SIZE, SPACING CLEARANCE, CONCRETE THICKNESS, ETC., MUST BE SUBMITTED TO THE ENGINEER FOR ACCEPTANCE. ALL SHOP DRAWINGS AND SUPPORTING CALCULATIONS MUST BEAR THE SIGNATURE AND SEAL OF A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF OHIO PER CMS 611.04.A. MANUFACTURING OF THE PRECAST SECTIONS SHALL NOT BEGIN UNTIL AFTER WRITTEN ACCEPTANCE OF THE SHOP DRAWINGS HAS BEEN RECEIVED FROM THE ENGINEER.

THE CONTRACTOR MUST SUBMIT AN INSTALLATION PLAN TO THE ENGINEER FOR ACCEPTANCE PER CMS 611.04.B. IN ADDITION TO THE REQUIRED INFORMATION LISTED IN THIS SPECIFICATION, THE CONTRACTOR MUST INCLUDE INFORMATION IN REGARD TO SUPPORTING AND MAINTAINING ALL EXISTING UTILITIES DESIGNATED TO REMAIN IN PLACE AND POSSIBLY EXPOSED AS A RESULT OF REMOVING THE EXISTING STRUCTURE AND EXCAVATING FOR PLACEMENT OF THE PROPOSED STRUCTURE.

LOW STRENGTH MORTAR BACKFILL MATERIAL SHALL BE USED FOR BEDDING AND BACKFILL OPERATIONS. PER 611.06, ALL BEDDING AND BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS DESCRIBED IN THE ACCEPTED INSTALLATION PLAN.

PLACE AND JOIN ALL PRECAST CONCRETE SECTIONS PER 611.07, 611.08 AND AS DESCRIBED IN THE ACCEPTED INSTALLATION PLAN. JOINTS BETWEEN ADJACENT PRECAST CONCRETE SECTIONS SHALL BE TREATED PER THE APPROPRIATE METHOD DESCRIBED IN 611.08.B.3 FOR THE TYPE OF SECTIONS BEING JOINED. JOINT WRAP PRIMER MATERIAL SHALL ONLY BE APPLIED AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY PLACED AND JOINED IN THE FIELD.


AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY JOINED, APPLY TYPE 2 OR TYPE 3 MEMBRANE WATERPROOFING TO ALL EXTERNAL SURFACES OF THE PRECAST CONCRETE BOX SECTIONS AS PER 611.09 AND AS DETAILED IN THE PLANS. PRIMER REQUIRED FOR THE MEMBRANE MATERIAL SHALL ONLY BE APPLIED AFTER ALL PRECAST SECTIONS HAVE BEEN PROPERLY PLACED AND JOINED IN THE FIELD.

**LEGEND**

- C.J. CONSTRUCTION JOINT
- CL CENTER LINE
- CONC. CONCRETE
- DIA. DIAMETER
- EXTEN. EXTENSION
- E.F. EACH FACE
- F.F. FRONT FACE
- MAX. MAXIMUM
- MIN. MINIMUM
- B.F. BACK FACE
- PEJF PREFORMED EXPANSION JOINT FILLER
- QTY. QUANTITY
- REINF. REINFORCING
- SER. SERIES
- SHT. SHEET
- T&B TOP AND BOTTOM
- TYP. TYPICAL
- ELEV. ELEVATION

| FUNDING   | ESTIMATED QUANTITIES |          |       |      | DESCRIPTION                                                   | CALCULATED: TDB 9/18/2024<br>CHECKED: ARA 9/21/2024 | REF. SHT. |
|-----------|----------------------|----------|-------|------|---------------------------------------------------------------|-----------------------------------------------------|-----------|
|           | ITEM                 | ITEM EXT | TOTAL | UNIT |                                                               |                                                     |           |
| 01/NFP/10 |                      |          |       |      |                                                               |                                                     |           |
| LS        | 202                  | 11000    | LS    |      | STRUCTURE REMOVED                                             |                                                     |           |
| LS        | 503                  | 11101    | LS    |      | COFFERDAMS AND EXCAVATION BRACING, AS PER PLAN                | 41/48                                               |           |
| LS        | 503                  | 21300    | LS    |      | UNCLASSIFIED EXCAVATION (WINGWALL FOOTING)                    |                                                     |           |
| 3101      | 509                  | 10000    | 3101  | LB   | EPOXY COATED STEEL REINFORCEMENT                              |                                                     |           |
| 8         | 511                  | 46010    | 8     | CY   | CLASS QC1 CONCRETE, RETAINING/WINGWALL, NOT INCLUDING FOOTING |                                                     |           |
| 25        | 511                  | 46510    | 25    | CY   | CLASS QC1 CONCRETE, FOOTING                                   |                                                     |           |
| 2         | 511                  | 46610    | 2     | CY   | CLASS QC1 CONCRETE, HEADWALL                                  |                                                     |           |
| 31        | 512                  | 10100    | 31    | SY   | SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)                 |                                                     |           |
| 79        | 512                  | 33000    | 79    | SY   | TYPE 2 WATERPROOFING                                          |                                                     |           |
| 73        | 512                  | 33010    | 73    | SY   | TYPE 3 WATERPROOFING                                          |                                                     |           |
| 28        | 516                  | 13600    | 28    | SF   | 1" PREFORMED EXPANSION JOINT FILLER                           |                                                     |           |
| 9         | 518                  | 21200    | 9     | CY   | POROUS BACKFILL WITH GEOTEXTILE FABRIC                        |                                                     |           |
| 45        | 601                  | 32104    | 45    | CY   | ROCK CHANNEL PROTECTION, TYPE B WITH GEOTEXTILE FABRIC        |                                                     |           |
| 62        | 611                  | 94937    | 62    | FT   | 9' X 4' CONDUIT, TYPE A, 706.05, AS PER PLAN                  | 42/48                                               |           |
| 411       | 613                  | 41200    | 411   | CY   | LOW STRENGTH MORTAR BACKFILL                                  |                                                     |           |

GENERAL NOTES AND ESTIMATED QUANTITIES  
BRIDGE NO. GEA-44-1493  
OVER EDWARDS CREEK

|                                                                                                                                                                                     |          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CFN                                                                                                                                                                                 | 1994030  |
| DESIGN AGENCY                                                                                                                                                                       |          |
| <br><small>ARCHITECTURE - ENGINEERING - PLANNING<br/>SURVEYING - CONSTRUCTION SERVICES</small> |          |
| DESIGNER                                                                                                                                                                            | CJK      |
| CHECKER                                                                                                                                                                             | ARA      |
| REVIEWER                                                                                                                                                                            |          |
| MDP                                                                                                                                                                                 | 09/30/24 |
| PROJECT ID                                                                                                                                                                          | 115876   |
| SUBSET                                                                                                                                                                              | 3        |
| TOTAL                                                                                                                                                                               | 9        |
| SHEET                                                                                                                                                                               | P.42     |
| TOTAL                                                                                                                                                                               | 69       |

| ADDENDUM NO. | DATE    | REV. BY | DESCRIPTION               |
|--------------|---------|---------|---------------------------|
| 2            | 1-28-25 | ARA     | PREBID QUESTION REVISIONS |