

SPECIFICATION FOR PRECAST CONCRETE BRIDGE

DESCRIPTION

PROVIDE A PRECAST ARCH CULVERT FOR PLACEMENT OVER CLEAR CREEK IN CHEROKEE COUNTY, OKLAHOMA. THE CONCRETE RIGID FRAME SHALL BE SKEW 30°, 2-38' LONG WITH A MINIMUM HYDRAULIC OPENING OF 1866.08 SQUARE FEET. THE PRECAST SPANS SHALL MEET HL-93 LOADING. THE PRECAST MANUFACTURER SHALL COORDINATE ALL DESIGN ASPECTS WITH THE ENGINEER.

QUALITY ASSURANCE

THE PRECAST MANUFACTURER SHALL HAVE A MINIMUM OF 5 YEARS EXPERIENCE IN MANUFACTURING PRECAST CONCRETE PRODUCTS FOR ROADWAY INFRASTRUCTURE.

MANUFACTURING

1. THE MANUFACTURING SHALL BE IN A CONTROLLED ENVIRONMENT TO ENSURE PROPER CONCRETE MIXTURE AND CONTROLLED CURING. THE CONCRETE MIX DESIGN AND TESTING SHALL BE MADE AVAILABLE UPON REQUEST BY THE ENGINEER.
2. THE CONCRETE FINISH SHALL BE SMOOTH AND FREE OF VOIDS OR DEFECTS.

JOBSITE CONDITIONS

THE PRECAST MANUFACTURER SHALL HAVE AN ONSITE REPRESENTATIVE DURING THE PLACEMENT OF THE PRECAST STRUCTURE. THE PRECAST REPRESENTATIVE SHALL HAVE AT LEAST 2 YEARS OF EXPERIENCE IN ASSEMBLY OF PRECAST PRODUCTS.

PRODUCT DELIVERY, HANDLING & STORAGE

THE PRECAST MANUFACTURER SHALL DELIVER THE PARTS TO THE JOB SITE IN ORDER OF ASSEMBLY INSTRUCTIONS. MINIMAL STORAGE AREA IS AVAILABLE ALONG ROADWAY RIGHT OF WAY.

CONSTRUCTION

1. ERECTION VARIANCES SHALL BE 1 INCH OR LESS ON HORIZONTAL AND VERTICAL PLACEMENT.
2. TEMPORARY SUPPORTS, BEARING PLATES, GROUT, AND OTHER INSTALLATION MATERIALS SHALL BE CLEARLY INDICATED ON THE SHOP DRAWINGS. THE CONTRACTOR SHALL PROVIDE THESE MATERIALS, ALL COSTS TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS.

REPAIR AND CLEANING

1. ANY DEFECTS AND DAMAGES CAUSED DURING SHIPPING AND ASSEMBLY SHALL BE PROPERLY REPAIRED AS TO NOT REDUCE THE STRUCTURAL CAPABILITIES OF THE PRECAST STRUCTURE.
2. ANY DIRT OR DEBRIS ADHERING TO THE PRECAST DURING SHIPPING AND ERECTING SHALL BE REMOVED OR CLEANED AS DIRECTED BY THE PRECAST MANUFACTURER'S REPRESENTATIVE ON SITE.

WARRANTY

THE PRECAST MANUFACTURER SHALL WARRANT AND GUARANTEE THE PRECAST PRODUCTS AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A MINIMUM OF 1 YEAR AFTER ASSEMBLY AND ACCEPTANCE BY THE COUNTY.

CHAMFER REQUIREMENTS:

ALL EXPOSED CONCRETE EDGES SHALL HAVE 3/4" CHAMFER UNLESS OTHERWISE SHOWN OR NOTED. ALL CHAMFER STRIPS SHALL BE SIZED LUMBER.

CONCRETE PLACEMENT:

ALL CONCRETE SHALL BE POURED IN THE DRY.

REINFORCING STEEL:

- a. PROHIBITION OF WELDING: NO WELDING OR TACK WELDING OF REINFORCING BARS WILL BE PERMITTED.
- b. ALL BAR BEND DIMENSIONS ARE OUT TO OUT.

COUNTY BRIDGE PAY QUANTITY NOTES

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

- (1) ITEM "REMOVAL OF EXISTING BRIDGE STRUCTURE" CONSISTS OF REMOVAL OF THE 3-10' CONCRETE SLAB SPANS IN ACCORDANCE WITH SECTION 619.04.B(2) OF THE SPECIFICATIONS. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING BRIDGE IN A MANNER APPROVED BY THE ENGINEER.
- (2) WINGWALLS CAN BE CAST-IN-PLACE, PRECAST, OR RECON MODULAR BLOCK RETAINING WALLS, OR APPROVED EQUAL. DESIGN OF WINGWALL SHALL BE PROVIDED BY THE MANUFACTURER AND SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL PRIOR TO START OF CONSTRUCTION. WINGWALL DESIGN SHALL BE IN ACCORDANCE WITH CURRENT ODOT SPECIFICATIONS.

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE PRECAST STRUCTURE, HEADWALLS, WINGWALLS, AND FOOTINGS TO THE ENGINEER FOR APPROVAL IN ACCORDANCE WITH ODOT SPECIFICATIONS PRIOR TO THE BEGINNING OF CONSTRUCTION. ALL BRIDGE DESIGNS MUST MEET LRFD REQUIREMENTS. ENGINEERING CALCULATIONS SHALL ALSO BE SUBMITTED IF REQUESTED BY THE ENGINEER. FINAL PRECAST STRUCTURE DESIGN AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED AND IN GOOD STANDING WITH THE STATE OF OKLAHOMA. ALL COSTS ASSOCIATED WITH PRODUCING SHOP DRAWINGS AND CALCULATIONS TO BE INCLUDED IN THE PRICE BID FOR 508 PRECAST ARCH CULVERT.

ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTAL COSTS FOR DELIVERY AND HANDLING OF PRECAST COMPONENTS AS WELL AS ANY WELD PLATES AND CONNECTIONS SHALL BE INCLUDED IN THE COST OF PRECAST ARCH CULVERT.

PRECAST BRIDGE STRUCTURE MUST ALLOW FOR 482 S.F. OF HYDRAULIC OPENING. THE ROADWAY OVERTOPPING ELEVATION OF 660.08 MUST BE MAINTAINED. THE MINIMUM ROADWAY OVERTOPPING FREQUENCY SHALL BE THE 193-YEAR STORM. ANY ADJUSTMENTS TO THE VERTICAL PROFILE TO ACCOUNT FOR THE PRECAST STRUCTURE SHALL BE APPROVED BY THE ENGINEER. ALL VERTICAL CURVES SHALL BE DESIGNED FOR 40 MPH MINIMUM.

THE FINAL WEARING SURFACE SHALL BE A CONCRETE OR ASPHALT OVERLAY TO CONCEAL ALL JOINTS AND CONNECTIONS PER MANUFACTURES SPECIFICATIONS. RECESSED GROUTED CONNECTIONS ARE PREFERRED.

SHOP DRAWINGS SHALL INCLUDE THE FOUNDATION DESIGN REQUIRED FOR THE PRECAST ARCH CULVERT. THE PRICE BID FOR "PRECAST ARCH CULVERT" SHALL INCLUDE THE COSTS OF CONCRETE, REINFORCING STEEL, EXCAVATION, LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THE WORK AS REQUIRED BY THE SUBMITTED SHOP DRAWINGS FOR THE FOUNDATION.

SHOP DRAWINGS SHALL INCLUDE DESIGN OF HEADWALLS, WINGWALLS, FOOTINGS, AND BACKFILL REQUIREMENTS. PRICE BID FOR PRECAST ARCH CULVERT HEADWALLS, WINGWALLS, AND FOOTINGS SHALL INCLUDE THE COSTS OF CONCRETE, REINFORCING STEEL, EXCAVATION, BACKFILL, LABOR, EQUIPMENT AND INCIDENTALS AS REQUIRED BY THE SUBMITTED SHOP DRAWINGS. PRECAST WING WALLS MAY BE RECOMMENDED BY THE PRECAST SUPPLIER. THE PRICE BID FOR "PRECAST ARCH CONCRETE" SHALL INCLUDE ALL COSTS ASSOCIATED WITH PRODUCING ALTERNATE WINGWALL DESIGNS, CONCRETE, REINFORCING STEEL, EXCAVATION, LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO COMPLETE THE WORK AS REQUIRED BY THE SUBMITTED SHOP DRAWINGS.

FOUNDATION EXCAVATION AND SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT FOR THIS PROJECT PREPARED BY TERRACON DATED 07/14/2015.

- (3) QUANTITY IS APPROXIMATE. FINAL QUANTITY TO BE DETERMINED BY THE MANUFACTURER OF PRECAST BRIDGE STRUCTURE.

COUNTY BRIDGE GENERAL CONSTRUCTION NOTES

THE CONTRACTOR WILL BE RESPONSIBLE FOR CLEANING THE CHANNEL TO THE LIMITS OF THE RIGHT-OF-WAY. ALL COSTS OF MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO COMPLETE THE WORK AS SHOWN SHALL BE INCLUDED IN PRICE BID FOR OTHER ITEMS OF WORK.

SPECIFICATIONS:

ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE 2009 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

ALL REINFORCING STEEL SHALL BE GRADE 60.

ALL CLASS "A" AND CLASS "AA" CONCRETE SHALL BE AIR-ENTRAINED.

| DESCRIPTION | REVISIONS | DATE |
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| 29394(04) | | | | | |
|---|------|--------------------------------------|-----------|--------|----------|
| PAY QUANTITIES | | | | | |
| 0200 BRIDGE ITEMS - BRIDGE A: 86'-6 3/4" PRECAST BRIDGE x 38'-0" CLR. RDY., SK30 L.F. | | | | | |
| ITEM | | DESCRIPTION | PAY NOTES | UNIT | QUANTITY |
| 202(A) | 1301 | UNCLASSIFIED EXCAVATION | R-1 | C.Y. | 1,591 |
| 303(A) | 2100 | AGGREGATE BASE TYPE A | 3 | C.Y. | 49 |
| 501(A) | 1306 | STRUCTURAL EXCAVATION UNCLASSIFIED | R-1 | C.Y. | 832 |
| 508 | 6359 | PRECAST ARCH CULVERT | 2 | L.F. | 76 |
| 601(B) | 1353 | TYPE 1-A PLAIN RIPRAP | | TON | 672 |
| 601(C) | 1355 | TYPE 1-A FILTER BLANKET | | TON | 30 |
| 619(D) | 1397 | REMOVAL OF EXISTING BRIDGE STRUCTURE | 1 | L. SUM | 1 |

Wednesday, December 02, 2015 2:33:24 PM V:\13--828E_Barrington Hollow Br 22 & LWC-Cherokee 2--CED2\CIV3D\PLANS\828--PAY QUANTITY NOTES (BRIDGE).dwg

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|--|--|--------------------------------|--|--------|----------|-------------|--|
| BARRINGTON HOLLOW BR 22 & LWC | | CHEROKEE COUNTY | | Design | RAA | 12/15 | |
| BRIDGE "A" | | | | Detail | ALM | 12/15 | |
| SUMMARY OF PAY QUANTITIES & NOTES (BRIDGE A) 86'-6 3/4" PRECAST BRIDGE x 38'-0" CLR RDWY, SKEW 30° L.F. | | | | Check | RAP | 12/15 | |
| | | | | Squad: | Eng. GUY | | |
| STATE OF OKLAHOMA | | GUY ENGINEERING SERVICES, INC. | | | | | |
| | | JOB PIECE NO. 29394(04) | | | | SHEET NO. 5 | |