

SHEET NUM.											PART.		ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE SHEET NO.
							4	7	8	11	01/NFP/BR		EXT	TOTAL				
ROADWAY																		
											LS	201	11000	LS		CLEARING AND GRUBBING		
								25			25	202	23000	25	SY	PAVEMENT REMOVED		
								25			25	203	10000	25	CY	EXCAVATION		
								145			145	204	10000	145	SY	SUBGRADE COMPACTION		
EROSION CONTROL																		
									4		4	601	32100	4	CY	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER		
							145				145	659	10000	145	SY	SEEDING AND MULCHING		
							0.02				0.02	659	20000	0.02	TON	COMMERCIAL FERTILIZER		
							0.01				0.01	659	35000	0.01	MGAL	WATER		
											1,000	832	30000	1,000	EACH	EROSION CONTROL		
PAVEMENT																		
								225			225	252	01500	225	FT	FULL DEPTH PAVEMENT SAWING		
								13			13	301	56000	13	CY	ASPHALT CONCRETE BASE, PG64-22, (449)		
								20			20	304	20000	20	CY	AGGREGATE BASE		
								22			22	407	20000	22	GAL	NON-TRACKING TACK COAT (0.085 GAL/SY)		
								9			9	441	50000	9	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22		
STRUCTURE 20 FOOT SPAN AND UNDER (CLA-GEO ROGERS CLARK PK LOWER BR)																		
									LS		LS	202	11000	LS		STRUCTURE REMOVED		
									LS		LS	503	11100	LS		COFFERDAMS AND EXCAVATION BRACING		
									LS		LS	503	21300	LS		UNCLASSIFIED EXCAVATION		
										2,906	2,906	509	10000	2,906	LB	EPOXY COATED REINFORCING STEEL		
											10	511	46010	10	CY	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING		
											28	511	46510	28	CY	CLASS QC1 CONCRETE, FOOTING		
											1	511	46610	1	CY	CLASS QC1 CONCRETE HEADWALL		
											29	512	10100	29	SY	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)		
											52	512	33000	52	SY	TYPE 2 WATERPROOFING		
											55	512	33010	55	SY	TYPE 3 WATERPROOFING		
											26	516	13600	26	SF	1" PREFORMED EXPANSION JOINT FILLER		
											LS	518	21230	LS		POROUS BACKFILL WITH GEOTEXTILE FABRIC		
											36	611	94980	36	FT	10' X 4' CONDUIT, TYPE A, 706.05		
											240	840	26050	240	SF	AESTHETIC SURFACE TREATMENT		
INCIDENTALS																		
											LS	614	11000	LS		MAINTAINING TRAFFIC		
											LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING		
											LS	624	10000	LS		MOBILIZATION		

DESIGN AGENCY



DESIGNER

BTC

REVIEWER

CWW 12-03-21

PROJECT ID

111870

SHEET

P.5

TOTAL

11

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, 2007.

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, $S_{ur} = 1500$ 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 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)

PRECAST CONCRETE: AT THE OPTION OF THE CONTRACTOR, PRECAST WINGWALLS MAY BE USED IN ACCORDANCE WITH CMS 602.03.E.

FORESLOPE WALL ANCHOR DOWELS: ANCHOR PER CMS 510 WITH NONSHRINK, NONMETALLIC GROUT CONFORMING TO CMS 705.20 AND TO A DEPTH SPECIFIED ON SHEET 6/6. PAYMENT FOR DOWEL HOLES, GROUT AND INSTALLATION SHALL BE INCLUDED WITH ITEM 511.

THREADED INSERTS OR NON-PROTRUDING MECHANICAL CONNECTORS CAPABLE OF DEVELOPING AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCEMENT SHOWN ARE AN ACCEPTABLE ALTERNATIVE TO RESIN BONDING. MAINTAIN A MINIMUM COVER OF 3 INCHES AT THE BOTTOM OF THE CULVERT SLAB. MECHANICAL CONNECTORS SHALL HAVE AN "L-SHAPED" BAR INSIDE THE CULVERT WITH A MINIMUM HORIZONTAL LENGTH OF 12 INCHES. THE DEPARTMENT WILL CONSIDER PAYMENT FOR INSERTS OR MECHANICAL CONNECTORS AS INCIDENTAL TO ITEM 611.

BACKFILL LIMITATION: WHEN THE DESIGN HEIGHT IS GREATER THAN 10 FT, 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.

ITEM 840 - AESTHETIC SURFACE TREATMENT: FOR THE ARCHITECTURALLY TREATED RETAINING/WINGWALL, FORM LINERS SHALL BE USED TO PRODUCE THE TEXTURED SURFACES ACCORDING TO THE LIMITS SHOWN ON THE PLANS. THE FORM LINER SHALL CREATE THE APPEARANCE OF DRY STACKED STONE BLOCKS. THE PATTERN SHOULD APPEAR TO BE CONTINUOUS ACROSS ALL JOINTS BETWEEN PANELS. THE LISTED PATTERN SHALL BE USED, PATTERNS FROM OTHER MANUFACTURERS MAY BE USED IF APPROVED BY THE ENGINEER. USE ONLY ONE PATTERN FROM ONE MANUFACTURER FOR THE PROJECT TO ENSURE CONSISTENCY. PROJECT SPECIFIC REQUIREMENTS: AN "ASHLAR STONE" PATTERN SHALL BE USED. THE MINIMUM FORM LINER RELIEF DEPTH SHALL BE 1". THE MAXIMUM FOR LINER RELIEF DEPTH SHALL BE 2". FORM LINER SUPPLIERS FOR THE "ASHLAR STONE" PATTERN SHALL BE FROM THE FOLLOWING MANUFACTURER OR AN APPROVED EQUAL:

- CUSTOM ROCK
 2020 WEST 7TH STREET
 ST. PAUL, MN 55116
 PATTERN: 1203
 NEW ENGLAND DRYSTACK
- SPECFORMLINER, INC.
 1038 EAST 4TH STREET
 SANTA ANA, CA 92701
 PATTERN: 1544
 ASHLAR DRYSTACK

METHOD OF MEASUREMENT: THE DEPARTMENT WILL MEASURE FORM LINERS BY THE NUMBER OF SQUARE FEET.
BASIS OF PAYMENT: THE DEPARTMENT WILL PAY FOR FALSEWORK, STRUCTURAL FORMWORK, FURNISHING, PLACING, CONSOLIDATING, FINISHING, AND CURING PORTLAND CEMENT CONCRETE SEPARATELY. PAYMENT FOR ITEM 840-AESTHETIC SURFACE TREATMENT INCLUDES ALL MATERIAL AND LABOR REQUIRED TO PRODUCE THE TEXTURED CONCRETE SURFACES SHOWN ON THE PLANS AND DESCRIBED HERIN.

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 WEEPHOLE.

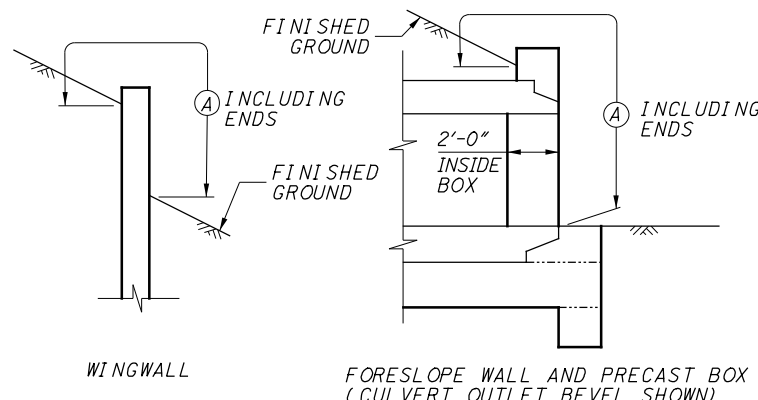
WEEPHOLES SHALL BE PLACED 6" TO 12" ABOVE THE NORMAL WATER ELEVATION OR GROUND LINE AND SHALL HAVE A MAXIMUM SPACING OF 10'-0". A MINIMUM OF ONE WEEPHOLE SHALL BE PROVIDED PER WINGWALL.

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.

UNCLASSIFIED EXCAVATION: ALL EXCAVATION REQUIRED TO INSTALL THE PROPOSED BOX CULVERT, FOOTINGS, AND WINGWALLS SHALL BE INCLUDED IN THIS ITEM FOR PAYMENT.

STRUCTURE REMOVED: THIS ITEM INCLUDES THE REMOVAL OF THE EXISTING CONCRETE SLAB TOP STRUCTURE AND THE CONCRETE HEADWALLS AND WINGWALLS. THIS ITEM SHALL BE REMOVED PER CMS 202. PAYMENT FOR THE REMOVAL OF THIS ITEM IS PER ITEM 202, STRUCTURE REMOVED.

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.



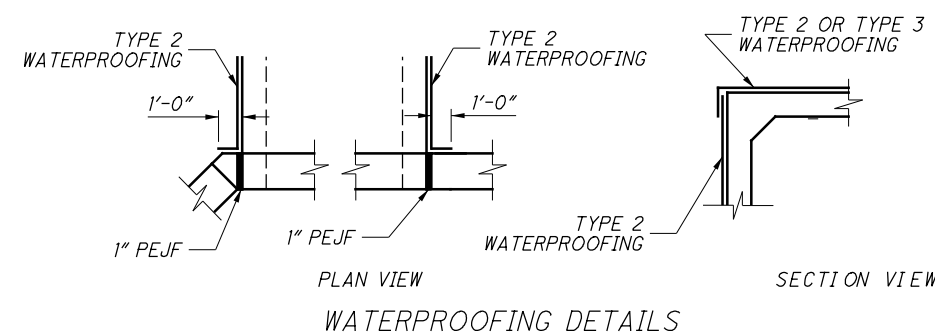
LIMITS OF ITEM 512-SEALING CONCRETE SURFACES

Ⓐ - SEAL ENTIRE CONCRETE SURFACE AREA

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.

IF PAVEMENT IS NOT PLACED DIRECTLY ON TOP OF THE CULVERT, TYPE 2 WATERPROOFING, PER CMS 512 AND 711.25 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 2 WATERPROOFING.

IF 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.



ESTIMATED QUANTITIES				
ITEM	ITEM EXT	TOTAL	UNIT	DESCRIPTION
202	11000	LUMP		STRUCTURE REMOVED
503	11100	LUMP		COFFERDAMS, CRIBS, AND SHEETING
503	21300	LUMP		UNCLASSIFIED EXCAVATION (WINGWALL FOOTING)
509	10000	2906	LB.	EPOXY COATED REINFORCING STEEL
511	46010	10	CU. YD.	CLASS QC1 CONCRETE, RETAINING/WINGWALL NOT INCLUDING FOOTING
511	46510	28	CU. YD.	CLASS QC1 CONCRETE, FOOTING
511	36610	1	CU. YD.	CLASS QC1 CONCRETE, HEADWALL
512	10100	29	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)
512	33000	52	SQ. YD.	TYPE 2 WATERPROOFING
512	33010	55	SQ. YD.	TYPE 3 WATERPROOFING
516	13600	26	SQ. FT.	1" PREFORMED EXPANSION JOINT FILLER
518	21230	LUMP		POROUS BACKFILL WITH FILTER FABRIC
601	32100	4	CU. YD.	ROCK CHANNEL PROTECTION, TYPE B WITH FILTER
611	96311	36	LIN. FT.	10'-0" SPAN X 4'-0" RISE CONDUIT, TYPE A, 706.05
840	26050	240	SQ. FT.	AESTHETIC SURFACE TREATMENT

NOTE: TOTALS CARRIED TO GENERAL SUMMARY SHEET

