

BRIDGE GENERAL CONSTRUCTION NOTES:

SPECIFICATIONS:

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

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 AN AXIAL LOAD RESISTANCE EQUAL TO OR GREATER THAN THE FACTORED PILE REACTION WITHOUT EXCEEDING THE LIMITATIONS SET ON THE ALLOWABLE DRIVING STRESSES IN ACCORDANCE WITH SECTION 514.03.A(2).

ABUTMENT PILING CAPACITY:

THE FACTORED REACTION FOR EACH HP 12X53 PILE AT EACH ABUTMENT IS 75.2 TONS PER PILE. DRIVE ALL PILING UNTIL AXIAL LOAD RESISTANCE IS GREATER THAN THE FACTORED REACTION OF EACH PILE. THE FOLLOWING FORMULA (GATES EQUATION) SHALL BE USED TO DETERMINE THE AXIAL LOAD RESISTANCE OF THE DRIVEN FOUNDATION PILES:

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

WHERE:

- ϕ = 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IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA SHOWN ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

CONCRETE:

PROVIDE ALL PEDESTAL CONCRETE EDGES WITH A 3/4" CHAMFER. PROVIDE ALL OTHER EXPOSED CONCRETE EDGES OF THE SUBSTRUCTURE WITH A 1 1/2" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. PROVIDE ALL EXPOSED CONCRETE EDGES OF THE SUPERSTRUCTURE WITH A 3/4" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. USE SIZED LUMBER FOR ALL CHAMFER STRIPS. PROVIDE A BURLAP OR ASTROTURF DRAG FINISH ON DECK SLAB CONCRETE. DO NOT TINE OR SAW-CUT GROOVE.

CONCRETE INTERMEDIATE DIAPHRAGMS:

ONCE THE CONCRETE HAS BEEN PLACED FOR THE CONCRETE INTERMEDIATE DIAPHRAGMS, WAIT A MINIMUM OF 24 HOURS BEFORE REMOVING THE SIDE FORMS. DO NOT REMOVE THE BOTTOM FORM FOR A MINIMUM OF 3 DAYS, OR AT THE DISCRETION OF THE ENGINEER. THIS TIME CAN BE SHORTENED IF THE CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH. DO NOT PLACE THE CONCRETE FOR THE DECK SLAB OR APPLY OTHER MASSIVE LOADS TO THE BEAMS OR DIAPHRAGMS UNTIL THE CONCRETE IN THE DIAPHRAGMS HAS BEEN IN PLACE FOR A MINIMUM OF 10 DAYS, OR AT THE DISCRETION OF THE ENGINEER. THIS TIME MAY BE SHORTENED IF THE CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH.

PERFORATED PIPE UNDERDRAIN:

ITEM "6" PERFORATED PIPE UNDERDRAIN - ROUND" INCLUDES 30 FEET OF PERFORATED PIPE AND 5 CUBIC YARDS OF PIPE UNDERDRAIN COVER MATERIAL FOR EACH ABUTMENT. THE INSTALLATION OF THE PERFORATED PIPE AND PIPE UNDERDRAIN MATERIAL SHALL BE SHOWN IN THE PLANS AND ON STANDARD PUD-3-(LATEST REVISION). ALL COSTS OF THE PERFORATED PIPE UNDERDRAIN INSTALLATION INCLUDING BACKFILLING, MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF "6" PERFORATED PIPE UNDERDRAIN - ROUND".

NON-PERFORATED UNDERDRAIN:

ITEM "6" NON-PERFORATED PIPE UNDERDRAIN - ROUND" INCLUDES 20 FEET OF NON-PERFORATED PIPE AND 10 CUBIC YARDS OF TRENCH EXCAVATION AND 10 CUBIC YARDS OF STANDARD BEDDING MATERIAL FOR EACH ABUTMENT. THE INSTALLATION OF THE PERFORATED PIPE AND PIPE UNDERDRAIN COVER MATERIAL SHALL BE AS SHOWN ON THE PLANS AND ON STANDARD PUD-3-(LATEST REVISION). ALL COSTS OF THE NON-PERFORATED PIPE UNDERDRAIN INSTALLATION INCLUDING BACKFILLING, MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF "6" NON-PERFORATED PIPE UNDERDRAIN - ROUND".

ROADWAY PAY QUANTITY NOTES:

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

(1) REPLACES GRANULAR BACKFILL ON STD. CB26..32-C-SK30-ABUT-MISC-01E. COMPACT TO AT LEAST 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH SUBSECTION 303.04E.

(2) ESTIMATED AT 120 LBS PER CU FT

(3) ESTIMATED AT 110 LBS PER CU FT


(4) THE ITEM "REMOVAL OF THE EXISTING BRIDGE STRUCTURE" SHALL CONSIST OF THE FOLLOWING:

REMOVAL OF THE EXISTING 98' LONG THRU TRUSS & 21' I-BEAM SPAN BRIDGE WITH TIMBER DECK AND CONCRETE PIER AND ABUTMENTS AT APPROXIMATE STA. 16+10. MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER IN ACCORDANCE WITH SECTION 619.04(b)2 OF THE STANDARD SPECIFICATIONS.

PAY QUANTITIES (BRIDGE)

| 0200 BR A 105' TYPE IV PC BEAM 26'-0" CLR RDY w/ TR-3 SKEW 30' RF | | | | | J/P 31162(04) |
|---|----------|---|----------------|------|---------------|
| SPEC. NO. | BAMS NO. | DESCRIPTION | PAY ITEM NOTES | UNIT | QUANTITY |
| 303(A) | 2100 | AGGREGATE BASE TYPE A | 1 | CY | 102.00 |
| 501(B) | 1307 | SUBSTRUCTURE EXCAVATION COMMON | B-1 | CY | 292.00 |
| 503(A) | 1313 | PRESTRESSED CONCRETE BEAM TYPE IV | B-1 | LF | 314.00 |
| 504(D) | 6239 | CONCRETE RAIL (TR3) | B-1 | LF | 316.30 |
| 506(A) | 1322 | STRUCTURAL STEEL | B-1 | LB | 690.00 |
| 507(A) | 6172 | WEATHERING STEEL FIXED BEARING ASSEMBLY | | EA | 3.00 |
| 507(B) | 6176 | WEATHERING STEEL EXPANSION BEARING ASSEMBLY | | EA | 3.00 |
| 509(A) | 1326 | CLASS AA CONCRETE | B-1 | CY | 86.10 |
| 509(B) | 1328 | CLASS A CONCRETE | B-1 | CY | 100.60 |
| 511(A) | 1332 | REINFORCING STEEL | B-1 | LB | 36,410.00 |
| 514(A) | 6010 | PILES, FURNISHED (HP 10X42) | | LF | 120.00 |
| 514(A) | 6011 | PILES, FURNISHED (HP 12X53) | | LF | 231.00 |
| 514(B) | 6292 | PILES, DRIVEN (HP 10X42) | | LF | 120.00 |
| 514(B) | 6294 | PILES, DRIVEN (HP 12X53) | | LF | 231.00 |
| 514(L) | 6220 | PILE SPLICE, H-PILE (NON-BIDDABLE) | | EA | 1.00 |
| 601(B) | 1353 | TYPE I-A PLAIN RIPRAP | 2 | TON | 1,334.00 |
| 601(C) | 1355 | TYPE I-A FILTER BLANKET | 3 | TON | 235.00 |
| 613(H) | 6204 | 6" PERFORATED PIPE UNDERDRAIN, ROUND | | LF | 92.70 |
| 613(I) | 6207 | 6" NON-PERF. PIPE UNDERDRAIN RND. | | LF | 65.00 |
| 619(D) | 1397 | REMOVAL OF EXISTING BRIDGE STRUCTURE | 4 | LSUM | 1.00 |

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|--|-----------------|------------------------------|----|---|
| CLOUD CREEK | MUSKOGEE COUNTY | Design | TE | 05/14 |
| SUMMARY OF PAY QUANTITIES & NOTES (BRIDGE) | | Detail | RR | 05/14 |
| | | Check | TE | 05/14 |
| STATE OF OKLAHOMA | | DEPARTMENT OF TRANSPORTATION | |  HOLLOWAY UPDIKE & BELLEN, INC. ENGINEERS |
| | | State J/P No. 31162(04) | | |