

STRUCTURAL GENERAL NOTES

STANDARD DRAWING AND SUPPLEMENTAL SPECIFICATIONS

REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:

AS-1-81	REVISED 07-19-02	GSD-1-96	REVISED 07-19-02
PCB-91	REVISED 07-19-02	SICD-1-96	REVISED 07-19-02
VPF-1-90	REVISED 07-19-02	BR-2-98	REVISED 07-19-02

AND TO SUPPLEMENTAL SPECIFICATIONS:

800	DATED 10-19-07
840	DATED 01-19-07

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 17th EDITION, 2002 AND THE O.D.O.T. BRIDGE DESIGN MANUAL.

DESIGN LOADING:

HS25 CASE II AND ALTERNATE MILITARY LOADING
FUTURE WEARING SURFACE (FWS) OF 60 P.S.F.

DESIGN DATA:

CONCRETE:

CLASS HP CONCRETE - COMPRESSIVE STRENGTH
4500 P.S.I. (SUPERSTRUCTURE)

CLASS HP CONCRETE - COMPRESSIVE STRENGTH
4000 P.S.I. (SUBSTRUCTURE)

REINFORCING STEEL:

ASTM A615 OR A996, GRADE 60, MINIMUM YIELD
STRENGTH 60,000 P.S.I.

SPIRAL REINFORCEMENT MAY BE PLAIN BARS,
ASTM A82 OR A615

STRUCTURAL STEEL:

ASTM A709 GRADE 50W, YIELD STRENGTH 50,000
P.S.I.

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL

2 1/2" CONCRETE COVER (TOP MAT)

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN
PURPOSES, TO BE 1" THICK.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN:

THE PROVISIONS OF ITEM 202 APPLY EXCEPT FOR THE REMOVAL OF THE EXISTING PIER FOUNDATION. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE-RAMS WILL NOT BE PERMITTED. THE METHOD OF REMOVAL AND THE WEIGHT OF HAMMER SHALL BE APPROVED BY THE ENGINEER. PERFORM ALL WORK IN THE MANNER THAT WILL NOT CUT, ELONGATE OR DAMAGE THE EXISTING PILES TO BE PRESERVED. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NORMAL 90-POUND CLASS. PNEUMATIC HAMMERS SHALL NOT BE PLACED IN DIRECT CONTACT WITH STEEL PILES THAT ARE TO BE RETAINED IN THE PROPOSED STRUCTURE.

THE EXISTING ABUTMENT PILES SHALL BE REMOVED 1'-0" BELOW MSE WALL EXCAVATION. THE LIMITS OF ABUTMENT PILES TO BE REMOVED ARE SHOWN ON SHEET [11/47].

ITEM 503, COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN:

A CONTRACTOR DESIGNED TEMPORARY SHORING MAY BE USED IN LIEU OF THE TEMPORARY SHORING AS SHOWN ON SHEETS 1555 THROUGH 1558. THE CONTRACTOR SHALL SUBMIT CONSTRUCTION PLANS AND CALCULATIONS IN ACCORDANCE WITH CMS 501.05. INCLUDE WITH ITEM 503 FOR PAYMENT

PILES TO BEDROCK

DRIVE PILES TO REFUSAL ON BEDROCK. THE DEPARTMENT WILL CONSIDER REFUSAL TO BE OBTAINED BY PENETRATING SOFT BEDROCK FOR SEVERAL INCHES TO A MINIMUM RESISTANCE OF 20 BLOWS PER INCH OR BY CONTACTING HARD BEDROCK AND THE PILE RECEIVING AT LEAST 20 BLOWS. SELECT THE HAMMER SIZE TO ACHIEVE THE REQUIRED DEPTH TO BEDROCK AND REFUSAL.

THE ULTIMATE BEARING VALUE IS 55.0 TONS PER PILE FOR THE ABUTMENT PILES. THE ULTIMATE BEARING VALUE IS 61.6 TONS PER PILE FOR THE PIER PILES.

REAR ABUTMENT PILES:
32 PILES 45 FEET LONG, ORDER LENGTH

FORWARD ABUTMENT PILES:
32 PILES 50 FEET LONG, ORDER LENGTH

PIER PILES:
48 PILES 25 FEET LONG, ORDER LENGTH

ABBREVIATIONS

N.F. = NEAR FACE	P.E.J.F. = PREFORMED EXPANSION JOINT FILLER
F.F. = FAR FACE	C.P.P. = CORRUGATED PLASTIC PIPE
E.F. = EACH FACE	BOTT. = BOTTOM
TYP. = TYPICAL	INV. = INVERT
MIN. = MINIMUM	M.O.T. = MAINTENANCE OF TRAFFIC
STA. = STATION	FWD. = FORWARD
SPA. = SPACES	CONC. = CONCRETE
CONST. = CONSTRUCTION	EA. = EACH
APPR. = APPROACH	HMMW = HIGH MOLECULAR WEIGHT METHACRYLATE
EL. = ELEVATION	STD. = STANDARD
C.I.P. = CAST-IN-PLACE	DWG. = DRAWING
BRG. = BEARING	DIA. = DIAMETER
EX. = EXISTING	(R) = TO BE REMOVED
PH. = PHASE	(TBR) = TO BE RELOCATED
A.P.P. = AS PER PLAN	FRE = FIBERGLASS REINFORCED EPOXY
R.A. = REAR ABUTMENT	SW = STANDARD WALL
F.A. = FORWARD ABUTMENT	
I.D. = INSIDE DIAMETER	
O.D. = OUTSIDE DIAMETER	

MAINTENANCE OF TRAFFIC

FOR MAINTENANCE OF TRAFFIC NOTES AND DETAILS, REFER TO SHEETS 224 THRU 235 OF 1679.

ITEM SPECIAL - VANDAL PROTECTION FENCE, 6' STRAIGHT, COATED FABRIC, PATTERNED

THIS ITEM SHALL BE AS PER THE DETAILS IN THE PLAN WITH THE APPLICABLE PORTIONS OF STANDARD DRAWING VPF-1-90 AND THE MANUFACTURER'S RECOMMENDATIONS.

THE ANCHORS SHALL BE CAST-IN-PLACE WITH 6 3/4" MINIMUM EMBEDMENT OR INSTALLED IN THREADED FERRULE CONCRETE INSERTS. THE INSERTS SHALL BE APPROVED BY THE DIRECTOR.

THE COLOR OF THE FENCE FABRIC, RAILS, POSTS, PLATES, TIE WIRE, NUTS, BOLTS, CAULK, AND ANY ADDITIONAL VISUAL HARDWARE SHALL BE COATED BLACK.

THE ACCESS OPENING IN THE VANDAL PROTECTION FENCE FOR LIGHT POLES, SHOWN ON STANDARD CONSTRUCTION DRAWING VPF-1-90 (SHEET NUMBER 5/7), IS NOT TO BE USED ON THIS PROJECT. ALL WIRING CONNECTIONS FOR THE PROPOSED LIGHT POLES SHALL BE MADE IN THE STRUCTURE.

PROPRIETARY RETAINING WALL DATA

THE PROPRIETARY WALL SUPPLIER SHALL DESIGN THE INTERNAL STABILITY OF A MECHANICALLY STABILIZED EARTH (MSE) WALL IN ACCORDANCE WITH THE SPECIAL PROVISIONS TO SUPPORT THE ABUTMENT. THE DESIGN FOR INTERNAL STABILITY SHALL INCLUDE AN UNFACTORED HORIZONTAL STRIP LOAD FROM THE SUPERSTRUCTURE OF 1.7 K/FT APPLIED PERPENDICULAR TO THE FACE OF WALL AT THE BASE OF THE CONCRETE FOOTING.

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 CMS SECTIONS 102.05, 105.02 AND 513.04.

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 WHICH HAVE BEEN VERIFIED IN THE FIELD.

ITEM 511, CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN
ITEM 511, CLASS HP CONCRETE, BRIDGE DECK (PARAPET), AS PER PLAN
ITEM 511, CLASS HP CONCRETE, SUBSTRUCTURE, AS PER PLAN
ITEM 511, CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN
ITEM 511, CLASS HP CONCRETE, SIDEWALK, AS PER PLAN
ITEM 511, CLASS HP CONCRETE, TEST SLAB

GENERAL REQUIREMENTS:

THE PROVISIONS OF ITEM 511 SHALL APPLY EXCEPT AS NOTED BELOW.

MIX OPTIONS:

ALL SUPERSTRUCTURE, BRIDGE DECK, PARAPET, MEDIAN BARRIER, AND APPROACH SLAB CONCRETE SHALL BE THIS MIX (HP4, 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)

HP4, AS PER PLAN (GGBF SLAG + MICROSILICA)			
AGGREGATE TYPE	GRAVEL	LIMESTONE	SLAG
FINE AGGREGATE (LB)	1245	1245	1245
* #8 COARSE AGGREGATE (LB)	360	360	315
* #57 COARSE AGGREGATE (LB)	1315	1335	1155
TOTAL (LB)	2920	2940	2715
CEMENT CONTENT (LB)	400	400	400
GGBF SLAG (LB)	170	170	170
MICRO-SILICA (LB)	30	30	30
WATER TO CEMENTITIOUS RATIO +/- .01	0.43	0.43	0.43
AIR CONTENT +/- 2%	7	7	7

* ALL COARSE AGGREGATE SHALL HAVE AN ABSORPTION OF 1.00% OR GREATER AS DEFINED PER ASTM C127

THE WEIGHTS SPECIFIED IN THE CONCRETE TABLE WERE CALCULATED FOR MATERIALS OF THE FOLLOWING BULK SPECIFIED 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 SPECIFIED GRAVITIES DIFFERING MORE THAN PLUS OR MINUS 0.02 FROM THESE, THE WEIGHTS IN THE TABLE WILL BE CORRECTED.

PARAPET CONSTRUCTION (FORMED AND POURED):

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 (GILLMORE NEEDLE). TESTING SHALL BE PERFORMED BY THE CONTRACTOR AT NO COST TO THE STATE.

THE MINIMUM CONCRETE SLUMP DURING PLACEMENT OF FORMED CONCRETE PARAPETS SHALL BE 6 INCHES, WITH A MAXIMUM SLUMP OF 8 INCHES.

CRACK CONTROL JOINTS:

FOR BOTH SLIP FORMED AND FORMED AND POURED PARAPETS, THE CONTRACTOR SHALL CONSTRUCT 1 1/2" DEEP AND 1/4" WIDE CRACK CONTROL JOINTS SPACED AT A MINIMUM OF 6 FT AND A MAXIMUM OF 8 FT ON CENTER. THE CRACK 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. THE CONTRACTOR MAY EITHER FORM THE CRACK CONTROL JOINTS IN THE FORM LINERS, OR, WITHIN 24 HOURS OF PLACEMENT, SAW CUT THE CRACK 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 1 1/2" WITH POLYURETHANE OR POLYMERIC MATERIAL CONFORMING TO ASTM C920, TYPE S.

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

ITEM	UNITS	DESCRIPTION
511E50001	CUBIC YARD	CLASS HP CONCRETE, BRIDGE DECK, AS PER PLAN
511E50101	CUBIC YARD	CLASS HP CONCRETE, BRIDGE DECK, (PARAPET), AS PER PLAN
511E50201	CUBIC YARD	CLASS HP CONCRETE, SUBSTRUCTURE, AS PER PLAN
511E51001	CUBIC YARD	CLASS HP CONCRETE, SUPERSTRUCTURE, AS PER PLAN
511E51501	CUBIC YARD	CLASS HP CONCRETE, SIDEWALK, AS PER PLAN
511E52000	LUMP	CLASS HP CONCRETE, TEST SLAB