

**GENERAL NOTES (BRIDGE)****SPECIFICATIONS**

ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

**DESCRIPTION OF WORK**

WORK CONSISTS OF REMOVAL OF EXISTING BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE WHILE KEEPING EXISTING H-PILES INTACT PER CONSTRUCTION PHASING PLAN. CONTRACTOR IS RESPONSIBLE FOR STABILITY OF EXISTING RETAINING WALLS AND SOIL BEHIND THE ABUTMENT DURING DEMOLITION. EROSION CONTROL PLAN AND TRAFFIC PHASING PLAN TO BE FOLLOWED DURING CONSTRUCTION.

ADDITIONAL H-PILES TO BE INSTALLED PER FOUNDATION LAYOUT PLAN FOLLOWED BY CONSTRUCTION OF BRIDGE SUBSTRUCTURE AND SUPERSTRUCTURE PER PROJECT DOCUMENTS.

CONTRACTOR TO CONTACT ENGINEER IF THE CONDITION ENCOUNTERED IN THE FIELD DIFFERS FROM THE PROJECT DOCUMENTS.

**VERIFICATION EXISTING CONDITIONS**

ALL DIMENSIONS OF THE EXISTING BRIDGE COMPONENTS SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS NECESSARY TO CONNECT THE NEW MATERIALS AND SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY THEREOF.

BIDDERS SHALL FULLY INFORM THEMSELVES OF THE NATURE OF THE WORK AND CONDITION UNDER WHICH IT WILL BE PERFORMED. THE CONTRACTOR SHALL ADOPT METHODS CONSISTENT WITH GOOD CONSTRUCTION PRACTICE AND SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO THE EXISTING BRIDGE OR ATTACHMENTS. ANY DAMAGE TO EXISTING BRIDGE STRUCTURE OR ROADWAY DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE ENGINEER.

CONSTRUCTION PLANS FOR THE EXISTING BRIDGE STRUCTURE MAY BE OBTAINED FROM THE REPRODUCTION BRANCH OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION.

**PILING CAPACITY**

SEE GENERAL PLAN & ELEVATION SHEETS FOR CAPACITY OF ABUTMENT AND PIER PILES. ALL PILES SHALL BE AASHTO M270 GRADE 50.

THE FOLLOWING FORMULA (GATES EQUATION) SHALL BE USED TO DETERMINE THE AXIAL LOAD RESISTANCE OF THE DRIVEN FOUNDATION PILES:

$$\text{AXIAL LOAD RESISTANCE} = \phi [0.875 \sqrt{E} \text{ LOG}_{10}(10N)] - 50 \text{ (TONS)}$$

WHERE:

- $\phi$  = RESISTANCE FACTOR OF 0.4
- E = ENERGY PRODUCED BY THE HAMMER PER BLOW IN FOOT-POUNDS, FOR GRAVITY AND SINGLE ACTING DIESEL HAMMERS, THE VALUE IS BASED ON THE ACTUAL RAM STROKE OBSERVED IN THE FIELD AND MEASURED IN FEET MULTIPLIED BY THE RAM WEIGHT IN POUNDS.
- N = AVERAGE NUMBER OF HAMMER BLOWS PER INCH OF PILE PENETRATION FOR THE LAST 10 TO 20 BLOWS DELIVERED TO THE PILE HEAD.

THE ABOVE FORMULA IS ONLY APPLICABLE WHEN:

- THE PILE DRIVING HAMMER HAS A FREE FALL (GRAVITY & SINGLE ACTING HAMMERS ONLY.)
- THE HEAD OF THE PILE IS NOT BROOMED, CRUSHED OR OTHERWISE DAMAGED.
- THE PENETRATION IS QUICK AND UNIFORM.
- THERE IS NO APPRECIABLE REBOUND OF THE HAMMER, AND A FOLLOWER IS NOT USED.

THE NUMBER OF BLOWS PER INCH OF PILE PENETRATION MAY BE MEASURED EITHER DURING INITIAL DRIVING OR BY RE-DRIVING WITH A WARM HAMMER OPERATED AT FULL ENERGY AFTER A PILE SET PERIOD, AS DETERMINED BY THE ENGINEER.

IF WATER JETS ARE USED IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA SHOWN ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

**STAINLESS STEEL FIXED BEARING ASSEMBLY**

PROVIDE AND INSTALL FIXED BEARING ASSEMBLIES OF THE SIZE, SHAPE, AND LOCATION AS DETAILED IN THE PLANS. THERE IS AN ESTIMATED TOTAL OF 175 POUNDS OF STAINLESS STRUCTURAL STEEL FOR EACH FIXED BEARING ASSEMBLY LOCATION AT THE ABUTMENTS.

ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE FIXED BEARING ASSEMBLIES AS SHOWN IN THE PLANS, INCLUDING ELASTOMERIC PADS, ANCHOR PLATES, CONTACT PLATES, ANCHOR BOLTS, NUTS, WASHERS, LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER EACH OF "STAINLESS STEEL FIXED BEARING ASSEMBLY".

**STAINLESS STEEL EXPANSION BEARING ASSEMBLY**

PROVIDE AND INSTALL EXPANSION BEARING ASSEMBLIES OF THE SIZE, SHAPE, AND LOCATION AS DETAILED IN THE PLANS. THERE IS AN ESTIMATED TOTAL OF 175 POUNDS OF STAINLESS STRUCTURAL STEEL FOR EACH EXPANSION BEARING ASSEMBLY LOCATION AT THE PIERS.

ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE EXPANSION BEARING ASSEMBLIES AS SHOWN IN THE PLANS, INCLUDING ELASTOMERIC PADS, ANCHOR PLATES, CONTACT PLATES, ANCHOR BOLTS, NUTS, WASHERS, LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER EACH OF "STAINLESS STEEL EXPANSION BEARING ASSEMBLY".

**SEALED EXPANSION JOINT**

THE SEALED EXPANSION JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARDS EJ-SK AND EJ-DTL AND IN A MANNER APPROVED BY THE ENGINEER. ALL COSTS NECESSARY TO COMPLETE THE WORK AS SPECIFIED OR AS SHOWN IN THE PLANS INCLUDING THE COST OF MATERIALS, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF "SEALED EXPANSION JOINT".

**STRUCTURAL STEEL M270 GRADE 50W**

THE ITEM "STRUCTURAL STEEL" SHALL INCLUDE THE INSTALLATION OF THE FOLLOWING ITEMS AS SPECIFIED OR AS SHOWN IN THE PLANS:

1. STEEL BEAMS
2. INTERMEDIATE AND END DIAPHRAGMS
3. STIFFENERS AND CONNECTION PLATES
4. SHEAR STUDS, BOLTS, NUTS, AND WASHERS

ALL NEW STRUCTURAL STEEL SHALL CONFORM TO THE AASHTO M270 GRADE 50W (WEATHERING STEEL, CHARPY V-NOTCH TESTING NOT REQUIRED). USE SHEAR CONNECTORS CONFORMING TO AASHTO M169 (ASTM A108) GRADE 1015, 1018, OR 1020. PROVIDE WELDING WITH WEATHERING CHARACTERISTICS. PROVIDE BOLTS, NUTS, AND WASHERS THAT CONFORM TO AASHTO M164 (ASTM A325). ALL COSTS FOR REPLACING THE EXISTING BOLTS, NUTS, AND WASHER FOR THE END DIAPHRAGMS INCLUDING MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER POUND OF "STRUCTURAL STEEL M270 GRADE 50W".

**APPROACH SLAB**

CLASS AA CONCRETE SHALL BE USED IN THE APPROACH SLABS. THE QUANTITY GIVEN IS BASED ON THE ACTUAL SQUARE YARDS OF THE APPROACH SLABS. ALL COSTS OF CONCRETE, EPOXY COATED REINFORCING STEEL EXCAVATION, LABOR, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF "APPROACH SLAB".

**EXISTING H-PILE TREATMENT**

EXISTING H-PILE HEADS SHOULD BE EXPOSED A MINIMUM OF THREE FEET IN DEPTH AND CLEANED FREE OF RUST AND OTHER CONTAMINANTS TO SSPC SP3. IF SECTION LOSS GREATER THAN 5% OF THE SECTION AREA IS OBSERVED WITHIN THE THREE FOOT SECTION THEN THE PROCESS DESCRIBED ABOVE SHALL BE REPEATED IN ONE FOOT INCREMENTS UNTIL A SECTION LOSS LESS THAN 5% IS OBSERVED OVER A TWO FOOT REGION. COORDINATE WITH ENGINEER PRIOR TO PROCEEDING TO NEXT STEP.

PORTION OF H-PILE WITH SECTION LOSS AS INDICATED ABOVE SHALL BE REMOVED AND REPLACED WITH A NEW H-PILE SECTION TO MATCH THE EXISTING H-PILE SECTION. FIELD WELD PER WELDED SPLICE DETAIL SHOWN IN ODOT STANDARD DRAWING HP1-2.

**WATER REPELLENT (VISUALLY INSPECTED)**

A PENETRATING WATER REPELLENT SURFACE TREATMENT SHALL BE APPLIED TO THE FOLLOWING CONCRETE SURFACES OF THE BRIDGE:

- (A) EDGES AND UNDERSIDE CANTILEVER PORTION OF THE BRIDGE DECK
- (B) THE ROADWAY FACE, AND TOP OF THE CONCRETE TRAFFIC RAILS
- (C) EXPOSED PORTIONS OF ABUTMENTS
- (D) THE TOPS AND VERTICAL FACES OF THE PIER CAPS AND PEDESTALS

**REMOVAL OF EXISTING BRIDGE STRUCTURE**

ITEM "REMOVAL OF EXISTING BRIDGE STRUCTURE" CONSISTS OF REMOVAL AND DISPOSAL OF THE EXISTING ELEMENTS OF BRIDGES "A" & "B" AS SHOWN IN THE PLANS. WITH EXCEPTION TO THE EXISTING STEEL PILES WHICH SHALL REMAIN AND BECOME PART OF THE NEW FOUNDATION.

BRIDGE "A" CONTAINS APPROXIMATELY 98,200 LBS OF STRUCTURAL STEEL AND BRIDGE "B" CONTAINS APPROXIMATELY 133,200 LBS OF STRUCTURAL STEEL, UNLESS OTHERWISE NOTED. THE STRUCTURE AND MATERIALS WILL BECOME PROPERTY OF THE CONTRACTOR AND WILL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER. THE EXISTING FIXED AND EXPANSION BEARING ARE TO REMAIN THE PROPERTY OF ODOT.

UPON COMPLETION OF REMOVAL OF THE EXISTING BEAMS ON BRIDGES "A" AND "B", THE ENGINEER WILL DETERMINE THE FINAL AVAILABILITY OF THE BEAMS FOR REUSE BY THE TULSA COUNTY COMMISSIONERS OR CIRCUIT ENGINEERING DISTRICTS (CED'S). BEAMS THAT ARE DETERMINED TO BE AVAILABLE FOR REUSE SHALL BE PICKED UP BY THE COUNTY OR CED WITHIN 30 DAYS FROM THE DATE OF DEMOLITION. BEAMS THAT ARE DETERMINED TO BE NOT AVAILABLE FOR REUSE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER. BRIDGE "A" CONTAINS 10-WF27x83#x31.7' LONG BEAMS AND 5-WF36x135#x64.8' LONG BEAMS. BRIDGE "B" CONTAINS 14-WF27x84#x31.7' LONG BEAMS AND 7-WF36x135#x64.8' LONG BEAMS. THE CONTRACTOR SHALL USE CARE IN HANDLING ALL BEAMS PRIOR TO INSPECTION BY THE ENGINEER.

**REMOVED MATERIAL**

ALL MATERIAL REMOVED DURING THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

**DECK HAUNCHES**

PLAN QUANTITY FOR CLASS AA CONCRETE INCLUDES 5.6 CUBIC YARDS FOR HAUNCHES OVER THE STEEL BEAMS. NO PAYMENT WILL BE MADE FOR DIFFERENCES BETWEEN PLAN QUANTITY AND THE ACTUAL QUANTITY OF HAUNCH CONCRETE.

(BR-1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITIES ONLY. SEE SECTION 109.01(B) OF THE 2009 STANDARD SPECIFICATIONS.

- (1) QUANTITY SHOWN FOR SEALER RESIN ESTIMATED AT 0.011 GALLONS PER FOOT OF CONSTRUCTION JOINT.
- (2) THIS ITEM TO BE USED AT THE DISCRETION OF THE ENGINEER TO MAINTAIN TRAFFIC DURING CONSTRUCTION.
- (3) SLOPE WALLS TO BE FORMED WITH FORM LINER SIMILAR TO CFL FF008 STANDARD SERIES: ASHLAR STONE, OR EQUIVALENT, AS APPROVED AND DIRECTED BY THE ENGINEER AND AS SHOWN ON THE PLANS. COLOR SHALL BE FEDERAL STANDARD 595 COLOR 30450, OR EQUIVALENT, AS APPROVED AND DIRECTED BY THE ENGINEER.

**STAY-IN-PLACE FORMS**

STAY-IN-PLACE STEEL DECK FORMS WILL NOT BE USED.

REVISIONS		
REV. NO.	DESCRIPTION	DATE
▲	REMOVE PAY ITEM 535	08/04/2017

JP28884(04) 0200 BRIDGE A				
NBI NO. 17224 US-64 WESTBOUND OVER 97TH W. AVENUE 30'-65'-30' STEEL I-BEAM SPANS 49'-0" CL. RDWY. W/F-SHAPED TRAFFIC RAILS, SKEWED 5° LEFT FORWARD				
ITEM	DESCRIPTION	UNIT	QUANTITY	
501(G)	6309 CLSM BACKFILL	(BR-1) CY	20.00	
504(A)	1304 APPROACH SLAB	(BR-1) SY	199.30	
504(B)	1305 SAW-CUT GROOVING	(BR-1) SY	899.50	
504(C)	6250 SEALED EXPANSION JOINT	(BR-1) LF	50.20	
504(E)	6190 42" F-SHAPED PARAPET	(BR-1) LF	320.10	
506(A)	4050 STRUCTURAL STEEL M270 GRADE 50W	(BR-1) LB	138,920.00	
507(A)	6170 STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	14.00	
507(B)	6174 STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	28.00	
509(A)	1326 CLASS AA CONCRETE	(BR-1) CY	206.80	
509(B)	1328 CLASS A CONCRETE	(BR-1) CY	254.90	
510(C)	6138 SLOPE WALL (5")	(3) SY	445.70	
511(B)	6010 EPOXY COATED REINFORCING STEEL	(BR-1) LB	87,850.00	
513(B)	6019 CLASS B BRIDGE DECK REPAIR	(2) SY	100.00	
514(A)	6010 PILES, FURNISHED (HP 10X42)	LF	1,501.00	
514(B)	6292 PILES, DRIVEN (HP 10X42)	LF	1,501.00	
514(L)	6220 PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00	
515(A)	6013 WATER REPELLENT (VISUALLY INSPECTED)	(BR-1) SY	595.00	
523(A)	6550 SEALER CRACK PREPARATION	(BR-1) LF	52.20	
523(B)	6560 SEALER RESIN	(BR-1)(1) GAL	0.60	
619(D)	1397 REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM	1.00	

JP28884(04) 0201 BRIDGE B				
NBI NO. 17225 US-64 EASTBOUND OVER 97TH W. AVENUE 30'-65'-30' STEEL I-BEAM SPANS 49'-0" CL. RDWY. W/F-SHAPED TRAFFIC RAILS, SKEWED 5° LEFT FORWARD				
ITEM	DESCRIPTION	UNIT	QUANTITY	
501(G)	6309 CLSM BACKFILL	(BR-1) CY	20.00	
504(A)	1304 APPROACH SLAB	(BR-1) SY	195.60	
504(B)	1305 SAW-CUT GROOVING	(BR-1) SY	900.40	
504(C)	6250 SEALED EXPANSION JOINT	(BR-1) LF	50.20	
504(E)	6190 42" F-SHAPED PARAPET	(BR-1) LF	330.20	
506(A)	4050 STRUCTURAL STEEL M270 GRADE 50W	(BR-1) LB	138,920.00	
507(A)	6170 STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	14.00	
507(B)	6174 STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	28.00	
509(A)	1326 CLASS AA CONCRETE	(BR-1) CY	206.80	
509(B)	1328 CLASS A CONCRETE	(BR-1) CY	244.90	
510(C)	6138 SLOPE WALL (5")	(3) SY	445.70	
511(B)	6010 EPOXY COATED REINFORCING STEEL	(BR-1) LB	86,112.00	
513(B)	6019 CLASS B BRIDGE DECK REPAIR	(2) SY	100.00	
514(A)	6010 PILES, FURNISHED (HP 10X42)	LF	1,076.00	
514(B)	6292 PILES, DRIVEN (HP 10X42)	LF	1,076.00	
514(L)	6220 PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00	
515(A)	6013 WATER REPELLENT (VISUALLY INSPECTED)	(BR-1) SY	596.80	
523(A)	6550 SEALER CRACK PREPARATION	(BR-1) LF	52.20	
523(B)	6560 SEALER RESIN	(BR-1)(1) GAL	0.60	
619(D)	1397 REMOVAL OF EXISTING BRIDGE STRUCTURE	LSUM	1.00	

JP28884(04) STAKING 0600				
ITEM	DESCRIPTION	UNIT	QTY	
642(B)	0096 CONSTRUCTION STAKING LEVEL II	LSUM	1.00	

JP28884(04) CONSTRUCTION 0640				
ITEM	DESCRIPTION	UNIT	QTY	
220	2800 SWPPP DOCUMENTATION AND MANAGEMENT	LSUM	1.00	
641	1399 MOBILIZATION	LSUM	1.00	

DESIGN	DLA	11/16	TULSA COUNTY	US-64 OVER 97TH W. AVE.
DRAWN	SDK	11/16	OKLAHOMA DEPARTMENT OF TRANSPORTATION	
CHECKED	HRA	11/16	PAY QUANTITIES AND NOTES (BRIDGE)	
APPROVED				
WALTER P MOORE			STATE JOB NO.	28884(04) SHEET NO.
				6



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