

GENERAL NOTES

DESIGN SPECIFICATIONS: THIS STANDARD DRAWING CONFORMS TO THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2014, INCLUDING THE 2015 & 2016 INTERIM SPECIFICATIONS AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

DESIGN DATA: THE FOLLOWING DESIGN DATA IS ASSUMED:

INTERNAL ANGLE OF FRICTION OF BACKFILL SOIL, $\phi_{bf} = 30^\circ$
 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, $S_{uf} = 1,500$ 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 CLASS QC1 - 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 THEN THEIR RESPECTIVE BEARING PRESSURES. IF A BACKFILL MATERIAL WITH A HIGER INTERNAL ANGLE OF FRICTION OR A LIGHTER TOTAL UNIT WEIGHT IS USED: OR IF A FOUNDATION SOUL WITH A HIGHER DRAINED INTERNAL ANGEL OF FRICTION OR A HIGHER UNDRAINED SHEAR STRENGTH IS ENCOUNTERED; THEN THE STABILITY OF THE WINGWALLS IS SATISFACTORY.

ITEM 203 - GRANULAR MATERIAL, TYPE E, AS PER PLAN

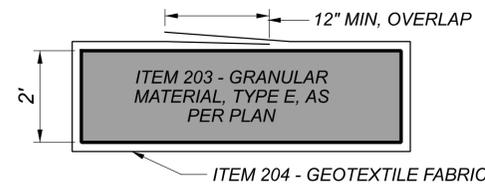
PROVIDE GRANULAR MATERIAL, TYPE E CONFORMING TO ITEM 203 AND CONSISTING OF NO. 2 CRUSHED CARBONATE STONE. ALL OTHER REQUIREMENTS OF ITEM 203 APPLY.

ITEM 204 - GEOTEXTILE FABRIC, AS PER PLAN

ENCAPSULATE THE BOTTOM, SIDES, AND TOP OF THE CULVERT UNDERCUT WITH ITEM 204 - GEOTEXTILE FABRIC. OVERLAP ALL SEAMS A MINIMUM OF 12". GEOTEXTILE FABRIC OVERLAPS CONSIDERED INCIDENTAL TO THE GEOTEXTILE FABRIC QUANTITY AND ADDITIONAL PAYMENT WILL NOT BE CONSIDERED FOR OVERLAPS.

CULVERT UNDERCUT DETAIL

PROVIDE A 2 FOOT UNDERCUT AS SHOWN IN THE CULVERT PROFILE VIEW ON THIS SHEET AND IN THE CULVERT UNDERCUT DETAIL BELOW. THE WIDTH OF THE UNDERCUT SHALL BE THE WIDTH OF THE CULVERT PLUS 1 FOOT ON EACH SIDE FOR EXCAVATION AND BEDDING PER CMS 611. THE CULVERT UNDERCUT SHALL BE BACKFILLED WITH ITEM 203-GRANULAR MATERIAL, TYPE E, AS PER PLAN AND WRAPPED WITH ITEM 204-GEOTEXTILE FABRIC.

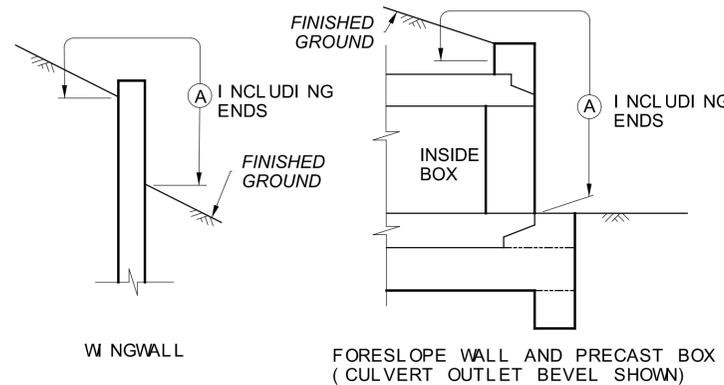


POROUS BACKFILL WITH FILTER FABRIC 1'-6" THICK SHALL BE PLACED BEHIND THE WINGWALLS ONLY AND SHALL EXTEND TO 12" BELOW THE EMBANKMENT SURFACE. GEOTEXTILE FABRIC TYPE A SHALL BE PLACED BETWEEN THE POROUS BACKFILL AND REPLACED EXCAVATION ADJACENT TO THE STRUCTURE. IT SHALL TURN UNDER THE BOTTOM OF THE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

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 TWO WEEPHOLES 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 NON-EPOXY SEALER. THE LIMITS SHALL BE AS SHOWN IN THE DIAGRAMS BELOW. PAYMENT FOR THE NON-EPOXY SEALER SHALL BE PER ITEM 512 - SEALING OF CONCRETE SURFACES.



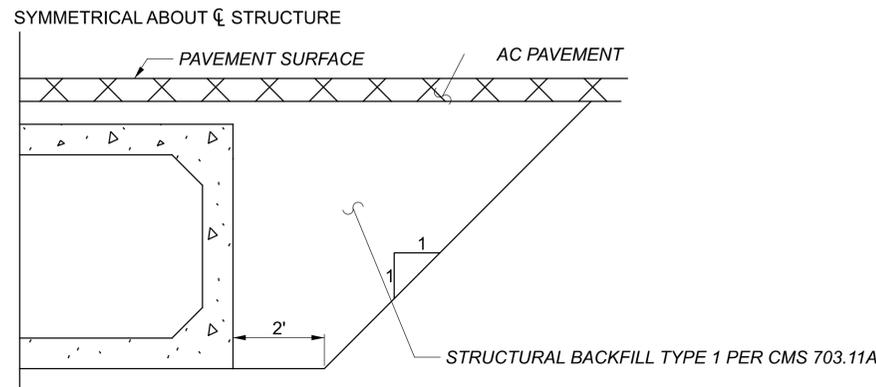
LIMITS OF ITEM 512-SEALING CONCRETE SURFACES

(A) - SEAL ENTIRE CONCRETE SURFACE AREA

ITEM 611 - CONDUIT, MISC.: 14'x6' CONDUIT, TYPE A, 706.05, AS PER PLAN

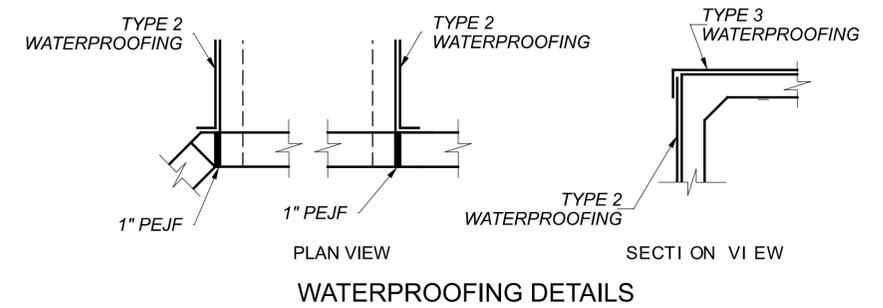
FOLLOW ALL REQUIREMENTS OF CMS 611 AND 706.05.

STRUCTURAL BACKFILL TYPE 1 CONSISTING OF CRUSHED CARBONATE STONE, THAT MEETS THE GRADATIONS OF ITEM 304 SHALL BE PLACED AS SHOWN IN THE DETAIL BELOW. QUANTITY SHALL BE BASED ON A TRENCH LENGTH OF 92 FEET MEASURED ALONG THE CENTERLINE OF THE CULVERT. PAYMENT FOR STRUCTURAL BACKFILL TYPE 1 AND THE EXCAVATION REQUIRED FOR THE PLACEMENT OF THE STRUCTURAL BACKFILL SHALL BE INCLUDED IN ITEM 611 FOR PAYMENT.



WATERPROOFING: TYPE 2 WATERPROOFING, PER CMS 512 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.

PAVEMENT IS TO BE USED DIRECTLY ON TOP OF THE CULVERT, TYPE 3 WATERPROOFING, PER CMS 512 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.



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/WINGWALL INCLUDING FOOTING. PAYMENT FOR REINFORCING STEEL SHALL BE INCLUDED WITH ITEM 509 - EPOXY COATED REINFORCING STEEL.

ESTIMATED QUANTITIES CLI-73-1654 (PLAN SPLIT 01/STR/11)					
ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION	
202	11000	LUMP		STRUCTURE REMOVED	
203	35141	123	CU. YD.	GRANULAR MATERIAL TYPE E, AS PER PLAN	
204	50001	420	SQ. YD.	GEOTEXTILE FABRIC, AS PER PLAN	
204	13000	123	CU. YD.	EXCAVATION OF SUBGRADE, 24" DEEP	
503	11100	LUMP		COFFERDAMS AND EXCAVATION BRACING	
503	21300	LUMP		UNCLASSIFIED EXCAVATION (WINGWALL FOOTING)	
509	10000	5013	LB.	EPOXY COATED STEEL REINFORCEMENT	
511	46012	12	CU. YD.	CLASS QC1 CONCRETE WITH RETAINING/WINGWALL NOT INCLUDING FOOTING	
511	46510	42	CU. YD.	CLASS QC1 CONCRETE, FOOTING	
511	46610	2	CU. YD.	CLASS QC1 CONCRETE, HEADWALL	
512	10050	111	SQ. YD.	SEALING OF CONCRETE SURFACES (NON-EPOXY)	
512	33000	124	SQ. YD.	TYPE 2 WATERPROOFING	
512	33010	185	SQ. YD.	TYPE 3 WATERPROOFING	
516	13600	34	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER	
518	21230	LUMP		POROUS BACKFILL WITH GEOTEXTILE FABRIC	
601	11000	87	SQ. YD.	PREPARED 6" REINFORCED CONCRETE SLAB	
601	32100	115	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER	
611	96311	92	LI N. FT.	14'-0" SPAN x 5'-0" RISE CONDUIT, TYPE A, 706.05, AS PER PLAN	