

DESIGN SPECIFICATIONS

THIS STRUCTURE CONFORMS TO "AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS. 2023 SPECIFICATIONS AND THE 2020 ODOT BRIDGE DESIGN MANUAL.

DESIGN DATA

THE FOLLOWING DESIGN DATA IS ASSUMED:
 DESIGN LOADING: HL-93
 INTERNAL ANGLE OF FRICTION = 20 DEGREES
 COEFFICIENT OF FRICTION = 0.30
 UNIT WEIGHT OF SOIL = 130 PCF
 UNIT WEIGHT OF CONCRETE = 150 PCF
 SLOPE OF BACKFILL = 2:1
 MAXIMUM FOUNDATION BEARING PRESSURE = 2000 PSF

CLASS QC 1 CONCRETE - COMPRESSIVE STRENGTH 4000 PSI (FOOTING, HEADWALLS)

REINFORCING STEEL - ASTM A615 OR A996, GRADE 60 MINIMUM YIELD STRENGTH, 60,000 PSI, (EPOXY COATED)

BACKFILL LIMITATIONS

WHEN THE DESIGN HEIGHT IS GREATER THAN 10 FEET, THE BACKFILL BEHIND THE WINGWALLS SHALL NOT BE PLACED HIGHER THAN THE ELEVATION OF THE SOIL ABOVE THE TOE. WHEN THE SOIL ABOVE THE TOE IS AT ITS FINISHED ELEVATION, THE REMAINDER OF THE BACKFILL MAY BE PLACED.

SHOP DRAWINGS

SHOP DRAWINGS SHALL BE SUBMITTED TO THE DISTRICT BRIDGE ENGINEER. CONTACT NUMBER: 740-568-3946.

POROUS BACKFILL WITH FILTER FABRIC

1'-6" THICK SHALL BE PLACED BEHIND BOTH HEADWALLS AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION TO THE PROPOSED PIPE. 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" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE. ONE WEEPHOLE SHALL BE PROVIDED ON BOTH SIDES OF EACH HEADWALL.

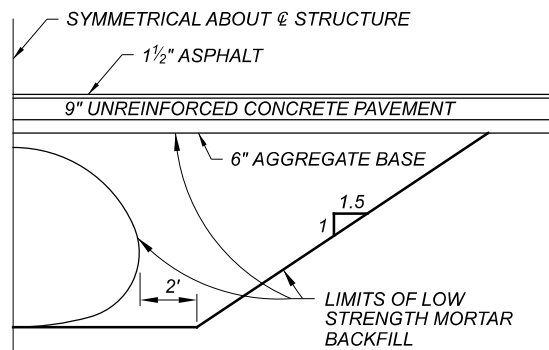
ITEM 613 - LOW STRENGTH MORTAR BACKFILL (TYPE 2)

LOW STRENGTH MORTAR BACKFILL SHALL BE PLACED AS SHOWN. THE PLAN QUANTITY IS BASED ON A TRENCH LENGTH OF 75 FEET.

PAYMENT FOR LOW STRENGTH MORTAR BACKFILL SHALL BE MADE ONLY FOR BACKFILL PLACED TO THE LIMITS SHOWN. THE EXCAVATION REQUIRED FOR THE PLACEMENT OF THE LOW STRENGTH MORTAR SHALL BE INCLUDED IN ITEM 611 FOR PAYMENT.

ITEM 611 - CONDUIT, FIELD PAVING OF PIPE, 112" x 75" CONDUIT, TYPE A, 707.02 (FOR INFORMATION ONLY)

THIS ITEM INCLUDES THE INSTALLATION OF THE 112" x 75" CONDUIT, TYPE A, 707.02, AND THE FIELD PAVING OF SAID CONDUIT PER ODOT CMS 611.11.

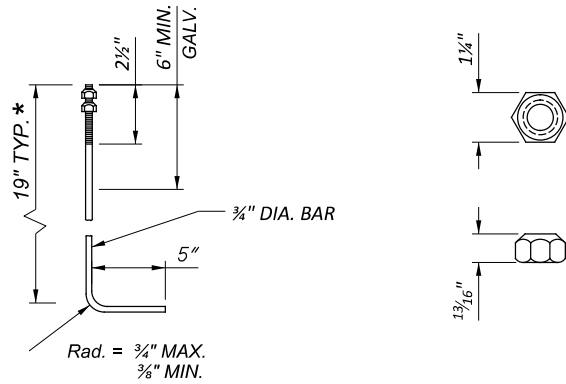


BASIS OF PAYMENT

ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO CONSTRUCT THE FOOTING, CUTOFF WALL, AND HEADWALL SHALL BE INCLUDED WITH EACH 511 ITEM. PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.

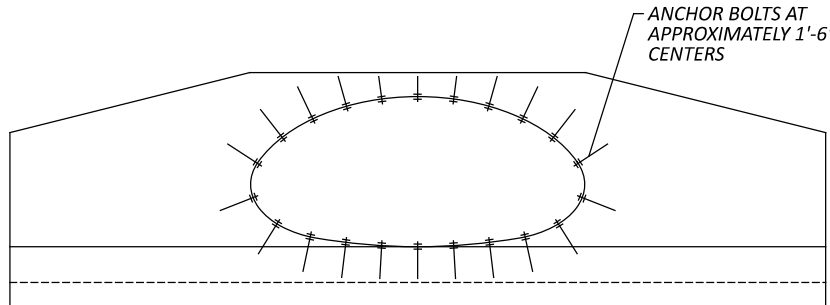
ANCHOR BOLTS

FURNISH BOLTS THAT MEET ASTM A 307 FOR ANCHORING BOTH ENDS OF CULVERT. THE TOP 6" MIN. OF THE BOLT MUST BE GALVANIZED ACCORDING TO ASTM A 153. COST OF ANCHORS IS INCLUDED IN THE PRICE BID PER FOT OF ITEM 611.



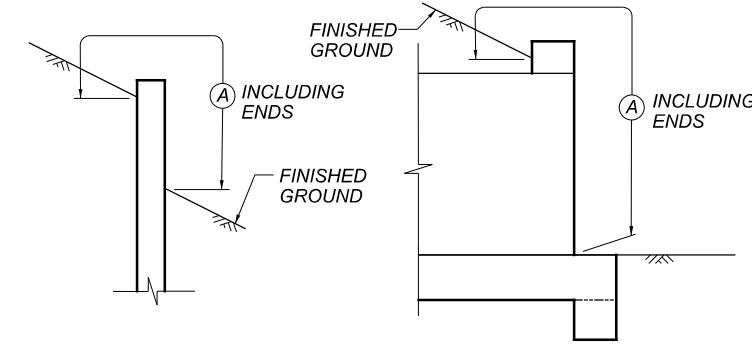
ANCHOR BOLT
 * - ADJUST LENGTH WHERE NECESSARY TO MAINTAIN 2" MIN. COVER AT TOP AND 3" MIN. COVER AT BOTTOM OF HEADWALL

NUT
 (ASTM A 325 and A 153)



SEALING OF HEADWALLS

ALL EXPOSED HEADWALL CONCRETE SHALL BE SEALED WITH NON-EPOXY-URETHANE SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE NON-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

STRUCTURE REMOVED, AS PER PLAN

THIS WORK SHALL INCLUDE COMPLETE REMOVAL OF THE EXISTING CMP ARCH.

PAYMENT: THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE BID FOR ITEM 202 - STRUCTURE REMOVED. PRICE AND PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS NECESSARY TO COMPLETE THE WORK IN THE CONFORMANCE WITH THESE REQUIREMENTS, WITH PERTINENT PROVISIONS OF 202 AND TO THE SATISFACTION OF THE ENGINEER.

UNCLASSIFIED EXCAVATION

EXCAVATION LIMITS FOR THE PROPOSED STRUCTURE SHALL BE AS DEFINED IN 503.09. EXCAVATION OUTSIDE THESE LIMITS NECESSARY TO REMOVE THE EXISTING STRUCTURE SHALL BE INCLUDED IN 202 FOR PAYMENT.

UTILITY LINES

ALL EXPENSES INVOLVED IN RELOCATING (INSTALLING) THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNER(S). THE CONTRACTOR AND OWNER(S) ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ESTIMATED QUANTITIES (01/S5K/04)

ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
202	11001	LUMP		STRUCTURE REMOVED, AS PER PLAN
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING
503	21300	LUMP		UNCLASSIFIED EXCAVATION
509	10000	5,431	LB	EPOXY COATED REINFORCING STEEL
511	46510	34.2	CY	CLASS QC1 CONCRETE, FOOTING
511	46610	18.6	CY	CLASS QC1 CONCRETE, HEADWALL
512	10050	38.3	SY	SEALING OF CONCRETE SURFACES (NON-EPOXY)
518	21230	LUMP		POROUS BACKFILL WITH GEOTEXTILE FABRIC
611	96560	75	FT	CONDUIT, FIELD PAVING OF PIPE, 112" x 75" CONDUIT, TYPE A, 707.02
613	41300	294	CY	LOW STRENGTH MORTAR BACKFILL (TYPE 2)

