GENERAL NOTES (BRIDGE "A")

SPECIFICATIONS:

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

ABUTMENT PILING CAPACITY:

THE FACTORED REACTION FOR EACH HP10x42 PILE AT EACH ABUTMENT ON BRIDGE "A" IS 75.3 TONS.

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

AXIAL LOAD RESISTANCE = $\phi[(0.875\sqrt{E}\ \ LOG_{10}(10N))-50]$ (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IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA SHOWN ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

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 STRESSES IN ACCORDANCE WITH SECTION 514.03.A.2.

DECK SLAB CONSTRUCTION AND STAY-IN-PLACE FORMS:

FOR DECK SLAB CONSTRUCTION AND STAY-IN-PLACE DECK FORM NOTES, SEE STD. CB32-I-SK0-XSECT-PC234-01E.

PENETRATING WATER REPELLENT SURFACE TREATMENT:

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

(A) THE TOP OF THE PIER CAPS INCLUDING ALL SURFACES OF THE PEDESTALS AND STEP, AND ALL VERTICAL FACES OF THE PIER CAPS.

APPROACH SLABS:

CLASS AA CONCRETE SHALL BE USED IN THE APPROACH SLABS. THE QUANTITY GIVEN IS BASED ON THE ACTUAL SQUARE YARDS OF THE APPROACH SLABS. THE CONTRACT UNIT PRICE FOR APPROACH SLAB SHALL BE FULL COMPENSATION FOR ALL CONCRETE, INCLUDING THE APPROACH SLAB SUPPORTS AT THE BACK FACE OF THE END DIAPHRAGMS, REINFORCING STEEL (INCLUDING AS, BT1 AND SV1 BARS), BACKER RODS, RAPID CURE JOINT SEALANT, POLYSTYRENE, PREFORMED EXPANSION MATERIAL, POLYETHYLENE SHEETING, SAWING, GRINDING, EXCAVATIONS, BACKFILL, MATERIALS, LABOR, EQUIPMENT AND OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SPECIFIED IN THE PLANS.

RIPRAP:

A 24 INCH THICK LAYER OF TYPE I-A PLAIN RIPRAP WITH A 6" THICK LAYER OF TYPE I-A FILTER BLANKET SHALL BE PLACED AT THE ABUTMENTS AS SHOWN ON THE PLANS. THE FILTER BLANKET SHALL BE PLACED IN ONE LAYER.

MISCELLANEOUS EXCAVATIONS REQUIRED FOR RIPRAP PLACEMENT SHALL BE INCLUDED IN THE PRICE BID FOR "TYPE I-A PLAIN RIPRAP", PER TON.

PERFORATED AND NON-PERFORATED PIPE UNDERDRAINS:

FOR LOCATIONS OF 6" PERFORATED AND NON-PERFORATED PIPE UNDERDRAINS, SEE SHEET NO. 17 AND REFER TO STD. CB26..32-I-SK0-ABUT-MISC FOR INSTALLATION DETAILS AND NOTES.

STRUCTURAL STEEL:

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 (GRADE 50W), UNLESS OTHERWISE NOTED.

STEEL ANCHOR PLATES, ANCHOR BOLTS, NUTS, WASHERS AND WELD MATERIAL SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS 507 AND 724.03 OF THE STANDARD SPECIFICATIONS, AND PER THE ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.

ANCHOR PLATES FOR FIXED AND EXPANSION BEARINGS SHALL BE MATCH MARKED, SHIPPED LOOSE, AND FIELD WELDED IN ORDER THAT ANY NECESSARY MINOR HORIZONTAL ADJUSTMENT OF THE ANCHOR PLATE CAN BE MADE.

ALL SHOP AND FIELD WELDING SHALL BE ARC WELDING AND SHALL BE DONE IN ACCORDANCE WITH THE CURRENT ANSI/AWS D1.5 BRIDGE WELDING CODE. FIELD WELDERS SHALL BE PRE-QUALIFIED BY THE OKLAHOMA DEPARTMENT OF TRANSPORTATION.

METAL USED IN FIELD WELDS WILL NOT BE MEASURED FOR PAYMENT.

REMOVAL OF EXISTING BRIDGE STRUCTURES:

ITEM "REMOVAL OF EXISTING BRIDGE STRUCTURE" CONSISTS OF THE REMOVAL OF THE EXISTING 121.34' LG. BY 29.0' WIDE BRIDGE, CONSISTING OF THREE (3) STEEL I-BEAM SPANS (35'-50'-35') WITH A CONCRETE DECK, ASPHALT OVERLAY AND CURBS, CONCRETE POSTS AND RAILS, AND CONCRETE ABUTMENTS AND PILE BENTS AT ℄ STA. 67+60.87.

THE REMOVAL OF THE EXISTING BRIDGE SHALL BE IN ACCORDANCE WITH SECTION 619.04.B.2 OF THE STANDARD SPECIFICATIONS AND IN A MANNER APPROVED BY THE ENGINEER. THE EXISTING STEEL I-BEAMS SHALL BE SALVAGED AND STORED ON THE RIGHT OF WAY TO BECOME THE PROPERTY OF LOGAN COUNTY. ALL OTHER MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

THE EXISTING STEEL BEAMS ARE COATED WITH A LEAD BASED PAINT. MEASURES SHALL BE TAKEN TO ENSURE WORKER SAFETY IN ACCORDANCE WITH 29 CFR 1926.62 AND ALL APPLICABLE OSHA STANDARDS. ANY PAINT REMOVED DURING THE SEQUENCE OF WORK SHALL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH SECTION 512 OF THE STANDARD SPECIFICATIONS. ALL COSTS TO BE INCLUDED IN THE PRICE BID FOR "REMOVAL OF EXISTING BRIDGE STRUCTURE".

DRAINS AT END OF BRIDGE:

ASPHALT SHOULDER WIDENING, CURBS, SLOPE DRAINS AND SPLASH BASINS SHALL BE CONSTRUCTED AS SHOWN ON SHEET NO. 25.

ASPHALT SHOULDER WIDENING ALONG THE BRIDGE GUARD RAIL SHALL BE IN ACCORDANCE WITH THE ROADWAY PLANS, EXCEPT AS SHOWN ON SHEET NO. 25. ALL COSTS OF ASPHALT SHOULDER WIDENING SHALL BE INCLUDED IN THE ROADWAY PAY ITEMS.

THERE IS 12.0 CUBIC YARDS OF CLASS "C" CONCRETE REQUIRED TO CONSTRUCT THE SLOPE DRAINS, SPLASH BASINS AND 6" CONCRETE CURBS AT THE ENDS OF THE BRIDGE. ALL COSTS FOR THE SLOPE DRAINS, SPLASH BASINS, 6" CONCRETE CURBS, CONCRETE, REINFORCING STEEL, EXCAVATIONS, AND BACKFILL INCLUDING ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN IN THE PLANS SHALL BE INCLUDED IN THE PRICE BID FOR "CLASS "C" CONCRETE", PER C.Y.

ENVIRONMENTAL NOTE:

REFER TO ROADWAY PLANS FOR NOTES REGARDING SWALLOW NESTS.

28312(04)

PAY QUANTITIES - BRIDGE "A"

0200 BRIDGE "A" (50'-70'-50') PRESTRESSED CONCRETE BEAM SPANS, 32'-0" CLR. RDWY. W/ CONC. TRAFFIC RAILS (TR3) SKEWED 0°

ITEM NO.		DESCRIPTION		UNITS	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON	(1)	CY	120.00
501(F)	6352	GRANULAR BACKFILL	(1)	CY	56.00
503(A)	6293	PRESTRESSED CONCRETE BEAM (TYPE B)	(1)	LF	397.34
503(A)	6294	PRESTRESSED CONCRETE BEAM (TYPE C)	(1)	LF	278.67
504(A)	1304	APPROACH SLAB	(1)	SY	141.60
504(B)	1305	SAW-CUT GROOVING	(1)(5)	SY	756.10
504(D)	6239	CONCRETE RAIL (TR3)	(1)	LF	395.40
506(A)	1322	STRUCTURAL STEEL	(1)	LB	870.00
507(A)	6172	WEATHERING STEEL FIXED BEARING ASSEMBLY	(1)(2)	EA	8.00
507(B)	6176	WEATHERING STEEL EXPANSION BEARING ASSEMBLY	(1)(2)	EA	16.00
507(C)	6282	ELASTOMERIC BEARING PADS	(1)	EA	16.00
509(A)	1326	CLASS AA CONCRETE	(1)	CY	180.80
509(B)	1328	CLASS A CONCRETE	(1)	CY	117.10
509(D)	1331	CLASS C CONCRETE	(1)	CY	12.00
511(A)	1332	REINFORCING STEEL	(1)	LB	49030.00
511(B)	6010	EPOXY COATED REINFORCING STEEL	(1)	LB	9080.00
514(A)	6010	PILES, FURNISHED (HP10x42)	(3)	LF	560.00
514(B)	6292	PILES, DRIVEN (HP10x42)		LF	560.00
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)		EA	2.00
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED)	(1)	SY	124.00
516(A)	6098	DRILLED SHAFTS 72" DIAMETER	(4)	LF	241.20
516(C)	6200	CROSSHOLE SONIC LOGGING	(4)	EA	1.00
601(B)	1353	TYPE I-A PLAIN RIPRAP		TON	1150.00
601(C)	1355	TYPE I-A FILTER BLANKET		TON	205.00
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND	(1)	LF	64.00
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND.	(1)	LF	80.00
619(D)	1397	REMOVAL OF EXISTING BRIDGE STRUCTURE		LSUM	1.00

PAY QUANTITY NOTES

(1) PAYMENT FOR THIS ITEM WILL BE BASED ON PLAN QUANTITIES. SEE THE 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 109.01.B "PLAN QUANTITIES".

(2) PROVIDE AND INSTALL BEARING ASSEMBLIES OF THE SIZE, SHAPE AND LOCATION DETAILED IN THE PLANS AND STANDARD DRAWINGS AT THE ABUTMENTS AND PIERS. THERE IS AN ESTIMATED 640 LBS. OF STRUCTURAL STEEL FOR THE FIXED BEARING ASSEMBLIES AND 2480 LBS. OF STRUCTURAL STEEL FOR THE EXPANSION BEARING ASSEMBLIES. INCLUDE ALL COSTS ASSOCIATED WITH PROVIDING AND INSTALLING THE ANCHOR PLATES, ANCHOR BOLTS, NUTS, WASHERS, AND ELASTOMERIC BEARING PADS, INCLUDING ALL MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN IN THE PLANS, IN THE PRICE BID PER EACH OF "WEATHERING STEEL FIXED BEARING ASSEMBLY" OR "WEATHERING STEEL EXPANSION BEARING ASSEMBLY" AS APPLICABLE.

(3) ALL ABUTMENT PILING SHALL BE AASHTO M270 GRADE 50 STEEL.

(4) SEE SPECIAL PROVISIONS.

(5) QUANTITY SHOWN IS BASED ON ACTUAL SQUARE YARDS OF DECK AND APPROACH SLAB CLEAR ROADWAY SURFACE AREA AND VARIES FROM THE QUANTITIES SHOWN IN THE STANDARD DRAWINGS.

S.H. 74D

LOGAN COUNTY

PAY QUANTITIES AND GENERAL NOTES (BRIDGE "A")

State Job No. 28312(04) Sheet No. 6