

REVISIONS		
REV. NO.	DESCRIPTION	DATE

GENERAL NOTES

SPECIFICATIONS:

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

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 AXIAL LOAD RESISTANCES WITHOUT EXCEEDING THE LIMITATIONS SET ON THE ALLOWABLE DRIVING STRESSES IN ACCORDANCE WITH SECTION 514.03.A(2)(a).

ABUTMENT PILING CAPACITY:

THE FACTORED REACTION FOR EACH HP 12X53 PILE AT EACH ABUTMENT IS 83.1 TONS PER PILE. DRIVE ALL PILING UNTIL THE 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 PILES:

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

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IN CONNECTION WITH THE DRIVING, DETERMINE THE AXIAL LOAD RESISTANCE BY THE FORMULA SHOWN ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.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 INTERMEDIATE DIAPHRAGMS:

ONCE THE CONCRETE HAS BEEN PLACED FOR THE CONCRETE INTERMEDIATE DIAPHRAGMS, WAIT A MINIMUM OF TWENTY-FOUR HOURS BEFORE REMOVING THE SIDE FORMS. DO NOT REMOVE THE BOTTOM FORM FOR A MINIMUM OF THREE 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 TEN DAYS, OR AT THE DISCRETION OF THE ENGINEER. THIS TIME MAY BE SHORTENED IF THE CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH.

PENETRATING WATER REPELLENT SURFACE TREATMENT:

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

1. EDGES AND UNDERSIDE OF CANTILEVER PORTION OF THE BRIDGE DECK, AND THE OUTSIDE FACE AND BOTTOM OF EXTERIOR P.C. BEAMS.
2. THE ROADWAY FACE, TOP AND OPENINGS OF THE CONCRETE TRAFFIC RAILS.
3. THE EXPOSED FACES OF SEAT AND ABUTMENT BACKWALL, INCLUDING TOP OF SEAT AND PEDESTALS.
4. THE TOP OF THE PIER CAP, INCLUDING ALL SURFACES OF PEDESTALS, AND ALL VERTICAL FACES OF THE PIER CAP.

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.

ALL COSTS OF CONCRETE, REINFORCING STEEL, RAPID CURE JOINT SEALANT, EXCAVATION, LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE PLANS SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF "APPROACH SLAB".

STAINLESS STEEL FIXED BEARING ASSEMBLIES:

PROVIDE AND INSTALL FIXED BEARING ASSEMBLIES OF THE SIZE, SHAPE, AND LOCATION AS SHOWN ON THE PLANS. THERE IS AN ESTIMATED TOTAL OF 225 POUNDS OF STAINLESS/STRUCTURAL STEEL FOR EACH FIXED BEARING ASSEMBLY LOCATION.

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

STAINLESS STEEL EXPANSION BEARING ASSEMBLIES:

PROVIDE AND INSTALL EXPANSION BEARING ASSEMBLIES OF THE SIZE, SHAPE, AND LOCATION AS SHOWN ON THE PLANS. THERE IS AN ESTIMATED TOTAL OF 225 POUNDS OF STAINLESS/STRUCTURAL STEEL FOR EACH EXPANSION BEARING ASSEMBLY LOCATION.

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

DECK HAUNCHES:

PLAN QUANTITY FOR CLASS AA CONCRETE INCLUDES 20.8 CUBIC YARDS FOR HAUNCHES OVER P.C. BEAMS BETWEEN THE END DIAPHRAGMS.

STAY-IN-PLACE FORMS:

STAY-IN-PLACE STEEL DECK FORMS SHALL NOT BE USED FOR THIS PROJECT.

PERFORATED PIPE UNDERDRAIN:

ITEM "6" PERFORATED PIPE UNDERDRAIN - ROUND" INCLUDES 48 FEET OF PERFORATED PIPE AND 8 CUBIC YARDS OF PIPE UNDERDRAIN COVER 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.

ALL COSTS OF THE PERFORATED PIPE UNDERDRAIN INSTALLATION, INCLUDING BACKFILLING, LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF "6" PERFORATED PIPE UNDERDRAIN - ROUND".

NON-PERFORATED PIPE UNDERDRAIN:

ITEM "6" NON-PERFORATED PIPE UNDERDRAIN - ROUND" INCLUDES 30 FEET OF NON-PERFORATED PIPE, 8 CUBIC YARDS OF TRENCH EXCAVATION, AND 8 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.

ALL COSTS OF THE NON-PERFORATED PIPE UNDERDRAIN INSTALLATION, INCLUDING BACKFILLING, LABOR, EQUIPMENT, MATERIAL, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER LINEAR FOOT OF "6" NON-PERF. PIPE UNDERDRAIN - RND.".

DRAINS AT ENDS OF BRIDGE:

THE ASPHALT WIDENING FOR THE BRIDGE GUARD RAIL SHALL BE IN ACCORDANCE WITH STANDARDS THRI-1 AND GHW1-1 EXCEPT AS SHOWN IN THESE PLANS. ALL COSTS OF ASPHALT WIDENING SHALL BE INCLUDED IN ROADWAY PAY ITEMS.

THERE IS AN ESTIMATED 12.0 CUBIC YARDS OF CLASS C CONCRETE REQUIRED TO CONSTRUCT THE SLOPE DRAINS, SPLASH BASINS AND CONCRETE CURBS AT THE ENDS OF THE BRIDGE. ALL COSTS OF THE SLOPE DRAINS, SPLASH BASINS, AND CONCRETE CURBS, INCLUDING MATERIAL, LABOR, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN IN THE PLANS SHALL BE INCLUDED IN THE PAY ITEM FOR "CLASS C CONCRETE".

RIPRAP:

A 24" 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.

WORK ROADS:

WORK ROADS SHALL BE CONSTRUCTED TO THE SIZE AND SPECIFICATION AS SHOWN ON THE "TYPICAL SECTION THRU WORK ROAD" ON THE "GENERAL PLAN AND ELEVATION (SHEET NO. 2 OF 2)".

THE WORK ROAD SHALL BE COMPLETELY REMOVED UPON THE COMPLETION OF THE BRIDGE CONSTRUCTION.

REMOVAL OF EXISTING BRIDGE STRUCTURE:

ITEM "REMOVAL OF EXISTING BRIDGE STRUCTURE" CONSISTS OF REMOVAL AND DISPOSAL OF A BRIDGE WITH 3-68' I-BEAM SPANS, 0' SKEW, 28' CLEAR ROADWAY. THE REMOVAL SHALL BE IN ACCORDANCE WITH SECTION 619.04.B(2) OF THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND IN A MANNER APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL REMOVE ALL STEEL BEAMS FROM THE EXISTING BRIDGE WITH CARE, AND PLACE THEM ON THE RIGHT-OF-WAY FOR REMOVAL BY THE COUNTY. THE CONTRACTOR SHALL ENSURE THAT ALL STEEL BEAMS ARE FREE OF CONSTRUCTION DEBRIS AND CONCRETE. THE REMAINING STRUCTURE AND MATERIALS REMOVED DURING THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

ALL COSTS ASSOCIATED WITH THE REMOVAL OF THE EXISTING BRIDGE, AS DESCRIBED ABOVE AND AS DIRECTED BY THE ENGINEER, INCLUDING LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE PRICE BID PER LUMP SUM OF "REMOVAL OF EXISTING BRIDGE STRUCTURE".

CROSSHOLE SONIC LOGGING (CSL) TUBES AND TESTING:

SEE SPECIAL PROVISION 516-3 FOR CROSSHOLE SONIC LOGGING (CSL) TUBES AND TESTING REQUIREMENTS.

(PL) PILOT HOLES:

PROVIDE PILOT HOLES FOR ALL PILES AT BOTH ABUTMENTS AS SHOWN ON THE "DETAIL OF PILOT HOLES" ON "GENERAL PLAN AND ELEVATION (SHEET NO. 2 OF 2)". ALL COSTS FOR DRILLING, EXCAVATION, CASING (IF NECESSARY), AND CLASS C CONCRETE WITHIN THE PILOT HOLE PAY LENGTH SHOWN IN THE DETAIL INCLUDING MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "(PL) PILOT HOLES".

HARD ROCK AT SITE:

DUE TO THE HARD ROCK ENCOUNTERED AT THIS SITE, THE EXCAVATION FOR THE FOUNDATIONS WILL REQUIRE HEAVY-DUTY DRILLING EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR BEING FULLY AWARE OF THE FOUNDATION MATERIAL CONDITIONS AND THE DRILLING PROCESS PRIOR TO BEGINNING WORK.

Monday, July 31, 2017 4:10:11 PM V:\12-716E SH-28 Salt Creek JP_28857\STRUCTURAL\DWG\Salt Creek - PQ & NOTES.dwg

DESIGN	MBS	5/14	GENERAL NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGE) (SHEET NO. 1 OF 2)	SH-28 OVER SALT CREEK	NOWATA COUNTY
DETAIL	SLP	5/14		BRIDGE "A"	
CHECK	MBS	3/15			
GUY ENGINEERING SERVICES, INC.				STATE JOB PIECE NO. 28857(04)	SHEET NO. AB01