Addendum NO 2

ISSUED BY: *Great River Engineering*
2826 S. Ingram Mill Rd.
Springfield, Missouri 65804
(417) 886-7171
(417) 886-7591 --- FAX

DATE: October 21, 2019

FOR: **Christian County Riverside Bridge Replacement**
BRO-B022(9)

The attached revisions hereby supersede any and all data with which they may conflict as indicated on the Drawings, Specifications and related documents issued in the original set. Each trade is responsible for changes in its work caused by changes in the work of other trades. This addendum is a part of and shall be attached to the original set of plans and specifications for the work.

Notification: There has been one addendum prior to this addendum.

Changes to:

Contract Documents and Specifications:

Itemized Bid Form

The itemized bid form has been revised as followings.

Quantity Revised

- Type "A" Guardrail – 725.25 Lin. Foot

Line Item Added

- Decorative Metal Fence – 459 Lin. Foot

Job Special Provisions

Specifications added for the bid alternate for Decorative Steel Fences.

Construction Plans

All revisions to the construction plans have are indicated on the plans via a revision bubble. Sheets with revisions are as follows:

Sheet C3

Quantities updated and note added.

Decorative Metal Fence and Detail Sheet Addedd

There are no other clarifications or changes included with this Addendum.

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Date: 2019.10.21 09:41:40 -05'00'

CONTRACTOR NAME: _____

ADDRESS LINE 1: _____

ADDRESS LINE 2: _____

PHONE NUMBER: _____

EMAIL: _____

Christian County Commission
20900151
BRO-B022(09)

DATE: _____

ITEMIZED BID FORM

LINE	ITEM	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	AMOUNT
ROADWAY ITEMS						
1	201	CLEARING AND GRUBBING	ACRE	6.4		
2	618	MOBILIZATION	LUMP SUM	1		
3	203	EXCAVATION FOR ROADWAY - UNCLASSIFIED	CU. YARD	4,062		
4	203	EMBANKMENT IN PLACE W/ COMPACTION	CU. YARD	20,648		
5	304	TYPE 1 AGGREGATE FOR BASE (6 IN. THICK)	TON	3,051		
6	401	BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1)	TON	949		
7	407	TACK COAT	GALLONS	440		
8	401	BITUMINOUS PAVEMENT MIXTURE PG64-22 (BASE, 4 IN. THICK)	TON	1,893		
9	205	MODIFIED SUBGRADE	SQ. YARD	3,667		
10	310	AGGREGATE SURFACE (5 IN. THICK)	TON	12		
11	607	FENCE (5-STRAND BARBED WIRE)	LIN. FOOT	1,261		
12	607	FENCE (CABLE, CONNECTORS, POST)	LIN. FOOT	400		
13	606	BRIDGE ANCHOR SECTION	EACH	4		
14	606	ASYMMETRICAL TRANSITION SECTION	EACH	4		
15	606	CRASHWORTHY END TERMINAL	EACH	4		
16	606	TYPE "A" GUARDRAIL	LIN. FOOT	725.25		
17	725	CULVERT (30 IN. DIA.)	LIN. FOOT	101		
18	725	CULVERT (24 IN. DIA.)	LIN. FOOT	144		
19	725	CULVERT (18 IN. DIA.)	LIN. FOOT	77		
20	805	SEEDING	ACRE	6.6		
21	725	CONCRETE BOX CULVERT (3' 6" RISE X 8' 6" SPAN)	LUMP SUM	1		
22	611	TYPE 1 ROCK DITCH LINER	CU. YARD	54		
23		MONUMENT AND PLAQUE	LUMP SUM	1		
				ROADWAY ITEMS SUBTOTAL		

EROSION CONTROL, SIGNAGE, & MARKING

24	806	ROCK DITCH CHECK	EACH	28		
25	806	SILT FENCE	LIN. FOOT	1,731		
26	611	TYPE 2 ROCK BLANKET	CU. YARD	1,834		
27	611	CONSTRUCTION ENTRANCE/EXIT	CU. YARD	37		
28	616	CONSTRUCTION SIGNS	SQ. FOOT	184.50		
29	616	TYPE 1 BARRICADE	EACH	1		
30	616	TYPE 3 BARRICADE	EACH	25		
31	616	REGULATORY SIGNING	SQ. FOOT	50.70		
32	616	6" PERP. VISOR	SQ. FOOT	1.00		
33		BOLLARDS	EACH	10		
34	903	U-CHANNEL, 3 LB	LIN. FOOT	140		
35	620	6 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS (SOLID)	LIN. FOOT	5,919.51		
36	620	6 IN. YELLOW HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS (DOUBLE SOLID)	LIN. FOOT	2,886.93		
37	620	24 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS (SOLID)	LIN. FOOT	54.15		
38	620	12 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS (SOLID)	LIN. FOOT	20.00		
39	620	30 IN. WHITE HIGH BUILD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS (SOLID)	LIN. FOOT	69.00		
				EROSION CONTROL, SIGNAGE, & MARKING SUBTOTAL		

BRIDGE ITEMS

40	216	REMOVAL OF BRIDGES	LUMP SUM	1		
41	206	EXCAVATION FOR STRUCTURE - UNCLASSIFIED	CU. YARD	238		
42	705	PRESTRESSED CONCRETE NU-GIRDER (NU-63)	LIN. FOOT	1,426		
43	716	PLAIN NEOPRENE BEARING PAD	EACH	24		
44	705	STEEL INTERMEDIATE DIAPHRAGM FOR P/S CONCRETE GIRDERS	EACH	15		
45	706	REINFORCING STEEL (BRIDGES)	POUND	32,268		
46	703	CLASS B-1 CONCRETE (SUBSTRUCTURE)	CU. YARD	141		
47	702	STRUCTURAL STEEL PILES (10 IN.)	LIN. FOOT	168		
48	702	STRUCTURAL STEEL PILES (12 IN.)	LIN. FOOT	115		
49	702	PILE WAVE ANALYSIS	EACH	2		
50	702	PILE POINT REINFORCEMENT	EACH	11		
51	703	CORRAL RAIL	LIN. FOOT	800		
52	703	SLAB ON CONCRETE NU-GIRDER	SQ. YARD	1,466		
53	503	BRIDGE APPROACH SLAB	SQ. YARD	107		
54	715	VERTICAL DRAIN AT END BENTS	EACH	2		
55	701	DRILLED SHAFTS (4 FT. 0 IN. DIA.)	LIN. FOOT	69		
56	701	ROCK SOCKETS (3 FT. 6 IN. DIA.)	LIN. FOOT	36		
57	701	SONIC LOGGING TESTING	EACH	4		
58	607	(72 IN.) PEDESTRIAN FENCE (STRUCTURES)	LIN. FOOT	459		
59	707	CONDUIT SYSTEM ON STRUCTURE	LIN. FOOT	360		
					BRIDGE ITEMS SUBTOTAL	
					TOTAL CONTRACT	

BID ALTERNATE #1

60		DECORATIVE STEEL FENCE	LIN. FOOT	459		

Job Special Provisions

RIVERSIDE BRIDGE REPLACEMENT OVER FINLEY RIVER

BRO-B022(09)

JOB SPECIAL PROVISIONS – TABLE OF CONTENTS
(Job Special Provisions shall prevail over Specification and/or General Provisions whenever in conflict therewith)

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JOB SPECIAL PROVISIONS

1. GOVERNING SPECIFICATIONS AND DEFINITION CHANGES

The general requirements, provisions and technical specifications governing the completion of the work contemplated shall be those known and designated as the "Missouri Standard Specifications for Highway Construction, 2017, Fourth Edition", and all revisions up until the date shown on the executed contract. The general requirements together with General and Job Special Provisions, if any, and other State and Federal requirements contained in the contract documents. In the event of conflict between the above referenced specifications and special provision, the Job Special Provisions shall have precedence, followed in descending priority by the General Special Provisions, and the MoDOT Standard Specifications. In the event of a disagreement between the Job Special Provisions and the Plans, the Plans shall have precedence.

All reference to the "County," "State" or "Owner" shall be interpreted as the Christian County Commission, Christian County, Missouri. All references to “Engineer” shall be interpreted as “Design Professional”.

2. NOTICE OF LETTING

The Notice of Letting shall be in accordance with Missouri Standard Specifications for Highway Construction Section 102.1 and shall be modified to include the following:

After the date is fixed for the receipt of bids, the Owner may, in addition to the notice required by law, give notice of such date by mail/email directly to those contractors known to the consulting Design Professional as being engaged in the type of construction to be bid.

3. BIDDING DOCUMENTS

The project documents shall be distributed as a Hard-Copy. No AutoCAD drawings will be given during the bidding process. All bidders must use the design plans, specifications, and any other needed information for their bidding purposes. This may include pre-bid meeting minutes and addendums.

4. INSURANCE

The Contractor shall provide liability insurance in the type and amount specified in Section 107.13 of the MoDOT Standard Specifications, as summarized in the table below.

	Minimum Coverage	
	Per Claimant	Per Occurrence
Worker’s Compensation Insurance*		
Commercial General Liability Insurance	$500,000.00	$3,000,000.00
Commercial Auto Liability Insurance	$500,000.00	$3,000,000.00
Jones Act Insurance**	$2,000,000.00	$2,000,000.00
US Longshore & Harbor Worker’s Compensation Act Insurance**	$2,000,000.00	$2,000,000.00
Railroad Protective Liability Insurance***	As Specified in Contract Documents	As Specified in Contract Documents

* Required for all Contractors and all Subcontractors.
** Required if work is on or adjacent to any waters classified as “navigable waters of the United States by the USACOE.
*** Required if any work is to be performed in railroad right-of-way.

5. ADD ALTERNATES

5.1 Description: This contract requires bidders to bid on additional contract work that will be considered for award. The award of this project does not guarantee work for all add alternate sections.

Routes	Proposal Section Description
All items as shown for bridge replacement and road improvments on Riverside Roadside	Base
In leu of (72 IN.) Pedestrian Fence (Structures) a Decorative Steel Fence maybe used	Add Alternate #1

Note: See plans for a breakdown of all quantities for each add alternate section.

5.2 Consideration of Bids: The contractor shall submit a bid for each add alternate section. The Commission reserves the right to award, to the lowest responsible bidder, the combination of base plus add alternate sections that will allow the most work to be completed within the Commission's budget. If the Commission chooses to exercise this right, the award of add alternate sections will be selected in accordance with the following priorities:

1. Base
2. Base + Add Alt. #1

5.2.1 The Commission's budget is the basis for award of add alternates but not the basis for award of the base section. The base section of the contract will be awarded or rejected in accordance with Sec 100.

5.2.2 The awarded bidder will be notified, on MoDOT's website, of the Commission's selection of the combination of add alternate sections to be awarded the day of the Commission meeting.

5.3 Bid Bond Requirements: The contractor shall be required to obtain a bid bond for 5% of the total bid amount for the base bid and all add alternates. This bid bond will be considered applicable to the proposed work for any option.

5.4 DBE Goal: The DBE contract goal percentage specified in the Request for Bid applies to work completed for the base bid and all add alternates. The DBE contract goal percentage will be considered applicable to the proposed work for any add alternate section that is awarded.

5.4.1. The bidder shall submit the completed "DBE Identification Submittal" information in accordance with the bid documents for the total DBE participation percentage for the base bid and all add alternates.

5.4.2. If the contract is awarded for less than the maximum total of all add alternates, the awarded bidder shall submit a modified "DBE Identification Submittal" form for the proportionately reduced work with the executed contract documents after award. The modified "DBE Identification Submittal" form shall specify the DBE firm(s) to be used to meet the DBE participation percentage identified in the bid submittal for the

proportionately reduced work of the awarded add alternates.

5.4.2.1. With submittal of the modified “DBE Identification Submittal” form, the awarded bidder is not allowed to eliminate any DBE firm(s) previously identified to complete items of work for the awarded add alternates. The awarded bidder is only allowed to proportionately reduce the participation of previously identified DBE firm(s) on awarded add alternates or eliminate previously identified DBE firms for add alternates that were not awarded.

5.4.2.2 The failure of the awarded bidder to submit the modified “DBE Identification Submittal”, listing actual, committed DBE participation percentage equal to or greater than the DBE participation percentage specified in the bid for all add alternates, may result in the bid being declared non responsive and may result in forfeiture of the bid surety bond or bid guaranty from the bidder.

5.5 Basis of Payment: The accepted quantities of the chosen combination of base plus add alternate sections will be paid for by the contract unit bid price for item numbers found within the schedule of items for each section.

6. SUBSURFACE CONDITIONS

The attached boring logs and other factual subsurface information obtained for the design of this project are made available to bidders so that all have access to identical subsurface information available to the Commission and are not intended as a substitute for personal investigation, interpretations, and judgment of the bidders.

This information was obtained by the Commission for its use only for design purposes and for estimation of quantities for the purpose of bid comparison, and not to determine actual subsurface conditions, the actual quantities of subsurface materials, or the appropriate construction methods. The Commission makes no representation as to the accuracy of the logs or other subsurface information, since the accuracy is limited by the equipment used and the personal judgment of the persons making the investigation, and the logs indicated conditions encountered only at the times and the specific locations shown. Ground water observations are not routinely recorded in all boring logs and the absence of such observations does not mean that no ground water will be encountered. The furnishing of this information is not to be considered as a representation of actual conditions to be encountered during construction and does not relieve a bidder from the responsibility of making their own investigation of conditions to be encountered and basing their bid on information obtained from their own investigation. Any assumptions which a bidder may make from this data, the bidder makes at their own risk; none are intended by the Commission.

The bidder is cautioned that use of this subsurface information and all such interpretations, conclusions and recommendations are not represented or warranted to be accurate or reliable, and the Commission cannot be bound by them, whether or not it may appear to have “relied” on them. These subjective findings have not been confirmed or shown to be reliable, and the bidder assumes the sole risk of liability or loss if the bidder does rely on these documentary interpretations and conclusions to its detriment, delay or loss. The bidder assumes all risks it may encounter in basing its order of work, equipment or personnel determinations, time of performance, cost of performance, working days needed, item bid prices, or any other element of the work, on the attached documents or any other documentation, not expressly warranted, which the bidder obtains from the Commission.

The State of Missouri and, in particular, the area that encompasses this project is known to have, at least in part, bedrock that exhibits karst conditions. One karst condition is sometimes referred to as pinnacle or pinnacled rock. The nature of this condition makes graphical representations of this pinnacled zone difficult to classify and excavate. It is incumbent upon the bidder to investigate above surface warnings of this rock formation (road cuts, quarry sites and any other exposed faces) and be aware that the same is

regularly occurring phenomenon and is not to be regarded as a differing site condition or result in changes in the work, regardless of what any actual boring or lines on the plans may or may not tend to indicated.

7. PROJECT CONTACT FOR CONTRACTOR/BIDDER QUESTIONS

All questions concerning this project during the bidding process shall be forwarded to the project contact listed below:

Name	*Jeff Banderet*
Address	*2826 South Ingram Mill, Springfield, MO 65804*
Phone Number	*(417) 886-7171*
Email Address	*jbanderet@greatriv.com*

8. CONTRACT PLANS AND SHOP DRAWINGS

The Contractor shall be supplied with, up to, three (3) sets of approved plans and contract assemblies including the job special provisions. The supplied plan sets shall be the original size plans that were signed and sealed. Additional sets of approved plans and contract assemblies including special provisions may be purchased at a fee of $40 per set for 11x17 size plans with contract documents. Larger sets may be printed per the request of Contractor at a fee of an additional $ 1 per sheet at the larger size. One (1) set of approved plans and contract documents including special provisions shall be kept available on the job site at all times. If an approved set is unavailable on the job site then work may be stopped until such time one is produced. All shipping of plans and specifications shall be done at standard shipping cost with no-mark ups.

The Contractor will be required to submit detailed shop and dimension drawings for the following items (as applicable for project):

A. All Steel Reinforcement
B. All Pre-Cast Concrete Items
C. All Structural Steel (including connection details)
D. All retaining wall structures on jobsite (including block, cast-in-place, MSE…)
E. Bridge Plaque

Shop drawings shall be prepared in advance of fabrication and give the complete information necessary for the fabrication of the component parts of the structure. The Contractor shall submit a minimum of four (4) sets of required shop drawings to Design Professional. Upon receipt of the shop draw drawings the Design Professional will notify the Contractor that shop drawings have been received. Contractor shall allow two (2) weeks for initial review. If an Intermediate submittal is necessary, the process will be the same as the initial submittal. Allow two (2) weeks for reprocessing each submittal. No extension of Contract Time will be authorized because of failure to transmit submittals to the Design Professional. One set of drawings will be returned to the Contractor with Comments. No precast structure may be set in place until shop drawings are approved in writing.

The following information must be present on the shop drawings:

A. Project Name/Bridge Number (Must have Federal Project No. if applicable)
B. Date
C. Name and Address of the Design Professional Firm
D. Name and Address of the Contractor
E. Name and Address of Subcontractor (if applicable)
F. Name and Address of Supplier

G. A 4” X 5” space for the approval markings.

A copy of the Design Professional’s drawings will not be accepted as shop drawings.

Accuracy of the shop drawings is the responsibility of the fabricator. The approval will cover only the general design features, and in no case shall this approval be considered to cover errors or omission in the shop drawings.

The Contractor may choose to not supply additional steel reinforcing shop drawings. If the Contractor chooses to do so they must in writing accept the responsibility to complete all steel as required in the structural drawings and formally waives their right to request for additional compensation for errors and omissions located within the “bar-bill”. The “bar-bill” is only provided to aid in the bidding purposes.

9. EMERGENCY PROVISIONS AND INCIDENT MANAGEMENT

The Contractor shall have communication equipment on the construction site or immediate access to other communication systems to request assistance from the police or other emergency agencies for incident management. In case of traffic accidents or the need for police to direct or restore traffic flow through the job site, the Contractor shall notify police or other emergency agencies immediately as needed. The area Design Professional’s office shall also be notified when the Contractor requests emergency assistance.

CONSULTANT:
Name *Jeff Banderet*
Business Number *(417) 886-7171*
Cell Number *(417) 860-6417*

HIGHWAY ADMINISTRATOR:
Name: *Miranda Beadles*
Phone Number: *(417) 582-4300*

This list is not all inclusive. Notification of the need for wrecker or tow truck services will remain the responsibility of the appropriate police agency.

The Contractor shall notify law enforcement and emergency agencies before the start of construction to request their cooperation and to provide coordination of services when emergencies arise during the construction at the project site. When the Contractor completes this notification with law enforcement and emergency agencies, a report shall be furnished to the Design Professional on the status of incident management.

No direct pay will be made to the Contractor to recover the cost of the communication equipment, labor, materials or time required to fulfill the above provisions.

10. COOPERATION WITH UTILITIES

For informational purposes only, the following is a list of names, addresses, and telephone numbers of the known utility companies in the area of the construction work for this improvement:

Utility Name	Type
City of Ozark Wastewater Contact: John McCarthy Phone: (417) 581-1702 Email: jmccart@ozarkmissouri.org	Sewer
Empire Electric	Electric

Contact: Erik Ponder Phone: (417) 840-0579 Email: eponder@empiredistrict.com	
Suddenlink Communications Contact: Robert Marler Phone: (417) 581-7011	Fiber Optic, Phone, Cable

The Contractor shall make suitable and timely written request to all utility owners, all pipe line owners, or other parties affected, and endeavor to have all locations determined and any necessary adjustments of public of private utility fixtures, pipe lines, and other appurtenances within or adjacent to the limits of construction, made as soon as practicable. One (1) copy of all requests shall be submitted to the Design Professional.

The Contractor is responsible for contacting all utility companies on the site for locations of their facilities and for protecting the utilities and coordinating his activities with any required relocations.
The existence and approximate location of utility facilities known to exist, as shown on the plans, are based upon the best information available to the Commission at this time. This information is provided by the Commission "as-is" and the Commission expressly disclaims any representation or warranty as to the completeness, accuracy, or suitability of the information for any use. Reliance upon this information is done at the risk and peril of the user, and the Commission shall not be liable for any damages that may arise from any error in the information. It is, therefore, the responsibility of the contractor to verify the above listing information indicating existence, location and status of any facility. Such verification includes direct contact with the listed utilities. The Contractor shall contact all utilities to obtain plans showing their relocation and contact Missouri One-Call (1-800-344-7483) and the utility companies for field locates.

Some of the utilities may not be clear of the project when the Notice to Proceed is issued. It shall be the Contractor's responsibility to contact the utilities, and coordinate work around the utility companies' schedules. The Contractor shall make every effort to coordinate his work in such a manner as to expose possible utility conflicts ahead of Contractor's work. In the event a conflict is found, the Contractor shall contact and coordinate with the utility involved and Design Professional to resolve the conflict.

The Contractor agrees that any effects of the presence of the utilities, their relocation, Contractor's coordination of work with the utilities and any delay in utility relocation shall not be compensable as a suspension of work, extra work, a change in the work, as a differing site condition or otherwise including but, without limitation, delay, impact, incidental or consequential damages. The Contractor's sole remedy for the effects of the presence of utilities, delay in their relocation or any other effects shall be an excusable delay as provided in Section 105.7.3. The Contractor waives, for itself, its subcontractors and suppliers the compensability of the presence of utilities, delay in their relocation and any cost to the Contractor, it's subcontractors and suppliers in any claim or action arising out of or in relation to the work under the contract.

The Contractor shall be solely responsible and liable for incidental and consequential damage to any utility facilities or interruption of the service caused by it or its subcontractors operation. The Contractor shall hold and save harmless the Commission from damages to any utility facilities interruption of service by it or its subcontractor's operation.

In the event utility services are interrupted as a result of breakage within the project limits, the Contractor is to notify the appropriate utility authorities and cooperate with them until service has been restored.

The Contractor shall call Missouri One Call System prior to start of construction. Missouri One Call can be reached at 1-800-DIG-RITE (800-344-7483). A copy of all correspondence between the Contractor and Missouri One Call System shall be forwarded to the Design Professional.

11. CONSTRUCTION STAKES, LINES AND GRADES

Construction stakes, lines and grades shall be in accordance with Missouri Standard Specifications for Highway Construction Section 105.8 except for section 105.8.1.1. Remove section 105.8.1.4 and revise section 105.8.1.1 to read:

"The Design Professional will set initial field control consisting of bench marks and control monuments.

This initial construction layout staking shall consist of the following items being staked:

A. Temporary Easement
B. Right of Way
C. Stationing and Offsets for Roadway
D. Fill Face of the Proposed Structure

The Contractor must write a formal request to the Design Professional covering what benchmarks, offsets and staking items are requested along with the date to complete staking services at least five (5) business days prior to requested date of completion

The Contractor shall make whatever additional measurements and alignments he may find necessary or convenient to enable him to construct each element of the work in the correct position to correspond to the information shown on the plans and given by the Design Professional during the progress of the work. Elevations shown on the plans and referred to in the specifications are based on benchmarks shown. The Contractor shall employ competent personnel for making position, gradient and alignment determinations and measurements.

All restaking or additional construction layout staking for staged construction or re-staking of items can be performed by Great River Engineering at the current hourly billing rates. The Contractor has the option to use their own resources for surveying or another company."

12. INSPECTION OF WORK

Inspection of Work shall be in accordance with Missouri Standard Specifications for Highway Construction Section 105.10 and shall be modified to include the following:

Inspections and job control tests will generally be made by the Design Professional on the following items of work. It shall be the responsibility of the Contractor to notify the Design Professional 24 hours preceding any operations which affects the following items:

A. Initial Layout
B. Removal of Existing Structure
C. Any Blasting Operations
D. Utility Relocation
E. Trench Excavation
F. Footing Excavation
G. Pile Driving Operations
H. Drilled Shaft Operations
I. Bedding and Backfill of Storm Drainage Items
J. Reinforcing Steel Placement
K. All Concrete Operations
L. All Asphalt Operations
M. All Girder and Deck Panel Erection
N. Embankment Fill and Compaction
O. Geotextile Placement
P. Rock Blanket Placement
Q. Seeding and Mulching

R. Fencing
S. Pavement Striping and Marking

If any operation which affects the above-mentioned items is to be performed on a Monday, notification must be made to the Design Professional by 12:00 p.m. (noon) of the preceding Friday. If any operation which affects the above-mentioned items is to be performed on a Saturday or Sunday, notification must be made to the Design Professional by 3:00 p.m. of the preceding Thursday. The lack of observation or inspection by the Design Professional shall not relieve the Contractor of the responsibility to construct the project in accordance with the plans and specifications. Any work that is performed or materials used without authorization by the Design Professional may be ordered removed and replaced at Contractors Expense. Failure to notify the Design Professional as stated above will result in one of the following actions:

A. Removal of Work
B. Work Stoppage
C. No Payment made for that Item
D. Partial Payment being made for that Item.

The Contractor shall further notify the Design Professional of the timeframe during which he intends to perform the work being tested. From the time that the Contractor requests that the Design Professional or his appointed representative be on-site, the Contractor shall have a 2 (two) hour window during which to begin the task being observed / tested. If the Contractor is not able to begin the work within this 2 (two) hour window, the additional time that the Design Professional or his representative is on-site due to the delay in beginning the work shall be reimbursed to the Owner by reducing the Contractor's pay request in an amount equal to the Owner's cost.

The Missouri Department of Transportation, Federal Highway Administration and its representative shall have the right to inspect work at any time.

Unless otherwise specified, compliance sampling of the concrete shall be subject to visual inspection, job control tests, and compressive strength tests performed on job control samples. These inspections and job control tests will be performed by a MoDOT certified inspector of the Design Professional at no cost to the Contractor. Any concrete testing outside of the compliance sampling will be at the Contractor's expense.

13. ACCEPTANCE OF PRECAST CONCRETE MEMBERS AND PANELS

The following procedures have been established for the acceptance of precast concrete girders, slab panels, MSE wall systems, and other structural members. Shop drawings shall be submitted for review and approval to the engineer of record for the local public agency (LPA). The approval is expected to cover only the general design features, and in no case shall this approval be considered to cover errors or omissions in the shop drawings. The LPA or their engineer of record has the option of inspecting the precast units during fabrication or requiring the fabricator to furnish a certification of contract compliance and substantiating test reports. In addition, the reports shown below shall be required.

- Certified mill test reports, including results of physical tests on the reinforcing steel and prestressing strands as applicable.
- Concrete mix designs.
- Test reports on concrete cylinder breaks.

The LPA or their engineer of record shall verify and document that the dimensions of the precast units were checked at the jobsite and found to be in compliance with the shop drawings. I-Girders and miscellaneous prestress units shall comply with section 1029.7 of the "Missouri Standard Specification for Highway Construction," 2017, Fourth Edition and current supplemental specification revisions. For dimensional requirements are seen below:

Solid Slab Beams, Voided Slab Beams, and Box Girder Beams	
Length of Beam	± 1/8 inch per 10 feet of beam length, but no greater than 3/4 inch
Width (Flanges, Web and Fillets)	+3/8 inch, -1/4 inch
Depth (Flanges, Web and Fillets)	± 1/4 inch
Depth (Overall)	± 1/4 inch
Horizontal Alignment – (Deviation from a straight line parallel to centerline of member)	1/4 inch max., to 40-foot lengths 3/8 inch max., 40 to 60-foot lengths
Camber (Deviation from design camber within 7 days of strand release)	± 1/2 inch, to 80-foot lengths
In Final Place - Out of plane deviation from one beam relative to the adjacent beam, measured on the top of the beam with a level at a right angle to the beam length	± 1/2 inch
Stirrup Bars (Projection above top of beam)	± 3/4 inch
Stirrup Bars (Longitudinal spacing)	± 2 inches
Longitudinal Tie Position	± 1/8 inch center of gravity of reinforcing steel
Position of Lifting Devices	± 6 inches
Transverse Tie Inserts	± 1/2 inch
Anchor Rod Sleeves	± 1 inch
Guardrail Embedment Plates	± 1/2 inch from designated location,
Bearing Area (Deviation from plane)	± 1/8 inch
Bearing Plates (Centerline to centerline)	± 1/8 inch per 10 feet of beam length, but no greater than 3/4 inch
Bearing Plates (Centerline to end of beam)	± 1/2 inch

The fabricator shall notify the engineer a minimum of 48 hours prior to casting of the precast products.

Forms and formwork, placing and tying of reinforcing bars and placing and vibrating of concrete shall be in accordance with Sections 703 and 706, with the following additions:

(a) Clamps, bolts or other devices connecting the bulk-head to the side forms, inserts and blockouts shall be capable of being removed or loosened before curing is applied.
(b) Exterior forms for members shall be metal other than aluminum, mortar-tight and of adequate design to produce members within the tolerances specified. Supplemental forms, such as those used to form steps or to establish slopes, may be made of a material other than metal, so long as dimensional tolerances and mortar-tightness are maintained.
(c) The temperature of the mixed concrete when placed shall be no higher than 90 F. The forms and reinforcing steel shall be cooled by acceptable methods to an ambient temperature of 90 F or lower.

Curing of concrete members shall be kept continuously wet until the conclusion of the curing period. Curing shall be accomplished by covering with burlap or jute mats kept continuously wet by moist air, live steam or any combination of these methods. Other moist curing methods that will keep the member moist may be used provided the details of the proposed method are submitted to the engineer and approved. As soon as the concrete has set sufficiently that no marring of the surface or distortion will result, wet burlap or jute mats shall be applied, covering the exposed surface. Curing shall be continued until the concrete has attained the design compressive strength shown on the plans. The concrete shall not be exposed to temperatures below freezing until the curing has been completed.

Forms shall not be stripped from concrete members sooner than 12 hours after casting. If the concrete strength has then been attained, forms may be removed and members moved without unnecessary delay to a curing area. If forms are removed before the concrete has attained the strength which will permit the units to be moved or stressed, only the minimum area of the curing enclosure that is necessary to remove each individual form section shall be removed at any one time. The open area in the enclosure shall immediately be closed as each form section is removed. When the surrounding air temperature is below 30 F, no portion of the enclosure shall be removed before the unit has attained the required transfer strength. Forms of test specimens shall be stripped at the same time the forms are removed from the members.

Handling and storage of members shall be performed with the members in an upright position and with points of support in approximately the same position as designated for the final position of the members in the structure. Members shall not be transported nor erected until the concrete has attained the design compressive strength shown on the plans. In storage, the members shall be fully supported across their width on battens that are no less than 4 inches wide. During transportation, the ends of beams shall not extend more than 1 1/2 times their depth beyond the supports on the transporting vehicle. During storage, the supports shall maintain the members in essentially a level position without twisting. Stacking of members in storage shall be done only with the approval of the engineer. If such permission is granted, the supports of all members shall be in the same vertical planes and shall be of adequate thickness to prevent damage to the lifting devices.

Each precast unit shall be identified with the date, manufacturer and identification number. Markings may be indented on the unit or painted thereon with waterproof paint, and shall be located so that they are easily identifiable on-site. These markings shall be shown on the shop drawings for confirmation in the field for final placement.

All work and materials shall be subject to visual inspection and shall be approved by the engineer prior to final acceptance.

Four sets of shop drawings shall be submitted to the engineer for review and approval. Accuracy of the shop drawings is the responsibility of the fabricator. The approval will cover only the general design features, and in no case shall this approval be considered to cover errors or omission in the shop drawings.

14. ACCEPTANCE OF STRUCTURAL STEEL

The following procedures have been established for the acceptance of structural steel. Shop drawings shall be submitted for review and approval to the Engineer. The approval is expected to cover only the general design features, and in no case shall this approval be considered to cover errors or omissions in the shop drawings. The contractor shall utilize a fabricator that meets the appropriate American Institute of Steel Construction (AISC) certification provisions as outlined in Sec 1080.3.1.6 of the current version of the MoDOT Standard Specifications for Highway Construction 2017, Fourth Edition. Additional information regarding the AISC certification program can be found on their website, *www.AISC.org*.

All welding operations, including material and personnel, shall meet the American Welding Society (AWS) specifications. Primary welds shall meet the provisions of Sec 1080.3.3.5.2 of the current version of the MoDOT Standard Specifications for Highway Construction 2017, Fourth Edition. The Engineer has the option of inspecting the steel units during fabrication or requiring the fabricator to furnish a certification of contract compliance and substantiating test reports. In addition, the reports shown below shall be required.

- Certified mill test reports, including results of chemical and physical tests on all structural steel as furnished.

- Non-destructive testing reports.
- Verification of the girder camber, sweep, and other blocking data.
- Verification of coating operations.

The Engineer will review the dimensions of the units and check at the jobsite to verify that they are in compliance with the shop drawings.

All work and materials shall be subject to visual inspection and shall be approved by the engineer prior to final acceptance.

Four sets of shop drawings shall be submitted to the engineer for review and approval. Accuracy of the shop drawings is the responsibility of the fabricator. The approval will cover only the general design features, and in no case shall this approval be considered to cover errors or omission in the shop drawings.

15. CERTIFICATION OF INSPECTORS

All technicians who perform, or are required by the FHWA to witness, such sampling and testing of materials and products incorporated into the project, shall be deemed as qualified by virtue of successfully completing the requirement of the MoDOT EPG 106.18 Technician Certification Program, for the specific technical area(s) witnessed or sampled.

16. UNAUTHORIZED AND DEFECTIVE WORK

All construction and materials which have been rejected or declared unsatisfactory shall be remedied or removed and replaced in a manner acceptable to the Design Professional by the Contractor at the Contractor's expense. It shall be the Contractor's responsibility to properly dispose of rejected material in a manner acceptable to the Design Professional. All expense incurred by the owner due to corrections, or removal and replacement of rejected construction materials shall be borne by the Contractor. Upon failure of the Contractor to remedy or remove and properly dispose of rejected materials or work, or to replace them immediately after receiving written notice from Design Professional, the Owner may employ labor to rectify the work, and the cost of rectification will be deducted from any payment due or which may become due to the Contractor. All decisions regarding rejection and remedied construction or materials shall be the final decision of the Design Professional. All expenses including labor time incurred by Design Professional will be billed to the Contractor at Standard Billing Rates for the Project. Failure by Contractor to follow Design Professional's direction regarding unauthorized or defective work will result in a work stoppage.

Please refer to Missouri Department of Transportation State Standard Specifications 105.1.1 for Authority of Design Professional regarding Defective work.

17. CONTROVERSIES AND CLAIMS FOR ADJUSTMENT

If any conditions arise which in the Contractor's opinion will require him to make any claims or demands for extra or additional compensation above that fixed by the Contract, or on which he contemplates bringing claims for such extra compensation, he shall promptly and before incurring any expense, notify in writing the Design Professional of the conditions and circumstances and that he proposes to make such claims. The Contractor agrees that any claims made without such advance notice, and not presented in such manner as to enable the Design Professional to observe conditions as they occur and to verify expenses as they occur and to determine with certainty the correctness of such claims and of the expenses involved, are waived and shall be null and void. No extra compensation shall be awarded in any event without prior written approval from the Owner. The Contractor shall have a maximum of ten (10%) markup on materials and subcontractors for overhead, profit and coordination. The Design Professional reserves the right to request documentation of materials and subcontractor costs from the Contractor and/or any subcontractors.

If any conditions arise which in the Contractor's opinion will require him to make any claims or demands for extra or additional completion time above that fixed by the contract, he shall notify in writing the Design Professional of the conditions and circumstances and that he proposes to make such claims within one (1) calendar day of the delay. The Contractor agrees that any claims made without such notice, and not presented in such manner as to enable the Design Professional to observe conditions as they occur and to verify delays as they occur and to determine with certainty the correctness of such claims and of the delay involved, are waived and shall be null and void. No extra completion time shall be awarded in any event without written approval by the Owner and Design Professional within five (5) days of the occurrence.

All written request from Contractor must be made in a professional manner, personal attacks, slander, or derogatory or threatening tone will be automatically rejected. All written request from Contractor shall contain in the title the County, Bridge No. and Federal Project No. In addition all written request must be signed by the Contractor.

18. SITE CONDITIONS

The Contractor shall view the site of the work and make his own determination of the conditions to be encountered in accomplishing the work. The submission of a bid shall be considered proof that the bidder has made his own examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the plans and specifications.

19. MEASUREMENT AND PAYMENT

Measurement and Payment shall be in accordance with Missouri Standard Specifications for Highway Construction Section 109 and shall be modified to include the following:

The Contractor shall submit to the Design Professional progress payment estimates, as agreed upon at the preconstruction conference, for the work performed and the value thereof at the contract unit prices. The proper percentage with relation to completion will be allowed for all incomplete items. The Design Professional will review the payment estimate and verify percentage of work complete.

No payment will be made on account of materials not yet incorporated into the work without prior approval and written agreement.

Payment may be withheld or nullified in whole or part to such extent as may be necessary to protect the Owner from loss on account of:

A. Failure of Contractor to properly submit material certifications and substantiating test reports required under the Job Special Provisions.

B. Failure of Contractor to properly submit certified copies of labor payrolls required under Section 110 of the MoDOT Standard Specifications.

C. Failure of the Contractor to properly make payment to suppliers or subcontractors for material and/or labor.

D. A reasonable doubt that the contract can be completed for the balance then unpaid.

E. Damage by the Contractor to a property owner.

F. In accordance with the Missouri Prompt Pay Act (34.057 RSMo), the Owner may withhold payment for any of the following reasons:

    1. Liquidated damages

2. Unsatisfactory job progress
3. Defective construction work or material not remedied
4. Disputed work
5. Failure to comply with any material provisions of the contract
6. Third party claims filed or reasonable evidence that a claim will be filed
7. Failure to make timely payments for labor, equipment or materials
8. Damage to a Contractor, subcontractor or material supplier
9. Reasonable evidence that a subcontractor or material supplier cannot be fully compensated under its contract with the Contractor for the unpaid balance of the contract sum.
10. Citation by the enforcing authority for acts of the Contractor or subcontractor which do not comply with any material provisions of the contract and which result in a violation of any federal, state or local law, regulation or ordinance applicable to that project causing additional costs or damage to the Owner.

20. SAMPLES, TESTS, AND CERTIFICATION

The Contractor shall submit certifications and substantiating test reports, furnished by the supplier or fabricator for all materials incorporated into the work, certifying that material and manufacturing procedures conform to the specifications. All sampling and testing required by the specifications shall be performed by the supplier in accordance with these specifications, and the results shall be signed, sealed and stamped according to laws related to professional engineers. There shall be no direct charge to the Owner for materials taken as samples, either for field tests or for laboratory tests. If a specification of a recognized national standard agency (ASTM, AASHTO, AWWA, AWS, etc.) is designated, the material may, unless otherwise specified, meet either the designated specification or the latest revision thereof in effect at the time of letting of the contract.

All submittals for samples, tests, and certification shall bear the name and address of the Contractor and supplier; the name of the project, including Federal Project Number and the specification reference for the material being submitted. Submittals not bearing this information will be rejected and returned without further review.

The testing laboratory to be used shall be subject to the approval of the Design Professional. The name of the testing laboratory shall be submitted to the Design Professional at least 10 calendar days prior to any testing.

The Contractor shall require his suppliers to provide the following testing and material certifications:

A. Aggregate base: Name of supplier, source, gradation, and supplier certification.

B. Oil for Prime and Tack Coat: Name of supplier, source of oil, and supplier's certification.

C. Plant mix bituminous base and plant mix bituminous surface: Name of supplier, source of materials used in the mix, mix design to be used, and supplier's certification.

D. Precast Concrete: Name of source and supplier of concrete and concrete materials, mix design, compressive strength test results, and supplier's certification.

E. Cast in place concrete: Name of supplier of concrete and source of aggregate, cement, admixtures; mix design; and supplier's certification.

F. Supplier's certification for all other materials used in work.

G. Structural Steel Welding: Name of Company performing welding services and applicable certifications.

H. Sod: Name and address of supplier and supplier's certification.

I. Permanent Turf Reinforcement Mat: Name and address of supplier and supplier's certification.

Tests and sampling shall be done in accordance with the Specifications, General Special Provisions or Job Special Provision. Three copies of all test reports and certifications shall be submitted to the Design Professional for review. The Design Professional reserves the right to waive certain tests or to require additional tests should job conditions or workmanship warrant. Such additional tests will be provided at the Contractor's expense except as otherwise provided for in Defective Work.

If material is rejected for whatever reason, the Contractor shall pay for all retesting until a suitable material is found.

The Design Professional at no expense to the Contractor may perform or employ a competent testing laboratory to perform the following field acceptance tests:

A. Soil Density Tests. One test shall be made per 300 linear feet of roadway on exposed compacted subgrade and in each lift of embankment.

B. Cast-in-place concrete: One slump test, one air entrainment test, and 3 compression test cylinders will be taken for each concrete placement or for each 50 cubic yards placed.

C. Soil properties: Classification, Atterberg Limits and a moisture-density relationship curve for each type of proposed borrow material as well as a qualified soils engineer's recommendations as described in the section entitled "Embankment in Place."

D. Plant mix bituminous base and plant mix bituminous surface: One density, extraction, and gradation test may be taken per 500 linear feet of pavement at locations designated by the Design Professional.

The Contractor will notify the Design Professional in advance of work requiring field inspection or testing in accordance with the section entitled "Inspection of Work" of these Job Special Provision Sections.

Unless otherwise specified, all materials shall be subject to visual inspection and job control tests, as determined by the Design Professional, and shall be certified by the material supplier that the material supplied conforms to the requirements of these specifications. All certifications shall make reference to the specific project name, Federal Project Number and shall contain the supplier's name and address.

Prior to Final Payment, the Contractor shall file with the Owner the following:

A. The Fig. 136.11.9 Contractor DBE Certification showing the final DBE participation on the project including the DBEs used, the type of work performed, and the dollar amount paid to each DBE.

B. Fig. 136.11.10 Contractor's Affidavit Regarding Settlement of Claims

C. Fig. 136.11.11 Affidavit (Compliance with Prevailing Wage Law)

D. Any other documents which may be required by the contract, Owner or the Consulting Design Professional.

These forms may be found online a under section 136.11.20. at http://epg.modot.org/index.php?title=136.11_Local_Public_Agency_Construction#136.11.19_Final_Acceptance.

When the work has been completed and certified by the Owner, a final estimate will be executed and submitted, which will provide payment to the Contractor for the entire sum due to him as set forth in these specifications, including the amount previously retained by the Owner. All prior partial estimates and payments shall be subject to correction by the Owner in this final estimate and payment.

21. PREVAILING WAGE RATE REQUIREMENTS (FEDERAL AND STATE):

The proposal and contract contain provisions requiring payment of the prevailing hourly rate of wages for each craft or type of workman required to execute the contract as determined by the Missouri Department of Labor and Industrial Relations, and requires adherence to a schedule of minimum wages as determined by the United States Department of Labor. For work performed anywhere on this project, the Contractor and the Contractor's Subcontractors shall pay the higher of these two applicable wage rates.

The Contractor and all subcontractors shall maintain books, accounts, ledgers, invoices, drafts, documents, pages and other business records pertaining to the performance of the contract with such materials available at the Contractor's field or permanent business offices at all reasonable times during the performance of the contract and for three (3) years from the date of final payment under the contract, for inspection by authorized representatives of the Owner.

The Contractor and each subcontractor shall be required to submit to the Design Professional one certified copy of labor payrolls for each week that work is in progress. Certified payrolls are to be submitted with monthly pay requests. If work is temporarily suspended, the last payroll shall be marked appropriately to note that it will be the last payroll until work is resumed.

Payrolls to be submitted shall be checked for compliance with the contract requirements and will be retained by the Owner for a period of three years following final payment, during which time they will be open to inspection by authorized representatives of the Owner.

The Contractor shall be responsible for the submittal of payrolls and certifications for all subcontractors.

The Design Professional will check payrolls, with the following checks being made to insure proper labor compliance.

1. The employee’s full name, identifying number (such as last four digits of Social Security Number) and complete address, including zip code, must appear on each payroll. For projects that are only state-funded projects, addresses will be required to be placed on certified payrolls. For federal-aid projects, placing addresses on the payrolls will be optional. The Contractor is not allowed to include complete Social Security numbers on certified payrolls. The Contractor must assign the employee an identification number and place that identification number on the certified payroll. This identification number can be the last four digits of the employee's Social Security number.

2. Check the payroll for correct employee classification.
    a. Check to assure each employee has a classification.
    b. Make sure classifications are correct as related to the type of work the company has subcontracted.
    c. Employees enrolled in the MoDOT training program must be shown on the payroll in the classification they are enrolled in as trainee. (i.e. Crane Operator Trainee, Carpenter, Laborer, etc.)
    d. When possible, confirm that employees are classified correctly as to what type work they are performing by using the interview process, jobsite visits, and communication with the inspectors, and by reviewing the Inspector’s Daily Report of Construction.
    e. Foremen or supervisors who perform 20% or less of the day with the tools of the trade are exempt from the Davis Bacon Act. They must appear on the payroll as "foreman" or "supervisor" with a breakdown of hours per day and total hours and,

since hourly wage rates are not required, they can be listed under Salary Agreement.

f. Foremen or supervisors who work with tools of the trade more than 20% of the day are not entitled to an exemption under the Davis Bacon Act. Thus, if the hourly wage rate is the same for both classifications the employee will be listed on the payroll to show both classifications in which they performed (i.e. Foreman/Carpenter), hours per day listed along with an hourly wage rate, gross amount earned, deductions and net wages paid. But, if the hourly wage rate is not the same for both classifications then multiple listings for the employee shall be included on the payroll to show each classification of work performed in each day along with all the appropriate information.

3. Check the payroll for correct hourly wage and, where applicable, the correct overtime hourly rate.
   a. Check employee's rate of pay against the state and federal wage rates, where applicable, to make sure he/she is receiving at least the minimum for his/her classification as per the prevailing wage schedule in the contract. For federally funded projects the rate of pay is the highest of either the federal or state wage rates.
   b. Make sure fringe benefit amount plus base pay amount matches or exceeds the designated fringe benefit amount plus designated base pay amount from the applicable wage order. For example, the base pay amount could be less than that designated as the prevailing wage, if the fringe benefit amount is more than that designated, and the two together meet or exceed the designated gross prevailing wage. The Contractor should be encouraged to list the exact fringe paid for each employee on the payroll. If the Contractor chooses to certify that the fringe benefits are being paid to approved plans, funds, or programs, the Contractor shall provide documentation that the correct payment amount is being paid to the fund for the individual employees.
   c. Check the daily and weekly hours worked in each classification including actual overtime hours worked (not adjusted hours).

4. All deductions shall be listed and the net wage shown. The Form WH-347 is to be used where fringe benefits are paid into established programs. However, if fringe benefits are paid in cash to the employee, the amount shall be indicated on the payroll and noted on the statement of compliance.
   a. All deductions must be identified. If a deduction of "other" is listed on the payroll it must be explained on the statement of compliance.
   b. Some typical deductions include
      1) State or federal taxes
      2) Voluntary insurance, pension, and/or retirement plans
      3) Child support and other payments ordered by a court (but not payments to the employer)
      4) Prepaid wages
      5) Payments to charitable organizations
      6) Union dues when agreed to by the union (fines are not allowable)
   c. All deductions must be an approved deduction. (If not on the approved list above, documentation giving employee's permission for the deduction must be on file.)
   d. Non-standard deductions can be approved by the Division of Labor on a yearly basis. The Contractor must provide documentation along with the payroll when any approved non-standard deductions are in use.

5. To assure that the payrolls are arithmetically correct, approximately 10% of the extensions on the first three payrolls shall be checked. The Contractor is to be advised of any violations noted on the labor payroll. All the errors are to be corrected by means of a supplementary payroll.

6. All checking by the local agency shall be initialed by the checker.

7. Final payrolls shall be marked “Final” or “Last Payroll.”

8. The local agency is to maintain a secure record of all payrolls.

22. POSTED NOTICES

The contractor shall meet the requirements outlined at http://epg.modot.org/index.php?title=Category:110_State_and_Federal_Wage_Rates_and_Other_Requirements#Required_Notices_and_Posters. Adherence to these requirements is mandatory and will be inspected at the start of the job and every other month until the project is completed. The bulletin board should remain in good condition and display all the required posters.

23. PERMITS, EASEMENTS, AND RIGHT-OF-WAY

Unless specifically stated otherwise, the easements and rights-of-way for the construction will be provided by the Owner. The Contractor shall confine his construction operations to the immediate vicinity of the location shown on the plans, and shall use due care so as to cause the least possible damage to property. All work shall be completed within the right-of-way and easements.

All licenses, permits, certificates, etc., required for and in connection with the work to be performed under the provisions of these contract documents shall be secured by the Contractor entirely at his own expense.

The Contractor shall not park, store materials, or equipment, etc. off of the right-of-way or temporary construction easement without written permission from the property owner. A copy of such written permission shall be given to the Design Professional. The Contractor shall be fully responsible for any damages to property. The Contractor shall use caution when working in the temporary easement area so as not to unnecessarily damage any existing features on the properties. At the completion of the project, areas of temporary easement shall be restored to a condition equivalent to prior to construction and a release signed by the property owners.

24. TRAFFIC MANAGEMENT SCHEDULE

Traffic management schedules shall be submitted to the Design Professional for review prior to the start of work and prior to any revisions to the traffic management schedule. The traffic management schedule shall include the proposed traffic control measures, hours traffic control will be in place, and work hours.

The Contractor shall notify the Design Professional prior to lane closures or shifting traffic onto detours.

The Design Professional shall be notified as soon as practical of any postponement due to weather, material or other circumstances.

In order to ensure minimal traffic interference, the Contractor shall schedule lane closures for the absolute minimum amount of time required to complete the work. Lanes shall not be closed until material is available for continuous construction and the Contractor is prepared to diligently pursue the work until the closed lane is opened to traffic.

Traffic Congestion:
The Contractor shall, upon approval of the Design Professional, take proactive measures to reduce traffic congestion in the work zone.

25. TRAFFIC CONTROL PROVISIONS

Work Zone Traffic Management shall be in accordance with appropriate portions of Division 100 and Division 600 of the Missouri Standard Specifications for Highway Construction 2017, Fourth Edition, and specifically as follows:

All signing and barricades shall conform to the current edition of the Manual on Traffic Control Devices published by the Federal Highway Administration, including any revisions thereto. Where Type III barricades are required, they shall be an 8-foot minimum rather than the 2-foot minimum shown in the Traffic Control Manual.

Traffic control devices shall be set up prior to the start of construction and construction shall not begin until the signing and barricading has been reviewed by the Design Professional. All traffic control devices shall be properly maintained for the project duration. They shall remain in place only as long as they are needed and shall be removed immediately thereafter. When operations are performed in stages, there shall be in place only those devices that apply to the conditions present during the stage in progress.

Signs that do not apply to conditions present shall be removed, covered, or turned so as not to be readable by oncoming traffic. Contractor shall be responsible for providing and maintaining all traffic control devices and flag persons as necessary to protect the work area and safeguard and direct traffic around the work.

The traffic control provisions called for on the Traffic Control Plans are the minimum requirements for traffic control and the Contractor shall implement additional measures as deemed appropriate by the Design Professional. Cost of all traffic control measures used, including but not limited to flag persons, channelizer barrels, cones, barricades, flashers, and temporary striping requirements shall be considered covered by the contract amount for the pay items, CONSTRUCTION SIGNS AND MOVABLE BARRICADES. Upon failure of the Contractor to comply with any traffic control directive given by the Design Professional, the Owner shall have the authority to cause said conditions to be corrected and to deduct the associated cost from any payment due, or which may become due, the Contractor.

The Contractor shall not begin a phase of the project that will detour or close the roadway to traffic until the Contractor has all materials necessary for that phase of the work delivered to the site or readily available to him, all necessary equipment and manpower readily available, and is prepared to perform the work with due diligence, so as not to impede traffic for an unnecessary amount of time.

The Contractor shall submit any variations or different concepts for the Traffic Control Plans to the Design Professional in writing and drawing format. The variations will only be allowed if approved by the Design Professional in writing. Failure to maintain the traffic management plan shall be grounds for the Design Professional to issue a stop work order. No further work will be allowed on site until all requirements of the traffic management plan as shown in the plans are in place. The time that work is stopped will not be a basis for extension of the day count. The days for which work is stopped will count toward the days called for in the contract.

26. CONTRACTOR REPRESENTATIVE AND RESPONSIBILITIES

The Contractor shall have on the work site at all times, as the Contractor's agent, a competent individual who is capable of reading and thoroughly understanding the plans and specifications, has read the specifications, and is thoroughly experienced in the type of work being performed, who shall receive instructions from the Design Professional. That individual shall have full authority to execute orders or directions of the Design Professional without delay, and to promptly supply such material, equipment, tools, labor and incidentals as may be required. That individual shall coordinate work with all subcontractors, utility companies, other Contractors in the area and any other coordination needed.

Failure of the Contractor to have the Contractor's agent on the work site when work is in progress will be

grounds for the Design Professional to issue a Stop Work Order. No further work will be allowed on site until the Contractor's agent is on the work site. The time that work is stopped will not be a basis for extension of the day count. The day that work is stopped will count toward the days called for in the contract.

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof, and shall cooperate with the Design Professional in every way possible.

The Contractor shall maintain one set of contract documents on the work site at all times.

27. CLEARING AND GRUBBING

Clearing and Grubbing shall be in accordance with Missouri Standard Specifications for Highway Construction Section 201 and shall be modified to include the following:

No tree or shrub in any Right of Way or Easement (Temporary or Permanent) shall be removed, trimmed or otherwise disturbed without the prior authorization by the Design Professional. Such authorization will be given in the case of any tree or shrub within trench or other excavation limits where a thorough examination shows that the root structure is such that the construction cannot continue.

No tree or shrub outside the limits of any trench located on or across private property shall be removed without the prior written consent of the property owner (or legal representative of the property owner) of the lot or tract of land on which such tree or shrub is located.

The Contractor shall use every precaution to protect and prevent injury to trees and shrubs indicated to remain on or adjacent to the sites of the work, and he shall replace, at his own cost and expense, each and every tree and shrub not authorized by the property owner for removal, which may be damaged or destroyed by him, his employees, or subcontractor.

Payment for Clearing and Grubbing will be made on a plan quantity basis at the unit price per acre for the bid item “CLEARING AND GRUBBING”. All costs associated with clearing and grubbing of project area, waste sites, and borrow areas shall be considered completely covered by the bid item “CLEARING AND GRUBBING”.

28. ROADWAY EXCAVATION, EMBANKMENT AND COMPACTION

The City of Ozark, Missouri at the contractor’s discretion can provide approximately 1,080 cu. yards of embankment materials. The City will transport material and place it onsite. It shall be the Contractors responsibilities to verify all borrow materials are in accordance with the project specifications.

Roadway Excavation, Embankment and Compaction shall be in accordance with Missouri Standard Specifications for Highway Construction Section 203 and shall be modified to include the following:

All roadway excavation shall be unclassified. Payment for unclassified excavation will be made on a plan quantity or change order quantity basis, to the nearest cubic yard, at the contract unit price per cubic yard for bid item “UNCLASSIFIED EXCAVATION (ROADWAY)”, and will be considered full compensation for:

(a) Excavating.
(b) Hauling any distance.
(c) Placing and forming embankments.
(d) Preparation of subgrade
(e) Shouldering, rounding slopes, obliterating existing roadbeds or temporary construction, finishing of graded earth roadway, picking up and disposing of field stone and other rock.
(f) Disposal of excess excavation, including provision of, mulching and seeding waste areas.

Payment for embankment and compaction will be made on a plan quantity or change order quantity basis, to the nearest cubic yard at the contract unit price per cubic yard for bid item “EMBANKMENT IN PLACE WITH COMPACTION”, and will be considered full compensation for:

(a) Transporting roadway excavation or stockpile material or furnishing, transporting and placing borrow material from a contractor provided source.
(b) Placing and forming embankments.
(c) Compacting embankment or for adding or reducing water content of the embankment.
(d) Any excavation required to provide embankment material, including mulching and seeding a borrow site.
(e) Any work noted on the plans to be included in the contract unit price for embankment in place.

The Contractor shall be responsible for disposal of all excavated waste and unsuitable materials in accordance with all applicable Federal, State, and local ordinances. (See Procedures for Environmental Clearance of Borrow Sites and Other Disturbed Areas Outside of Right-of-Way.) This shall include any stockpiles of utility spoils along the project. The Contractor shall provide the Design Professional with copies of all necessary environmental clearances for any location which he intends to use to place such waste material. Disposal shall be considered incidental to the project and no additional payment will be made for compliance with this special provision. This includes, but is not limited to, procurement of all necessary environmental clearances for any proposed waste sites, loading, unloading, and hauling off of waste material, placement of waste material, and restoration of waste site after use, including seeding and mulching the waste area. Submittal for these clearances shall be considered incidental to construction and no direct payment will be made. An adjustment to the contract time will be considered for any delay caused by receiving the required clearances, but will not be a basis for additional compensation.

Embankment shall be constructed in accordance with this Specification. This work shall consist of constructing the required embankment from suitable material excavated on site or borrow materials obtained from sources selected by the contractor and approved by the Design Professional. This work shall be performed in conformance with the lines, grades and typical sections shown on the plans.

Prior to beginning excavation and embankment operations, clearing, grubbing and stripping shall be performed in that area. The existing asphalt driving surface and aggregate base (or existing gravel surface) shall be scarified and completely broken up to a minimum depth of at least six inches the full project length. Existing slopes steeper than 3 horizontal to 1 vertical will be cut and benched as indicated on the plans or as directed by the Design Professional. In areas in which less than 24” of compacted fill is to be placed over the old roadbed, the scarified pavement will be removed or redistributed in areas where more than 24" of fill will be placed.

The scarified material, existing subgrade and embankment in place shall be compacted using a sheepsfoot roller of sufficient weight and number of passes being made until no pumping is observed. The Design Professional shall observe the contractor Proof Rolling the subgrade as defined later in this specification. The Contractor shall endeavor to maintain the exposed subgrade in good condition, primarily by means of providing for proper drainage of the roadbed. If, through negligence on the part of the Contractor, the exposed subgrade degrades and becomes unsuitable, the Contractor, at his own expense, shall perform stabilization measures to eliminate soft spots, pumping, etc.

Embankment Material shall be clayey soils containing high chert content, obtained from sources selected by the Contractor and meeting with the approval of the Design Professional.

The contractor shall submit soil test results from an independent soil testing laboratory demonstrating that the proposed borrow material is suitable for roadway fill and giving a standard Proctor density curve.

Embankment and Borrow material shall have characteristics generally as follows:

Liquid Limit <50
Plasticity Index <20
Maximum Density >=90 pcf
Optimum Moisture 10-20%
California Bearing Ratio >=6

The contractor shall endeavor to maintain the completed embankment in good condition, primarily by means of providing for proper drainage of the roadbed and repair of equipment rutting. If, through negligence on the part of the Contractor, the embankment degrades and becomes unsuitable, the Contractor, at his own expense, shall perform corrective measures consisting of removal and replacement of a depth of embankment sufficient to restore the embankment to good condition, i.e., eliminate soft spots, pumping, etc.

Placement of roadway embankment shall be in layers not exceeding 8 inches, an uncompacted measurement, and shall be compacted as specified before the next layer is placed. The layers shall be placed approximately parallel to both the proposed profile grade and to the finished roadbed. Effective spreading equipment shall be used on each lift to obtain uniform thickness prior to compacting. Continuous leveling and manipulating will be required during compacting operations.

Occasional stones or rock fragments exceeding the thickness of the 8 inch layer shall be disposed of by being incorporated in the embankment outside the limits of the proposed surfaced traffic lanes. The thickness of the layer in these areas may be increased if necessary to accommodate the stones, but shall not exceed 12 inches, an uncompacted measurement.

Compaction of embankment on each layer shall consist of distributing all equipment movements over the entire embankment area and of at least three complete passes with a tamping-type roller. The tamping-type roller shall have tampers or feet projecting no less than 6 inches from the surface of the drum and shall have a minimum load on each tamper of 250 psi of tamping area. Compactive efforts shall be continued, if necessary, until the tamping feet perpetrate no more than 2 inches into the layer of material being compacted. Continuous leveling and manipulating will be required during compacting operations and the moisture content shall be adjusted as necessary to permit proper consolidation.

Proof Rolling shall be used when verifying the stability and uniformity of the subgrade. This procedure shall be performed in the presence of the Design Professional or its designee.

1. Use a test roller conforming to the following:

   A. Tandem axle, dual wheel dump truck.

   B. Tire pressure shall be no less than 90 percent of the manufacturer’s recommended maximum inflation.

   C. The minimum gross weight of the load truck shall be 60,000 pounds (30 ton). A weigh slip shall be provided, showing total weight, front axle weight and rear axle weight.

2. Procedure.

   A. Operate equipment at a rate not to exceed 3 to 5 mph or a comfortable walking pace. Adjust the speed to allow the Inspector to measure any deflections and/or areas of rutting.

B. Operate proof roller in a pattern so that all affected areas are loaded with at least one pass.

C. After proof rolling, check the subgrade for conformance to the plans, and correct all surface irregularities. Re-shape the subgrade within tolerances.

3. Evaluation.

A. Rutting up to 1 inch is acceptable. Rutting in excess of 1 inch shall be considered a failure and will require that the soil be reworked and compacted to the required density.

B. Deflection (pumping) up to 1 inch is acceptable. Deflection in excess of 1 inch but more than 2 inches shall be acceptable if there is not substantial cracking or lateral movement of the soil. Deflection in excess of 2 inches shall be considered failure, and will require that the soil be reworked and compacted to the required density.

C. When remedial work is performed new test roll shall be performed upon completion of the work.

29. EMBANKMENT PROTECTION

Embankment Protection shall be in accordance with Missouri Standard Specifications for Highway Construction Section 611 and shall be modified to include the following:

Payment for embankment protection will be made on a plan quantity basis and at the unit price per cubic yard for the bid item “TYPE 2 ROCK BLANKET”. All costs associated with furnishing the material, securing the source, quarrying, excavating, breaking and hauling the material to the job site, placement of the material, filter fabric and placement thereof, any excavation, backfilling, or subgrade preparation that may be required, and other work associated with placing the “TYPE 2 ROCK BLANKET” shall be considered completely covered by the bid item “TYPE 2 ROCK BLANKET”.

30. WOVEN WIRE AND/OR BARBED WIRE FENCE

Fencing shall be in accordance with Missouri Standard Specifications for Highway Construction Section 710 and shall be modified to include the following:

This work shall consist of furnishing and erecting woven wire and/or barbed wire fence, complete in place, in conformity with the plans, and at locations as shown on the plans, or established by the Design Professional. This bid item shall also include removal of the existing fence and posts.

Generally, fencing shall consist of the following materials:

A. Steel line post (4” dia X 6'-0") or T-post @ 10’ on center.
B. 5 strand, 4 point barbed wire, 12 gauge.
C. Zinc-coated or aluminum-coated woven wire fabric equal to or exceeding existing material.
D. Steel corner posts, 5” dia. @ top x 10’-0”
E. Steel brace posts, 2” dia. @ top x 10’-0”
F. Fabricated steel braces.
G. Brace wire, #9 gauge tension wire.
H. Heavy duty tubular steel gate.

All fencing shall be subject to visual inspection by the Design Professional and shall meet with his

approval prior to final acceptance.

Posts shall be set plumb, true to line and grade. Corner post assemblies shall be set at all horizontal angle points greater than 15 degrees in the line of fence. Pull post assemblies shall be set at all vertical angle points greater than 15 degrees but at not greater than 660 feet intervals. Corner post shall have a minimum embedment length of 5-feet into the ground.

Walk gates and drive gates complete with hinges, latches, braces, stops and locking devices shall be installed at locations shown on the plans. They shall be of the type and size shown on the plans.

Final measurement will not be made except for authorized changes during construction which significantly change the contract quantity or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity. Any changes must be approved in writing by the Design Professional prior to work being performed.

Payment will be made on a plan quantity basis at the unit price per lineal foot for the bid item “FENCING”. All costs associated with fencing including materials, excavating for posts, backfilling, clearing of fence row, trenching for fabric, placing extra strands of barbed wire for depressions, and all other incidental work or material shall be considered completely covered by the bid item “FENCING”.

Payment will be made on a plan quantity basis at the unit price per each for the bid item “GATES”. All costs associated with gates shall be considered completely covered by the bid item “GATES”

31. POLLUTION, EROSION AND SEDIMENT CONTROL

Pollution, erosion and sediment control shall be in accordance with Missouri Standard Specifications for Highway Construction Section 806 and shall be modified to include the following:

Payment for rock ditch checks will be made on a plan quantity basis and at the unit price per each for bid item “ROCK DITCH CHECKS”. All costs associated with constructing, maintaining, and repairing the rock ditch check shall be considered completely covered by the bid item “ROCK DITCH CHECKS”.

32. REMOVAL OF IMPROVEMENTS

Removal of Improvements shall be in accordance with Missouri Standard Specifications for Highway Construction Section 202 and shall be modified to include the following:

Payment for removals of bridge structures will be made on a plan quantity basis and at the unit price per lump sum for bid item “REMOVAL OF IMPROVEMENTS”. All costs associated with removing the existing roadway structures to include signs, culverts, guardrails, etc. shall be considered completely covered by the bid item “REMOVAL OF IMPROVEMENTS”.

33. REMOVALS FOR BRIDGE STRUCTURES

Removals for Bridge Structures shall be in accordance with Missouri Standard Specifications for Highway Construction Section 216 and shall be modified to include the following:

Payment for removals of bridge structures will be made on a plan quantity basis and at the unit price per lump sum for bid item “REMOVAL OF BRIDGES”. All costs associated with removing the existing bridge structures shall be considered completely covered by the bid item “REMOVAL OF BRIDGES”.

34. EXCAVATION FOR STRUCTURES

Excavation for Structures shall be in accordance with Missouri Standard Specifications for Highway Construction Section 206 and shall be modified to include the following:

This work shall consist of the necessary excavating for the foundations of all structures, the shaping and clearing of the upstream and downstream banks in the vicinity of the structure, the removing and the disposing of all excavated material, the backfilling around the completed structures, and all related works. Limits of the channel work are shown on the plans. Payment will be made on a plan quantity basis at the unit prices per cubic yard for the bid item "UNCLASSIFIED EXCAVATION (STRUCTURE)".

35. LOAD-BEARING PILES

Load bearing piles shall be in accordance with Missouri Standard Specifications for Highway Construction Section 702 and shall be modified to include the following:

No additional payments will be made for splicing piles.

36. PILE WAVE ANALYSIS

35.1.0 General.

35.1.1 Scope of Work. Scope of work shall include furnishing a wave equation analysis of piles (WEAP) as specified in this special provision.

35.1.2 Performance and Design Requirements. Performance and design conditions for WEAP shall be in accordance with section 4.0 of this special provision.

35.1.3 Qualifications. The contractor shall perform wave equation analysis utilizing the services of an independent dynamic pile testing consultant and qualified personnel. An engineer with a minimum of 5 years WEAP experience shall perform the analysis.

35.2.0 Execution.

35.2.1 Pile Driving Modeling. The contractor shall perform preconstruction wave equation analyses and prepare a summary report of the results. The wave equation analyses shall be used to assess the ability of all proposed pile driving systems to install piles to the required capacity and the desired penetration depth within allowable driving stresses. The report shall include a drivability graph relating pile capacity, blow count and driving stresses to depth. The report shall include a bearing graph relating the pile capacity to the pile driving resistance. The bearing graph shall indicate blow count versus capacity and stroke. The report shall also contain a constant capacity analysis or inspector's chart to assist the engineer in determining the required driving resistance at other field observed strokes. The contractor shall perform wave equation analyses in accordance with section 35.4.0 of this special provision. Acceptability of the wave equation report and the adequacy of analyses will be determined by the engineer.

35.2.1.1 WEAP shall provide driving criteria for driving piling to rock. WEAP shall give pile solution for driving piling through hard material to rock, or through soft material to rock.

35.2.1.2 Approval by the engineer of the proposed pile driving system will be based upon the wave equation analyses indicating that the proposed system can develop the specified pile capacity at a pile driving rate of 2 to 10 blows per inch at the end of driving, and within allowable driving stresses per *AASHTO LRFD Bridge Construction Specifications*, Section 4.4.1. The contractor shall provide preliminary pile driving criteria based on wave equation analyses and any anticipated capacity changes after driving, set-up or relaxation, subject to revision based upon field measurements.

35.2.1.3 If any changes or modifications are made to the approved pile driving system, additional wave equation analyses in accordance with section 2.1 of this special provision shall be required.

35.3.0 Schedule of Contract Submittals.

35.3.1 Proposed independent dynamic pile testing consultant, and a list of assigned personnel and their experience and qualifications shall be submitted to the engineer. All documents shall be submitted 45 calendar days before pile driving starts.

35.4.0 Wave Equation Analysis. A minimum of one and sufficient additional analyses as needed are required to define performance for all combinations of piles, driving systems and subsurface conditions anticipated.

35.5.0 Method of Measurement. Pile wave analysis will be measured per each bent.

35.6.0 Basis of Payment. Payment for the above described work will be considered completely covered by the contract unit price for "Pile Wave Analysis".

37. REINFORCING STEEL FOR CONCRETE STRUCTURES

Reinforcing steel for concrete structures shall be in accordance with Missouri Standard Specifications for Highway Construction Section 706 and shall be modified to include the following:

Four sets of shop drawings shall be submitted to the Design Professional for review and approval. Accuracy of the shop drawings is the responsibility of the fabricator. The approval will cover only the general design features, and in no case shall this approval be considered to cover errors or omission in the shop drawings.

38. CONCRETE MASONRY CONSTRUCTION

Concrete Masonry Construction shall be in accordance with Missouri Standard Specifications for Highway Construction Section 703 and shall be modified to include the following:

Prior to approval and use of the material, the Contractor shall furnish manufacturer's certifications, which state that the material supplied conforms to all of the requirements of these specifications. The certifications shall include, or have attached, specific results of laboratory tests for specified physical and chemical properties as determined from samples representative of the material. The Design Professional reserves the right to sample and test any material. Acceptance will be based on the certification, visual inspection, and the results of any tests the Design Professional may perform.

The Contractor shall be solely responsible to supply concrete that conforms to the requirements of these specifications. The proportions of ingredients shall be such as to produce a mixture which will work readily into the corners of the forms and around reinforcement by the methods of placing and consolidation employed in the work, but without permitting the materials to segregate or excessive free water to collect on the surface. The mixing procedures and proportions of ingredients shall be determined by the Contractor and shall produce the proper placeability, durability, strength and other required properties.

The Contractor shall notify the Design Professional in writing of the source and proportions of the mixture he proposes to furnish. The statement shall include the following:

A. The types and sources of aggregates.
B. Type and source of cement.
C. Scale weights of each aggregate proposed as pounds per cubic yard of concrete.
D. Quantity of water proposed as pounds or gallons per cubic yard concrete.
E. Quantity of cement proposed as sacks per cubic yard of concrete. If the cement is to be measured by the sack, the weight per sack shall be shown.
F. The type and quantity of air entrainment admixture.

The maximum slump requirement shall not be intentionally exceeded. An occasional deviation may be

permitted if it will not seriously affect the strength and serviceability of the concrete. The Design Professional will make the determination if the concrete is acceptable and is allowed to remain in place. This determination will be based on visual inspection of the finished product and compressive strength specimen test results. In the event that the concrete is allowed to remain in place, the Design Professional will document the basis of acceptance by contract modifications which may provide for an appropriate adjustment in the contract price of such work.

The Contractor shall provide and maintain for the sole use of the Design Professional adequate facilities for safe storage and proper curing of concrete test specimens on the project site for the first 24 hours.

The concrete supplier shall furnish with each load of concrete a certification which states that approved materials meeting the requirements of these specifications have been proportioned and mixed in accordance with the contract requirements. The supplier shall state in the certification the class of concrete being furnished, necessary project identification and the date. The concrete will be subject to acceptance or rejection by visual inspection at the job site.

39. BLASTING

No blasting will be permitted for this project.

40. PROTECTION AND MAINTENANCE OF PUBLIC AND PRIVATE PROPERTY

The Contractor shall protect, shore, brace, support and maintain any underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by the construction work performed by him. All pavement, surfacing driveways, curbs, walks, buildings, utility poles, guy wires, and other surface structures affected by construction operations in connection with the performance of this contract, together with all trees and shrubs in yards adjacent to the construction limits, shall be maintained and, if removed or otherwise damaged, shall be restored to the original condition whether within or outside the easement. All replacements of such underground construction and surface structures, or parts thereof, shall be made with new materials confirming to the requirement of these specifications, or if not specified, as approved by the Design Professional, at this Contractor's expense.

The Contractor shall be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, or other public or private property or facility, regardless of location or character, which may be caused by moving, hauling or otherwise transporting equipment, materials, or men to or from the work or any part or site thereof whether by him or his subcontractors. The Contractor shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over, the damaged property or facility concerning its repair or replacement or payment of costs incurred in connection with said damage.

No fence outside of the right-of-way or easement limits shall be removed without the prior written consent of the property owner of the lot or tract of land on which such fence is located. A copy of such written permission shall be given to the Design Professional. Any damage or disturbance to any item, whether publicly or privately owned, which is not noted to be disturbed shall be fixed or replaced to the satisfaction of the Owner and the Design Professional at the Contractor’s expense.

41. GEOTEXTILE CONSTRUCTION

Geotextile construction shall be in accordance with Missouri Standard Specifications for Highway Construction Section 624 and shall be modified to include the following:

There will be no direct measurement or payment for filter fabric as it shall be considered incidental to the items with which it is used.

42. ACCESS

The road will be closed for the duration of the project. The Contractor shall coordinate with local law enforcement, emergency services, schools, etc. to ensure that the public is aware that the road will be closed for the duration of construction. A letter confirming that all actions were taken to ensure the public was aware shall then be submitted to the Design Professional prior to proceeding with construction.

43. SAW CUTS

Saw cuts shall be performed at the transition between all new pavement and existing pavement whether or not so labeled on the plans. This includes asphalt and concrete surfacing. Saw cuts shall be full depth. The saw cuts shall include, but not be limited to, ends of project, side streets, driveways, sidewalks, and locations noted on the plans. Saw cuts shall be considered incidental to other work and shall not be paid for directly.

44. MAILBOX RELOCATION

Mail delivery must be maintained at all times. It shall be the Contractor's responsibility to provide this access and to relocate any mailboxes as required at no additional cost to their project. If mailboxes have to be temporarily relocated, the Contractor shall contact the post office prior to removal for specific location and instructions. Replacement of mailboxes to their original location shall be with all new posts and in accordance with postal regulations. Mailboxes which have been damaged during the project duration shall be replaced by the Contractor. No direct payment will be provided for mailbox removal or replacement.

45. FERTILIZING, SEEDING AND MULCHING

1. Fertilizing shall be in accordance with Missouri Standard Specifications for Highway Construction Section 801 and shall be modified to include the following:

   Lime and fertilizer application rates are as follows:

Nitrogen (N)	80 lbs. per acre
Phosphoric Acid (P_20_5)	80 lbs. per acre
Potash (K_20)	80 lbs. per acre
Effective Neutralizing Material	0 lbs. per acre

2. Seeding shall be in accordance with Missouri Standard Specifications for Highway Construction Section 805 and shall be modified to include the following:

   The following seed mixtures shall be applied at the rates specified:

   TYPICAL MIX – For all land between Right of Way lines and temporary construction easement.

Mixture Rate	
Tall fescue	80 lbs./acre
Annual ryegrass	5 lbs./acre
Teff Grass	5 lbs./acre
Perennial ryegrass	6 lbs./acre
White clover	6 lbs./acre
Oats	10 lbs./acre
Total	112 lbs./acre

3. Mulching shall conform to Section 802 and more specifically the contractor shall use vegetative mulch with mulch overspray.

4. Basis of Pavement.

a. No Direct payment will be made for fertilizing or mulching seeded areas.

b. All cost incurred by the contractor for labor, equipment, and materials in compliance with the above requirements including furnishing and placing fertilizer and mulch shall be considered as completely covered by the unit price bid for item “SEEDING”, per acre.

46. AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE AND FINAL ACCEPTANCE OF CONSTRUCTED FACILITIES

62.1 Description. The contractor shall comply with all laws pertaining to the Americans with Disabilities Act (ADA) during construction of pedestrian facilities on public rights of way for this project. An ADA Checklist is provided herein to be utilized by the contractor for verifying compliance with the ADA law. The contractor is expected to familiarize himself with the plans involving pedestrian facilities and the ADA Post Construction Checklist prior to performing the work.

62.2 ADA Checklist. The contractor can locate the ADA Checklist form on the Missouri Department of Transportation website:

http://www.modot.mo.gov/business/contractor_resources/forms.htm

62.2.1 The ADA Checklist is intended to be a helpful tool for the contractor to use during the construction of the pedestrian facilities and a basis for the commission’s acceptance of work. Prior to work being performed, the contractor shall bring to the engineer’s attention any planned work that is in conflict with the design or with the requirement shown in the checklist. Situations may arise where the checklist may not fully address all requirements needed to construct a facility to the full requirements of current ADA law. In those situations, the contractor shall propose a solution to the engineer that is compliant with current ADA law using the following hierarchy of resources: 2010 ADA Standards for Accessible Design, Draft Public Rights of Way Accessibility Guidelines (PROWAG) dated November 23, 2005, MoDOT’s Engineering Policy Guidelines (EPG), or a solution approved by the U.S. Access Board.

62.2.2 It is encouraged that the contractor monitors the completed sections of the newly constructed pedestrian facilities in attempts to minimize negative impacts that his equipment, subcontractors or general public may have on the work. Completed facilities must comply with the requirements of ADA and the ADA Checklist or have documented reasons for the non-complaint items to remain.

62.3 Coordination of Construction.

62.3.1 Prior to construction and/or closure on an existing pedestrian path of travel, the contractor shall submit a schedule of work to be constructed, which includes location of work performed, the duration of time the contractor expects to impact the facility and an accessible signed pedestrian detour complaint with MUTCD Section 6D that will be used during each stage of construction. This plan shall be submitted to the engineer for review and approval at or prior to the pre-construction conference. Accessible signed detours shall be in place prior to any work being performed that has the effect of closing an existing pedestrian travel way.

62.3.2 When consultant survey is included in the contract, the contractor shall use their survey crews to verify that the intended design can be constructed to the full requirements as

established in the 2010 ADA Standards. When 2010 ADA Standards do not give sufficient information to construct the contract work, the contractor shall refer to the PROWAG.

62.3.3 When consultant survey is not included in the contract, the contractor shall coordinate with the engineer, prior to construction, to determine if additional survey will be required to confirm the designs constructability.

62.4 Final Acceptance of Work. The contractor shall provide the completed ADA Checklist to the engineer at the semi-final inspection. ADA improvements require final inspection and compliance with the ADA requirements and the ADA Checklist. Each item listed in the checklist must receive either a "YES" or an "N/A" score. Any item receiving a "NO" will be deemed non-compliant and shall be corrected at the contractor's expense unless deemed otherwise by the engineer. Documentation must be provided about the location of any non-complaint items that are allowed to remain at the end of the construction project. Specific details of the non-complaint items, the ADA requirement that the work was not able to comply with, and the specific reasons that justify the exception are to be included with the completed ADA Checklist provided to the engineer.

62.4.1 Slope and grade measurements shall be made using a properly calibrated, 2 foot long, electronic digital level approved by the engineer.

62.5 Basis of Payment. The contractor will receive full pay of the contract unit cost for all sidewalk, ramp, curb ramp, median, island, approach work, cross walk striping, APS buttons, pedestrian heads, detectible warning systems and temporary traffic control measures that are completed during the current estimate period as approved by the engineer. Based upon completion of the ADA Checklist, the contractor shall complete any necessary adjustments to items deemed non-compliant as directed by the engineer.

62.5.1 No direct payment will be made to the contractor to recover the cost of equipment, labor, materials, or time required to fulfill the above provisions, unless specified elsewhere in the contract documents.

47. FINAL ACCEPTANCE AND PAYMENT

If the final documents are not completed and ready for project closeout, within 60 calendar days of final acceptance of the project, the Contractor shall pay to the Contracting Authority the amount specified as liquidated damages and as a penalty for each Calendar Day until the final payment documents are completed and ready for final payment. The amount of liquidated damages shall be deducted from any payments due or to become due to the Contractor. Final documentation shall include but not be limited to the following:

1. An affidavit, on the form prescribed by the Contracting Authority, to the effect that all payments have been made and all claims have been released for all material, labor and other items covered by the contract bond.
2. A Certification, on the form prescribed by the Contracting Authority, showing the actual final DBE participation on the project including name of DBE, type of work and amount paid to each DBE firm.
3. An affidavit, on the form prescribed by the Contracting Authority, to the effect that all workers have been paid in compliance with prevailing wage requirements within the contract.
4. Any other documents that may be required by the contract.

48. DECORATIVE METAL FENCES

PART 1 - GENERAL

A. SUMMARY

1. Section Includes:
    a. Decorative wrought iron picket fences and swing gate.

B. QUALITY ASSURANCE

1. Referenced Standards:
    a. ASTM International (ASTM):
        - A47, Ferritic Malleable Iron Castings.
        - A48, Gray Iron Castings.
        - A153, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
        - A242, High-Strength Low-Alloy Structural Steel.
        - A500, Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
        - A510, General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel.
        - A588, High-Strength Low-Alloy Structural Steel with 50 ksi Minimum Yield Point to 4-in. Thick.
        - A1011, Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
        - F626, Standard Specification for Fence Fittings.
        - F900, Standard Specification for Industrial and Commercial Swing Gates.
        - F2589 – Ornamental Fences Employing Steel Tubular Pickets.
        - F2814 – Standard Guide for Design and Construction of Ornamental Steel Picket Fence Systems for Security Purposes.
    b. American Welding Society (AWS).
        - D1.1, Structural Welding Code – Steel.
    c. Building Hardware Manufacturer's Association
        - A156.1, American National Standard for Butts and Hinges.
    d. Institute of Electrical and Electronics Engineers
        - C2, National Electrical Safety Code.
        - 81, Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Potentials of a Ground System.
    e. National Association of Architectural Metal Manufacturers
        - MBG 531, Metal Bar Grating Manual.
    f. National Fire Protection Association (NFPA)
        - 70, National Electrical Code (NEC).
    g. National Ornamental and Miscellaneous Metals Association
    h. Underwriters Laboratories, Inc. (UL).
        - 325, Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems
        - 467, Grounding and Bonding Equipment.
2. Qualifications:
    a. Installer shall have a minimum three (3) years experience installing similar fencing.
    b. Installer shall be fabricator of products.
    c. Utilize only AWS certified welders.
        - Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code – Steel."

C. DEFINITIONS

1. NPS: Nominal pipe size, in inches.
2. Installer or Applicator:

a. Installer or applicator is the person actually installing or applying the product in the field at the Project site.
b. Installer and applicator are synonymous.

D. SUBMITTALS

1. Shop Drawings:
   a. Product technical data including:
      - Acknowledgement that products submitted meets requirements of standards referenced.
      - Two (2) copies of Manufacturer's installation instructions.
   b. Scaled plan layout showing spacing of components, accessories, fittings, and post anchorage.
   c. Scaled shop drawings for gates include plans, elevations, sections, details, and attachments to other work.
      - Showing connections to adjacent construction, range of travel, and mechanical connections to fence.
      - Show size and location of concrete mounting pad.
   d. Mill certificates.
   e. Product Test Reports:
      - Based on evaluation of comprehensive tests performed by a qualified testing agency, for decorative metallic-coated steel tubular picket fences, including finish, indicating compliance with referenced standard.
   f. Welding certificates.
   g. Source quality control test results.

2. Operation and Maintenance Manuals:
   a. Furnish manufacturer’s installation, operation and maintenance manuals, bulletins, and spare parts lists.
   b. Furnish a complete Operation and Maintenance Support and Service plan which documents service for the equipment.

E. DELIVERY, STORAGE, AND HANDLING

1. Deliver materials and products in labeled packages. Store and handle in strict accordance with manufacturer’s instructions.

2. Upon receipt at jobsite, check materials to ensure no damage occurred during shipping or handling.

3. Store materials in a manner to protect against damage due to construction operations.

F. PROJECT CONDITIONS

1. Field verify all dimensions prior to fabrication of fence system; panels and gates.

2. Warranty
   a. Provide warranty against defects in material and workmanship for a period of one (1) year after end of correction period defined in the current General Conditions.
   b. Any equipment found to be defective within the first 12 months of service shall be replaced by the manufacturer with new equipment at no cost to the City.

PART 2 -PRODUCTS

A. ACCEPTABLE MANUFACTURERS

1. The following manufacturers are acceptable:
   a. Ameristar Fence Products.
   b. Iron Eagle Industries, Inc.
   c. Master Halco.
   d. Merchants Metal; a division of MMI Products, Inc.
   e. Payne Fence Products; a division of Payne Metal Works, Inc.
   f. Xcel Fence.
   g. Or equal.

B. COMPONENTS

1. Steel and Iron
   a. Plates, Shapes, and Bars: ASTM A588/A242.
   b. Bars (Pickets): Hot-rolled, carbon steel complying with ASTM A588/A242.
   c. Tubing: ASTM A500, cold formed steel tubing.
   d. Bar Grating: NAAMM MBG 531.
      1. Bars: Hot-rolled steel strip, ASTM A1011/A1011M, Commercial Steel, Type B.
      2. Wire Rods: ASTM A510 (ASTM A510M).
   e. Castings:
      1. Either gray or malleable iron unless otherwise indicated. Gray Iron per ASTM A48/A48M, Class 30. Malleable Iron per ASTM A47/A47M.
   f. Painting and Protective Coatings:
      1. Powder Coating.
      2. Color to be selected by Owner. Contractor shall coordinate color selection with Owner.
2. Decorative Tubular Picket Fences
   a. Design:
      1. Pressed point (spear shape) security fence, curved outward.
   b. Nominal Height: 72 inches (72”),6 feet (6’).
      1. Straight-run height: 72 inches (72”), 6 feet (6’).
   c. Comply with ASTM F2589 and A588/A242, for industrial application (class) unless otherwise indicated.
   d. Interior surface of tubes formed from uncoated steel sheet shall be hot dip zinc coated.
   e. Posts:
      1. End and Corner Posts:
      Square tubes, 3 by 3 inches (76 by 76 mm) formed from 0.105-inch (2.66 mm) nominal-thickness, 12 GA, sheet.
   f. Post Caps:
      1. Pre-fabricated per manufacturer.
   g. Pickets:
      1. Square tubes.
      2. Size:
         - 1 inch by 1 inch (0.25 by 0.25-mm).
         - Minimum wall thickness: 12 GA tubing.
      3. Picket Spacing: 4 inches.
   h. Fasteners: Manufacturer’s standard tamperproof, corrosion-resistant, color-coated fasteners matching fence components with resilient polymer washers.

C. FABRICATION

1. Pickets, rails, and posts shall be precut to specified lengths.
   a. Rails shall be pre-punched to accept pickets.

2. Completed sub-assemblies (i.e., panel sections) shall be capable of supporting a 600 LBS load applied at mid-span without permanent deformation.
   a. Panels shall be bias able to a 25% change in grade.

Post Size (O.D.)	Line Posts	Corner & Terminal Posts Gate Posts Gates Width < 4 FT Gates Width > 4 FT but less than 8 FT,
2-1/2", 3", 4", > 4"	10", 12", 16" all 4x Post O.D.	12", 15", 18", 5x Post O.D. 20", 24" 6x Post O.D.

D. SOURCE QUALITY CONTROL

1. Test related fence construction materials to meet the following standards:
   a. Posts and rails: ASTM F1043, Heavy Industrial.

PART 3 –EXECUTION

A. PREPARATION

1. Stake locations of fence lines, gates, and terminal posts.
   - Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

B. INSTALLATION

1. Install in accordance with the Manufacturer's instructions. Lines and grades shown on detail drawing with posts plumb and vertical.

2. Do not start fence installation before final grading is complete and finish elevations are established.

3. Attach rails to posts by welding.
   a. Align rails in a consistent manner.
   b. Place fence such that bottom of rails are two inches (2") above finished grade.

4. Space line posts at equal intervals not exceeding 8 feet OC.

5. Install post cap top at each post.

C. FIELD QUALITY CONTROL

1. Field Tolerances:
   - Post to post spacing: +/-1/2"
   - Plumbness of Posts: +/-1/8"
   - Visual Alignment of Posts and rails: Fencing which is visibly misaligned will not be accepted, and shall be corrected.
   - Consistency of picket alignment: +/-1/8"

END OF SECTION

PILE DATA / DRILLED SHAFT

BENT NO.				1	2	3	4
LOAD BEARING PILE		PILE TYPE AND SIZE		HP12x53	–	–	HP10x42
		NUMBER		6	–	–	5
		APPROXIMATE LENGTH PER EACH	FT	19.1	–	–	33.6
		PILE DRIVING VERIFICATION METHOD		WEAP	–	–	WEAP
		MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE	KIP	578	–	–	492
		HAMMER ENERGY REQUIRED	FT–LB	18,500	–	–	15,800
ROCK SOCKET	LAYER 1	FOUNDATION MATERIAL		–	ROCK	ROCK	–
		ELEVATION RANGE	FT	–	1103–1086	1105–1088	–
		DESIGN SIDE FRICTION MIN. NOMINAL AXIAL COMPRESSIVE RESISTANCE (SIDE RESISTANCE)	KSF	–	10	10	–
	LAYER 2	FOUNDATION MATERIAL		–	ROCK	ROCK	–
		ELEVATION RANGE	FT	–	1086–1078	1088–1078	–
		DESIGN SIDE FRICTION MIN. NOMINAL AXIAL COMPRESSIVE RESISTANCE (SIDE RESISTANCE)	KSF	–	10	10	–
		DESIGN END BEARING MIN. NOMINAL AXIAL COMPRESSIVE RESISTANCE (TIP RESISTANCE)	KSF	–	18	18	–

MANUFACTURED PILE POINT REINFORCEMENT & BITUMINOUS COATING SHALL BE USED ON ALL PILES IN THIS STRUCTURE.

MINIMUM ENERGY REQUIRED OF HAMMER IS BASED ON PLAN LENGTH AND MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE.

WEAP = WAVE EQUATION ANALYSIS OF PILES.

MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE (SIDE RESISTANCE + TIP RESISTANCE) = MAXIMUM FACTOR LOAD, RESISTANCE LOAD.

SONIC LOGGING TESTING SHALL BE PERFORMED ON ALL DRILLED SHAFTS AND ROCK SOCKETS.

MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE = MAXIMUM FACTORED LOADS/0.5.

HYDRAULIC SUMMARY DATA TABLE

DESIGN FLOOD DATA	
DRAINAGE AREA	194.2 SQ. MI.
DESIGN FREQUENCY	100 YR
DESIGN DISCHARGE	62.733 CFS
DESIGN HIGH WATER ELEVATION AT STRUCTURE	1130.41 FEET
100 YEAR DISCHARGE (FUTURE)	62,813 CFS
100 YEAR HIGH WATER ELEVATION AT STRUCTURE	1130.41 FEET
100 YEAR BACKWATER	1130.41 FEET
APPROACH ROADWAY OVERTOPPING FREQUENCY	2 YR.

ESTIMATE QUANTITIES FOR SLAB ON CONCRETE NU–GIRDER

ITEM	TOTAL	UNITS
CLASS B2 CONCRETE	390	C.Y.
REINFORCING STEEL	15,115	LBS.
REINFORCING STEEL (EPOXY COATED)	120,011	LBS.

THE TABLE OF ESTIMATED QUANTITIES OF SLAB ON CONCRETE NU–GIRDER REPRESENTS THE QUANTITIES USED IN PREPARING THE COST ESTIMATE FOR CONCRETE SLAB. THE AREA OF THE CONCRETE SLAB WILL BE MEASURED TO THE NEAREST SQUARE YARD WITH THE HORIZONTAL DIMENSION AS SHOWN ON THE PLAN OF SLAB. PAYMENT FOR PRESTRESSED PANELS, CONVENTIONAL FORMS, ALL CLASS B2 CONCRETE AND COATED AND UNCOATED REINFORCING STEEL WILL BE CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR THE SLAB. VARIATIONS MAY BE ENCOUNTERED IN THE ESTIMATED QUANTITIES BUT THE VARIATIONS CANNOT BE USED FOR AN ADJUSTMENT IN THE CONTRACT UNIT PRICE.

METHODS OF FORMING THE SLAB SHALL BE AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH SEC. 703. ALL HARDWARE FOR FORMING THE SLAB TO BE LEFT IN PLACE AS A PERMANENT PART OF THE STRUCTURE AND SHALL BE COATED IN ACCORDANCE WITH ASTM A123 OR ASTM B633 WITH A THICKNESS CLASS SC4 AND FINISH TYPE I, II OR III.

CLASS B–2 CONCRETE QUANTITY IS BASED ON MINIMUM TOP FLANGE THICKNESS AND MINIMUM JOINT MATERIAL THICKNESS.

ROADWAY QUANTITIES

ITEM	TOTAL	UNITS
CLEARING AND GRUBBING	6.4	ACRE
MOBILIZATION	1	LUMP SUM
EXCAVATION FOR ROADWAY–UNCLASSIFIED	4,062	CU. YARD
EMBANKMENT IN PLACE W/ COMPACTION	20,648	CU. YARD
TYPE 1 AGGREGATE FOR BASE (6 IN. THICK)	3,051	TON
BITUMINOUS PAVEMENT MIXTURE PG64–22, (BP–1, 2 IN. THICK)	949	TON
TACK COAT	440	GALLONS
BITUMINOUS PAVEMENT MIXTURE PG64–22, (BASE, 4 IN. THICK)	1,893	TON
MODIFIED SUBGRADE	3,667	SQ. YARD
AGGREGATE SURFACE (5 IN. THICK)	12	TON
FENCE (5–STRAND BARBED WIRE)	1,261	LIN. FOOT
FENCE (CABLE, CONNECTORS, POST)	400	LIN. FOOT
BRIDGE ANCHOR SECTION	4	EACH
ASYMMETRICAL TRANSITION SECTION	4	EACH
CRASHWORTHY END TERMINAL	4	EACH
TYPE "A" GUARDRAIL	725.25	LIN. FOOT
CULVERT (30 IN. DIA.)	101	LIN. FOOT
CULVERT (24 IN. DIA.)	144	LIN. FOOT
CULVERT (18 IN. DIA.)	121	LIN. FOOT
SEEDING	6.6	ACRE
CONCRETE BOX CULVERT (3'–6" RISE x 8'–6" SPAN)	1	LUMP SUM
TYPE 1 ROCK DITCH LINER	54	CU. YARD
MONUMENT AND PLAQUE	1	LUMP SUM

BRIDGE QUANTITIES

ITEM	SUBSTRUCTURE	SUPERSTRUCTURE	TOTAL	UNIT
REMOVAL OF BRIDGES	———	———	1	LUMP SUM
EXCAVATION FOR STRUCTURE–UNCLASSIFIED	———	———	238	CU. YARD
PRESTRESSED CONCRETE NU–GIRDER (NU–63)	———	1,426	1,426	LIN. FOOT
PLAIN NEOPRENE BEARING PAD	———	24	24	EACH
STEEL INTERMEDIATE DIAPHRAGM FOR P/S CONCRETE GIRDERS	———	15	15	EACH
REINFORCING STEEL (BRIDGE)	32,268	———	32,268	POUND
CLASS B–1 CONCRETE (SUBSTRUCTURE)	141	———	141	CU. YARD
STRUCTURAL STEEL PILES (10 IN.)	168	———	168	LIN. FOOT
STRUCTURAL STEEL PILES (12 IN.)	115	———	115	LIN. FOOT
PILE WAVE ANALYSIS	2	———	2	EACH
PILE POINT REINFORCEMENT	11	———	11	EACH
CORRAL RAIL	———	800	800	LIN. FOOT
SLAB ON CONCRETE NU–GIRDER	———	1,466	1,466	SQ. YARD
BRIDGE APPROACH SLAB	———	107	107	SQ. YARD
VERTICAL DRAIN AT END BENTS	———	2	2	EACH
DRILLED SHAFTS (4 FT. 0 IN. DIA)	69	———	69	LIN. FOOT
ROCK SOCKETS (3 FT. 6 IN. DIA)	36	———	36	LIN. FOOT
SONIC LOGGING TESTING	4	———	4	EACH
(72 IN.) PEDESTRIAN FENCE (STRUCTURES)	———	459	459	LIN. FOOT
* DECORATIVE METAL FENCE	———	459	459	LIN. FOOT
CONDUIT SYSTEM ON STRUCTURE	———	360	360	LIN. FOOT

* DECORATIVE FENCE SHALL BE IN LIEU OF THE 72 IN. PEDESTRIAN FENCE (STRUCTURES) AT THE DISCRETION OF THE OWNER.

No.	Revision/Issue	Date
1	ADDENDUM #1 – REVISED PER COMMENTS	10/07/19

GREAT RIVER ENGINEERING

Great River Associates, Inc. - Missouri State Certificate of Authority Numbers: Engineering: 2000156885, Land Surveying: 2001011476, Landscape Architecture: 2009013873

STATE OF MISSOURI
JEFFREY A BANDERET, JR.
NUMBER PE-2017030568
PROFESSIONAL ENGINEER
10-21-19

JEFFREY A. BANDERET, JR. - ENGINEER
MO# PE-2017030568

RIVERSIDE ROAD BRIDGE OVER FINLEY RIVER
BRO-B022(09) BRIDGE NO. 20900151
CHRISTIAN COUNTY, MISSOURI

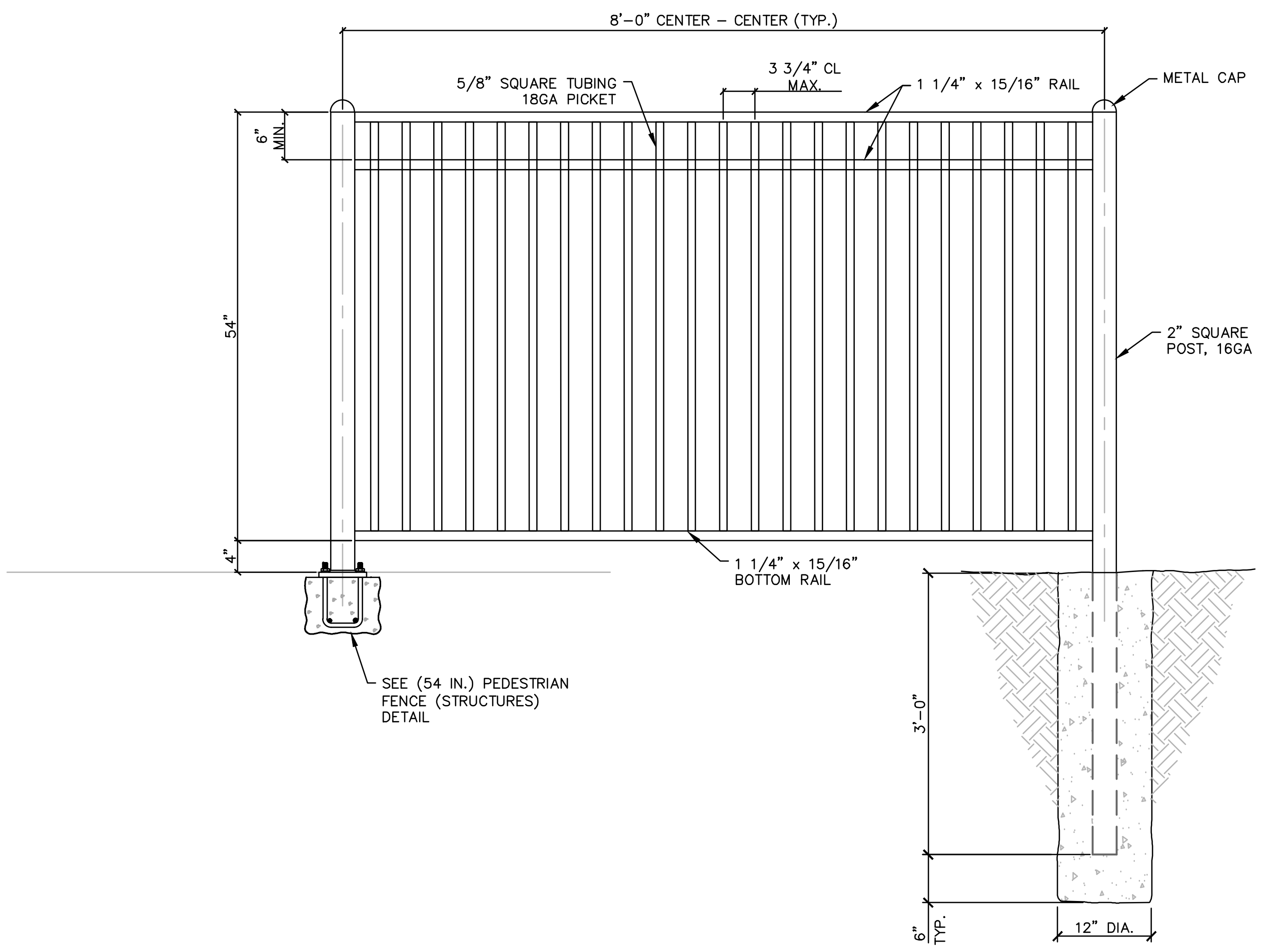
BRIDGE QUANTITIES & DATA

DATE: AUGUST, 2019

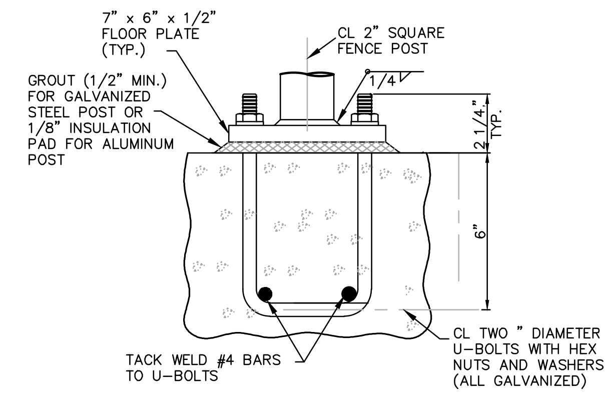
JOB NUMBER: 3848

SHEET 3 OF 68

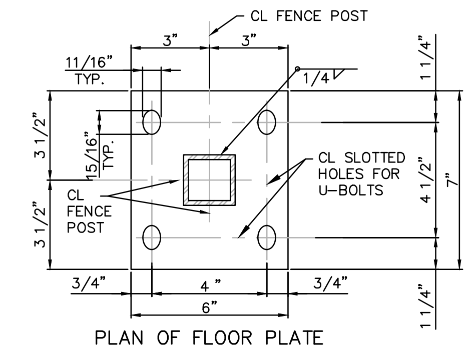
SHEET
C3



DECORATIVE METAL FENCE



TYPICAL FENCE POST CONNECTION



PLAN OF FLOOR PLATE

GENERAL NOTES:

PAYMENT FOR U-BOLTS WITH NUTS, WASHERS, AND #4 BARS WILL BE CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR (54 IN.) PEDESTRIAN FENCE (STRUCTURES).

MAXIMUM POST SPACING IN HORIZONTAL DIRECTION SHALL BE 10'-0".

(54 IN.) PEDESTRIAN FENCE (STRUCTURES) DETAILS

STA. 17+72.72 TO STA. 21+13.72

No.	Revision/Issue	Date

GREAT RIVER ENGINEERING

JEFFREY A. BANDERET, JR. - ENGINEER
MO# PE-2017030568

10-21-19

RIVERSIDE ROAD BRIDGE OVER FINLEY RIVER
BRO-B022(09) BRIDGE NO. 20900151
CHRISTIAN COUNTY, MISSOURI

DECORATIVE METAL FENCE AND DETAILS

DATE: OCTOBER, 2019
JOB NUMBER: 3848
SHEET 1

ADD #2