

**CONTINGENCY QUANTITIES**

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY PLAN NOTE TO BE USED "BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING THE COMPLETION OF THIS PROJECT.

**DISPOSAL OF REMOVED MATERIAL**

ALL CONCRETE, REINFORCING STEEL, RAILING, ASPHALT, ETC. REMOVED FROM THE STRUCTURE, UNLESS OTHERWISE SPECIFIED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY HIM FROM THE SITE.

**PILE DRIVING CONSTRAINTS**

PRIOR TO DRIVING PILES, THE SPILL THROUGH SLOPES AND THE BRIDGE APPROACH EMBANKMENT BEHIND THE ABUTMENTS SHALL BE CONSTRUCTED UP TO THE LEVEL OF THE SUBGRADE ELEVATION FOR A MINIMUM DISTANCE OF 100 FEET BEHIND EACH ABUTMENT. THE EXCAVATION FOR THE ABUTMENT FOOTINGS AND THE INSTALLATION OF THE ABUTMENT PILES SHALL NOT BEGIN UNTIL AFTER THE ABOVE REQUIRED EMBANKMENT HAS BEEN CONSTRUCTED.

**DOWEL HOLES**

THIS ITEM SHALL INCLUDE THE DRILLING OR FORMING OF HOLES INTO CONCRETE OR MASONRY AND THE FURNISHING AND PLACING OF GROUT INTO HOLES. NON-SHRINK EPOXY GROUT SHALL BE USED IN ACCORDANCE WITH CMS 510 AND CMS 705.20. DEPTH OF HOLES SHALL BE AS SHOWN IN PLANS.

PAYMENT FOR DRILLING OR FORMING HOLES AND FURNISHING AND PLACING MATERIALS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR THE RELATED 844 ITEM, HIGH PERFORMANCE CONCRETE, SUBSTRUCTURE.

**CONVERSION OF STANDARD BRIDGE DRAWINGS**

THE STANDARD BRIDGE DRAWINGS REFERENCED IN THIS PLAN ARE METRIC. ANY CONVERSION OF DIMENSIONS REQUIRED TO CONSTRUCT THE ITEMS SHOWN ON THE STANDARDS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONVERSIONS SHALL BE MADE USING THE SI (METRIC) TO ENGLISH CONVERSION FACTORS PROVIDED IN SECTION 109.11 OF THE 1997 CONSTRUCTION AND MATERIALS SPECIFICATIONS. THE APPENDIX OF ASTM E380 SHALL BE UTILIZED FOR ANY ADDITIONAL CONVERSION FACTORS REQUIRED. CONVERSIONS SHALL BE APPROPRIATELY PRECISE AND SHALL REFLECT STANDARD INDUSTRY ENGLISH VALUES WHERE SUITABLE.

**ITEM 516 - STRUCTURAL EXPANSION JOINT INCLUDING ELASTOMERIC STRIP SEAL**

THIS ITEM SHALL CONSIST OF FURNISHING, FABRICATING, CLEANING, METALIZING AND INSTALLING STRUCTURAL STEEL EXPANSION JOINTS WITH ELASTOMERIC STRIP SEALS PER ODOT STANDARD DRAWING EXJ-4-87 AND AS SHOWN ON SHEET 37/41.

**ITEM SPECIAL VANDAL PROTECTION FENCE, 6 FEET STRAIGHT, COATED FABRIC**

THIS ITEM SHALL BE AS PER STANDARD DRAWING VPF-1-90M WITH THE FOLLOWING MODIFICATION. ANCHOR BOLTS FOR FENCE POST SHALL BE CAST IN PLACE.

**PILE DESIGN LOADS (ULTIMATE BEARING VALUE)**

THE ULTIMATE BEARING VALUE IS 92 TONS PER PILE FOR THE REAR ABUTMENT AND 78 TONS PER PILE FOR THE FORWARD ABUTMENT PILE. THE ULTIMATE BEARING VALUE IS 80 TONS PER PILE FOR THE PIER PILES.

REAR ABUTMENT PILES:  
 10 PILES, 61 FEET LONG, ESTIMATED LENGTH  
 10 PILES OF ORDER LENGTH 60 FEET LONG  
 10 PILES OF ORDER LENGTH 6 FEET LONG  
 10 SPLICES

PIER 1 PILES:  
 6 PILES, 41 FEET LONG, ESTIMATED LENGTH  
 6 PILES OF ORDER LENGTH 41 FEET LONG  
 3 SPLICES

PIER 2 PILES:  
 6 PILES, 35 FEET LONG, ESTIMATED LENGTH  
 6 PILES OF ORDER LENGTH 35 FEET LONG  
 3 SPLICES

PIER 3 PILES:  
 6 PILES, 42 FEET LONG, ESTIMATED LENGTH  
 6 PILES OF ORDER LENGTH 42 FEET LONG  
 3 SPLICES

PIER 4 PILES:  
 6 PILES, 45 FEET LONG, ESTIMATED LENGTH  
 6 PILES OF ORDER LENGTH 45 FEET LONG  
 3 SPLICES

PIER 5 PILES:  
 6 PILES, 46 FEET LONG, ESTIMATED LENGTH  
 6 PILES OF ORDER LENGTH 46 FEET LONG  
 3 SPLICES

FORWARD ABUTMENT PILES:  
 10 PILES, 55 FEET LONG, ESTIMATED LENGTH  
 10 PILES OF ORDER LENGTH 55 FEET LONG  
 5 SPLICES

**ITEM 844-HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE, (DECK) AS PER PLAN  
 ITEM 844-HIGH PERFORMANCE CONCRETE, SUPERSTRUCTURE, (PARAPET) AS PER PLAN**

THE PROVISIONS OF 844 SHALL APPLY EXCEPT AS NOTED BELOW.

**SLIPFORMING.**

THE CONTRACTOR IS NOT ALLOWED THE OPTION OF SLIPFORMING BRIDGE PARAPETS BECAUSE OF THE USE OF DECORATIVE FORM LINERS.

FORMS SHALL NOT BE REMOVED UNTIL AT LEAST 2 HOURS AFTER THE FINAL SET. DETERMINATION OF THE FINAL SET SHALL BE AS PER ASTM C266 (GILMORE NEEDLE). TESTING SHALL BE PERFORMED BY THE CONTRACTOR AT NO COST TO THE STATE.

ANCHOR BOLTS FOR FENCE POSTS SHALL BE CAST IN PLACE.

THE CONTRACTOR SHALL CONSTRUCT 38 MM (1 1/2") DEEP AND 6 MM (1/4") WIDE CONTROL JOINTS SPACED AT A MINIMUM OF 1830 MM (6 FT) AND A MAXIMUM OF 2440 MM (8 FT) ON CENTER. THE CONTROL JOINTS SHALL BE MADE IN THE COMPLETE CIRCUMFERENCE OF THE PARAPET, STARTING AND ENDING AT THE ELEVATION OF THE TOP OF THE CONCRETE DECK (SEE DETAILS BELOW). THE CONTRACTOR MAY EITHER FORM THE CONTROL JOINTS IN WITH FORM LINERS, OR, WITHIN 24 HOURS OF PLACEMENT, SAW CUT THE CONTROL JOINTS IN WITH THE USE OF AN EDGE GUIDE, FENCE, OR JIG WHICH IS REQUIRED TO ENSURE THAT THE CUT JOINT IS STRAIGHT, TRUE, AND ALIGNED ON ALL FACES OF THE PARAPET. THE ENTIRE LENGTH OF EACH CONTROL JOINT SHALL BE SEALED TO A MINIMUM DEPTH OF 38 MM (1 1/2") WITH A CAULKING MATERIAL CONFORMING TO FEDERAL SPECIFICATION, TT-S-00227E.

**MIX OPTIONS.**

ALL SUPERSTRUCTURE CONCRETE SHALL BE THIS MIX (MIX 4, AS PER PLAN). ALL OTHER STRUCTURE CONCRETE SHALL BE THIS MIX OR MIX 2 CONCRETE.

THE FOLLOWING PROPORTIONS WILL BE USED AS A STARTING MIX DESIGN.

CONCRETE TABLE QUANTITIES PER CUBIC YARD AGGREGATES (SSD)									
MIX 4, AS PER PLAN (GGBF SLAG + MICROSILICA)									
WATER TO AGGREGATE CONTENT TYPE	FINE AIR AGGRE. (lb) +/-2%	#8 COURSE AGGRE. (lb)	#57 COARSE AGGRE. (lb)	CEMENT TOTAL (lb)	GGBF SLAG (lb)	MICRO- SILICA (lb)	CEMENTITIOUS RATIO	MAX	
GRAVEL	1245	360	1315	2920	400	170	30	0.42	7
LIMESTONE	1245	360	1335	2940	400	170	30	0.42	7
SLAG	1245	315	1155	2715	400	170	30	0.42	7

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIC GRAVITIES (SSD): NATURAL SAND AND GRAVEL 2.62, LIMESTONE SAND 2.68, LIMESTONE 2.65, SLAG 2.30, FLY ASH 2.65, GGBF SLAG 2.90, MICROSILICA SOLIDS 2.20, AND PORTLAND CEMENT 3.15. FOR AGGREGATES OF SPECIFIC GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED.

BASIS OF PAYMENT. PAYMENT FOR THE ABOVE COMPLETED AND ACCEPTED QUANTITIES WILL BE MADE AT THE CONTRACT BID PRICE FOR:

ITEM	UNITS	DESCRIPTION
844E48001	CUBIC YARD	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (DECK), AS PER PLAN
844E48021	CUBIC YARD	HIGH PERFORMANCE CONCRETE SUPERSTRUCTURE (PARAPET), AS PER PLAN

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DATE	10/26/01
REVIEWED	J.E.A.
STRUCTURE FILE NUMBER	4304055
DRAWN	R.L.B.
CHECKED	J.P.R.
REVISION	I.A.S.

GENERAL NOTES  
 BRIDGE NUMBER LAK-90-0945  
 S.R. 615 OVER INTERSTATE 90

LAK-IR90/SR615-  
 9.26/1.51

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