

**SPECIFICATIONS:**

COMPLY WITH THE REQUIREMENTS OF THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

**CONCRETE:**

CONCRETE RAIL ON THIS BRIDGE IS MEASURED FROM END TO END OF ABUTMENT WINGS FOR PAY PURPOSES.

BEFORE ANY BEAM IS ERECTED, THE ENGINEER WILL CHECK ALL BEARING ELEVATIONS. ANY ELEVATION WHICH IS OFF MORE THAN 0.02 FEET SHALL BE CORRECTED IN A MANNER APPROVED BY THE ENGINEER.

BEAMS SHALL NOT BE ERECTED ON ABUTMENTS UNTIL CONCRETE HAS BEEN IN PLACE AT LEAST 7 DAYS AND HAS REACHED AT LEAST 80 PERCENT OF ITS REQUIRED 28 DAYS COMPRESSIVE STRENGTH.

**PILE DRIVING EQUIPMENT**

USE A PILE DRIVING HAMMER OF THE SIZE AND TYPE CAPABLE OF CONSISTENTLY DELIVERING THE EFFECTIVE DYNAMIC ENERGY SUFFICIENT TO DRIVE THE PILES TO THE REQUIRED TIP ELEVATION AND TO ACHIEVE THE FACTORED PILE CAPACITY WITHOUT EXCEEDING THE LIMITATIONS SET ON THE ALLOWABLE DRIVING STRESS IN ACCORDANCE WITH SECTION 514.03.A(2). USE GRADE 50 STEEL FOR PILING

**PILING CAPACITY:**

THE FACTORED PILE REACTION FOR EACH HP12X53 PILE AT EACH ABUTMENT IS 83.9 TCNS.

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

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

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USED IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

**STRUCTURAL STEEL:**

STRUCTURAL STEEL FOR PILING SHALL CONFORM TO AASHTO M270 (ASTM A572), GRADE 50.

PROVIDE STRUCTURAL STEEL FOR ANCHOR PLATES, BUILT-UP CONTACT ANGLES AND CONTINUOUSLY THREADED ANCHOR RODS IN ACCORDANCE WITH AASHTO M270 (ASTM A709) GRADE 50W (WEATHERING STEEL, CHARPY V-NOTCH TESTING NOT REQUIRED). USE STEEL NUTS AND WASHERS CONFORMING TO AASHTO M291 (ASTM A 563), GRADE C3 OR DH3 AND AASHTO M293 (ASTM F436), TYPE 3, CIRCULAR RESPECTIVELY. PERFORM ALL WELDING CONSISTENT WITH PROCEDURES FOR WEATHERING STEEL.

**MISCELLANEOUS:**

THE CONTRACTOR SHALL FORM 2" DIAMETER AIR HOLES THROUGH THE SLAB. HOLES ARE TO BE PLACED IN THE CENTER OF EACH BAY NEAR THE CENTER OF THE SPAN BUT OFFSET FROM THE DIAPHRAGMS. ALL COST OF FORMING HOLES IS TO BE INCLUDED IN THE PRICE FOR " CLASS AA CONCRETE".

**PAY QUANTITY NOTES**

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

(BR-2) THE ITEM "REMOVAL OF EXISTING BRIDGE STR." CONSISTS OF REMOVAL AND DISPOSAL OF THE EXISTING 3-20'-0" CONCRETE SLAB SPAN WITH REINFORCED CONCRETE DECK FOR SUPERSTRUCTURE, ABUTMENTS AND PIERS FOR SUBSTRUCTURE AT APPROXIMATELY STA. 106+20.60, CL SURVEY IN ACCORDANCE WITH SECTION 619.04(b)2 OF THE SPECIFICATIONS AND IN A MANNER APPROVED BY THE ENGINEER.

J/P No. 25468(04)				
SUMMARY OF BRIDGE QUANTITIES				
0200 BRIDGE "A", 105' TYPE IV P.C. BEAM SPAN, 32 CLR. ROADWAY WITH TR3 RAIL				
ITEM		DESCRIPTION	UNITS	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON	(BR-1) CY	210.00
501(G)	6309	CLSM BACKFILL	(BR-1) CY	108.00
503(A)	1313	PRESTRESSED CONCRETE BEAMS (TYPE IV)	(BR-1) LF	418.67
504(A)	1304	APPROACH SLAB	SY	141.60
504(B)	1305	SAW-CUT GROOVING	(BR-1) SY	447.50
504(D)	6239	CONCRETE RAIL (TR3)	(BR-1) LF	276.40
506(A)	1322	STRUCTURAL STEEL	(BR-1) LB	760.00
507(A)	6172	WEATHERING STEEL FIXED BEARING ASSEMBLY	EA	4.00
507(B)	6176	WEATHERING STEEL EXPANSION BEARING ASSEMBLY	EA	4.00
509(A)	1326	CLASS AA CONCRETE	(BR-1) CY	104.00
509(B)	1328	CLASS A CONCRETE	(BR-1) CY	79.80
511(A)	1332	REINFORCING STEEL	(BR-1) LB	32,960.00
514(A)	6010	PILES, FURNISHED (HP 10X42)	LF	88.00
514(A)	6011	PILES, FURNISHED (HP 12X53)	LF	239.00
514(B)	6292	PILES, DRIVEN (HP 10X42)	LF	88.00
514(B)	6294	PILES, DRIVEN (HP 12X53)	LF	239.00
541(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00
601(B)	1353	TYPE I-A PLAIN RIPRAP	TON	1,410.00
601(C)	1355	TYPE I-A FILTER BLANKET	TON	410.00
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	LF	64.00
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND	LF	50.00
619(D)	1397	REMOVAL OF EXISTING BRIDGE STRUCTURE	(BR-2) LSUM	1.00

12/16/2016 N:\AD06 YANNUBBEE CREEK\Drawings\AD06-03-SUMMARY Pay Quantities (Bridge).dgn

DESIGN	BP	06/16	McCURTAIN COUNTY	BRIDGE OVER YANUBBEE CREEK
DRAWN	JH	06/16	SUMMARY OF PAY QUANTITIES AND GENERAL NOTES (BRIDGE)	
CHECKED	SK	06/16		
APPROVED				
SQUAD	KCS		STATE J/P NO. 25468(04)	SHEET NO. 3