

ADVERTISEMENT FOR BIDS

JACKSON COUNTY, MISSOURI PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION

STOENNER ROAD BRIDGE REPLACEMENT JCPW PROJCT NO. 3247 – COUNTY BID NO. ITB 24-068

Bid documents will be available on **September 3, 2024**, for the “**Stoenner Road Bridge Replacement**” in Jackson County, Missouri on Bonfire. Bids must be submitted through the Bonfire Portal at <https://jacksongov.org.bonfirehub.com> prior to 2:00 PM, on **October 1, 2024**. Bids submitted any other method will not be accepted.

Project Location: The project is located 0.3 miles east of North Holly Road south of Levasy, Missouri as shown on the plans.

Proposed Work: The Contractor shall furnish all materials, equipment, tools and labor required for the removal of the existing cast-in-place culvert and installation of a single span bridge with pre-stressed concrete I-girders. Additional work tasks include minor reshaping of the roadway shoulders, placement of rock blanket, relocation of a water main, and all other incidental work in the most substantial and workmanlike manner.

DBE Goals: Jackson County hereby notifies all Bidders that it will affirmatively ensure that for any Contract entered into pursuant to this advertisement, disadvantaged, minority, women, and veteran owned business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, gender or national origin, in consideration for any award. A **10% DBE Goal** is a part of this contract.

Bid Submittal Procedure: The sealed Bid must be made on the Bonfire Portal. Each bid must include:

- 1) The completed bidding documents uploaded on the Bonfire Portal;
- 2) A Cashier's Check drawn on an acceptable bank, or an acceptable Bidder's Bond, in an amount not less than five percent (5%) of the total amount of the bid; the surety Performance Bond and surety Labor and Materials Bond must be with companies listed in the Department of the Treasury, Federal Register; delivered to the Purchasing Department prior to the Bid Deadline; and
- 3) A completed Compliance Report Form with current (issued within the last 12 months) Jackson County Certificate of Compliance. Failure to complete this report or attach a current certificate as outlined above may result in the rejection of the bid.

Question Procedure: All questions regarding this Invitation to Bid **MUST** be communicated electronically through the Bonfire Portal via the Opportunity Q&A on the Invitation to Bid. The Question Deadline is 2:00 PM, CDT on **September 24, 2024**.

Tax Exempt: Jackson County is a tax-exempt entity under Revised Statutes of Missouri 144.062 and will issue the Contractor and subcontractors an exemption certificate. For information contact Compliance Review Officer at (816) 881-3302. Bidders are advised to read Jackson County Ordinance No. 4297, as well as Jackson County Code Section 1072, enacted by the Jackson County Legislature February 28, 2011.

Bid Award: The Project will be awarded to the lowest, responsive, responsible bidder. The Bidder is hereby notified of a County requirement related to paying wage rates for certain delivery truck drivers. Bidders are advised to read Jackson County Ordinance No. 4465, as well as Jackson County Code Section 1072, enacted by the Jackson County Legislature October 15, 2012.

STOENNER ROAD BRIDGE OVER BRANCH OF PRAIRIE FIRE CREEK

Bridge No. 1020002 Replacement BRO-B048(059)

JACKSON COUNTY, MISSOURI

Department of Public Works
Engineering Division
303 West Walnut Street
Independence, Missouri 64050

INVITATION TO BID NO. 24-068

BID OF

Bidder Name_____

Bidder Address_____

FOR
CONSTRUCTING OR IMPROVING

S19 T50 R29W, Fort Osage
Jackson County, MO



STOENNER ROAD BRIDGE OVER BRANCH OF PRAIRIE FIRE CREEK

Bridge No. 1020002 Replacement BRO-B048(059)

JACKSON COUNTY
415 E.12th Street, Kansas City, MO 64106

CONTRACT AND BOND FOR CONSTRUCTING OR IMPROVING

S19 T50 R29W, Fort Osage
Jackson County, MO



ADVERTISEMENT FOR BIDS

JACKSON COUNTY, MISSOURI PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION

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- ☐ 1. Submit completed Contractor Questionnaire and/or Contractor Prequalification Questionnaire with attachments nor later than seven (7) days prior to the date and hour of the bid opening. See Secs 101-103 of the Standard Specifications, and Rule 7 CSR 10-15.900, "Prequalifications to Bid Certain Contractors". Questionnaire and Contract information are provided on MoDOT's website.
- ☐ 2. Bidders must complete the Compliance Report Form with current (issued within the last 12 months) Jackson County Certificate of Compliance.
- ☐ 3. The complete set of Bidding Documents includes all information through the DBE forms. The Technical Specifications/Job Special Provisions are for the Bidder's information only and is not to be returned with the bid.
- ☐ 4. Please read all items in the Bidding Documents carefully.
- ☐ 5. Bid Bond must be submitted to the Purchasing Department at the Jackson County Courthouse, 415 East 12th Street, Room G-1, Kansas City, Missouri 64106 to the Response Deadline.
- ☐ 6. Submit the DBE Identification Submittal within three (3) business days of the Bid Opening.
- ☐ 7. Download all forms, including Quotation Sheet, fill out and upload on Bonfire Portal as your bid.

a) Not providing a bid bond to the Purchasing Department prior to the Bid deadline

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NOTICE TO CONTRACTORS

All bids **MUST** be submitted through the Bonfire Portal at <https://jacksongov.org.bonfirehub.com> before 2:00 PM CST on October 1, 2024.

(1) **PROPOSED WORK:** The proposed work, hereinafter called the work, includes: Removal of the existing cast-in-place culvert and the installation single span prestressed concrete I-girders. Additional work tasks include minor reshaping of the roadway shoulders, placement of rock blanket, relocation of a water main, and all other incidental work in the most substantial and workmanlike manner.

(2) **COMPLIANCE WITH CONTRACT PROVISIONS:** The Bidder, having examined and being familiar with the local conditions affecting the work, and with the contract, contract documents, including the current version of the Missouri Highways and Transportation Commission's "Missouri Standard Specifications for Highway Construction", and "Missouri Standard Plans for Highway Construction", their revisions, and the request for bid, including appendices, the special provisions and plans, hereby proposes to furnish all labor, materials, equipment, services, etc., required for the performance and completion of the work. All references are to the Missouri Standard Specifications for Highway Construction, as revised, unless otherwise noted.

The following documents are available on the Missouri Department of Transportation web page at www.modot.mo.gov under "Business with MoDOT" "Standards and Specifications". The effective version shall be determined by the letting date of the project.

General Provisions & Supplemental Specifications
Supplemental Revisions to Missouri Standard Plans
For Highway Construction (if applicable)

These supplemental bidding documents contain all current revisions to the bound printed versions and have important legal consequences. It shall be conclusively presumed that they are in the Bidder's possession, and they have been reviewed and used by the Bidder in the preparation of any bid submitted on this project.

Please note that within the above-listed documents, the term "Commission" shall be replaced with the term, "Jackson County Public Works", and the term "Engineer" is a reference to the Engineer-of-Record from the County.

The contracting authority for this contract is Jackson County Public Works.

(3) **PERIOD OF PERFORMANCE:** If the Bid is accepted, the Bidder agrees that work shall be diligently prosecuted at such rate and in such manner as, in the judgment of the Engineer, is necessary for the completion of the work within the time specified as follows in accordance with Sec 108:

Calendar Days: 120

(4) **LIQUIDATED DAMAGES:** The bidder agrees that, should the bidder fail to complete the work in the time specified or such additional time as may be allowed by the engineer under the contract, the amount of liquidated damages to be recovered in accordance with Sec 108 shall be as follows:

Liquidated damages: \$950 per day (see General Conditions GC-49 and Special Conditions SC-49).

(5) **BID GUARANTY:** The Bidder shall submit a Bid Guaranty with the Bid meeting the requirements of Sec. 102 of the Missouri Standard Specifications for Highway Construction. A sample project Bid Bond form is included in the project manual. The Bidder shall mark the box below to identify the type of Bid Guaranty.

- ☐ Paper Bid Bond
- ☐ Cashier's Check

(6) **CERTIFICATIONS FOR FEDERAL JOBS:** By signing and submitting this Bid, the Bidder makes the certifications appearing in Sec. 102.18.1 (regarding affirmative action and equal opportunity), Sec. 102.18.2 (regarding disbarment, eligibility, indictments, convictions, or civil judgments), Sec. 102.18.3 (regarding anti-collusion), and Sec. 102.18.4 (regarding lobbying activities). Any necessary documentation is to accompany the bid submission, as required by these sections. As provided in Sec. 108.13, the contracting authority may terminate the contract for acts of misconduct, which includes but is not limited to fraud, dishonesty, and material misrepresentation or omission of fact within the bid submission.

(7) **ANTIDISCRIMINATION:** The Contracting Authority hereby notifies all Bidders that it will affirmatively insure that in any Contract entered into pursuant to this advertisement, businesses owned and controlled by socially and economically disadvantaged individuals will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, religion, creed, sex, age, ancestry, or national origin in consideration for an award.

(8) **FEDERAL AND STATE INSPECTION:** The Federal Government is participating in the cost of construction of this project. All applicable Federal laws, and the regulations made pursuant to such laws, shall be observed by the contractor, and the work will be subject to the inspection of the appropriate State or Federal Agency in the same manner as provided in Sec 105.10 of the Missouri Standard Specifications for Highway Construction with all revisions applicable to this bid and contract.

(9) **PREVAILING WAGE (FEDERAL AND STATE):** This contract requires payment of the prevailing hourly rate of wages for each craft or type of work 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 applicable state wage rates for this contract are detailed in "Annual Wage Order No. 31", that is attached to this bidding document. The applicable federal wage rates for this contract are the effective Davis-Bacon federal wage rates posted the tenth day before the bid opening date and are attached herein.

These supplemental Bidding Documents have important legal consequences. It shall be conclusively presumed that they are in the Bidder's possession, and they have been reviewed and used by the Bidder in the preparation of any Bid submitted on this project.

(10) **WORKER ELIGIBILITY REQUIREMENTS:** Execution of the construction contract for this project is dependent upon the awarded Bidder providing an Affidavit of Compliance AND E-Verify Memorandum-of-Understanding (MOU) between the Bidder and Department of Homeland Security to the Contracting Authority as required by section 285.530 RSMo. The cover page and signature page of the E-Verify MOU and the Affidavit must be submitted prior to award of this contract.

A sample Affidavit of Compliance can be found at the Missouri Attorney General's website at the following link:

http://ago.mo.gov/forms/Affidavit_of_Compliance.pdf

All Bidders must also be enrolled in the E-Verify Program, and include their MOU prior to contract execution. Bidders who are not enrolled will need to go to the following website link and select "Enroll in the Program" to get started. After completing the program, they will receive their E-Verify MOU with Department of Homeland Security. This document will need to be printed out and kept on file so that a copy can be attached to the Affidavit of Compliance. The link is:

http://www.dhs.gov/files/programs/gc_1185221678150.shtm

This requirement also applies to subcontractors and contract labor, but this contract only requires submittal of the verification documents for the prime contractor. It is the prime contractor's responsibility to verify the worker eligibility of their subcontractors in order to protect their own company from liability as required by section 285.530 RSMo.

(11) OSHA TEN HOUR TRAINING REQUIREMENTS: Missouri Law, 292.675 RSMO, requires any awarded contractor and its subcontractor(s) to provide a ten-hour Occupational Safety and Health Administration (OSHA) Construction Safety Program (or a similar program approved by the Missouri Department of Labor and Industrial Relations as a qualified substitute) for their on-site employees (laborers, workmen, drivers, equipment operators, and craftsmen) who have not previously completed such a program and are directly engaged in actual construction of the improvement (or working at a nearby or adjacent facility used for construction of the improvement). The awarded contractor and its subcontractor(s) shall require all such employees to complete this ten-hour program, pursuant to 292.675 RSMO, unless they hold documentation on their prior completion of said program. Penalties, for Non-Compliance include contractor forfeiture to the Contracting Authority in the amount of \$2,500, plus \$100 per contractor and subcontractor employee for each calendar day such employee is employed beyond the elapsed time period for required program completion under 292.675 RSMO.

(12) BUY AMERICA REQUIREMENTS: Construction contracts shall assure compliance with Section 165 of the Surface Transportation Assistance Act of 1982, Section 337 of the Surface Transportation and Uniform Relocation Assistance Act of 1987, and 23 CFR 635.410 regarding Buy America provisions on the procurement of foreign products and materials. On all contracts involving Federal-aid, all products of iron, steel, or a coating of steel which are incorporated into the work must have been manufactured in the United States. The Contracting Authority may allow minimal amounts of these materials from foreign sources, provided the cost does not exceed 0.1 percent of the contract sum or \$2,500, whichever is greater. The Contractor certifies that these materials are of domestic origin. Additional information regarding the "Buy America" requirements can be found at:

<http://www.fhwa.dot.gov/programadmin/contracts/b-amquck.cfm>

(13) ADDENDUM ACKNOWLEDGEMENT: The undersigned states that the all addenda (if applicable) have been received, acknowledged and incorporated into their Bid, prior to submittal. For paper bids, staple addenda to the bid in the appropriate part of the bid.

(14) SIGNATURE AND IDENTITY OF BIDDER: The undersigned states that the following provided information is correct and that (if not signing with the intention to bind themselves to become the responsible and sole bidder) they are the agent of, and they are signing and executing this, as the bid of

_____,
which is the correct LEGAL NAME as stated on the Contractor questionnaire.

a) The organization submitting this bid is a(n) (1) individual bidder, (2) partnership, (3) joint venturer (whether individuals or corporations, and whether doing business under a fictitious name), or (4) corporation. Indicate by marking the appropriate box below.

☐ sole individual

☐ partnership

☐ joint venture

☐ corporation, incorporated under laws of state of _____.

b) If the Bidder is doing business under a fictitious name, indicate below by filling in the fictitious

name: _____

Executed by Bidder this _____ day of _____ 2024.

THE BIDDER CERTIFIES THAT THE BIDDER AND ITS OFFICIALS, AGENTS, AND EMPLOYEES HAVE NEITHER DIRECTLY NOR INDIRECTLY ENTERED INTO ANY AGREEMENT, PARTICIPATED IN ANY COLLUSION, OR OTHERWISE TAKEN ANY ACTION IN RESTRAINT OF FREE COMPETITIVE BIDDING IN CONNECTION WITH THIS BID, AND THAT THE BIDDER INTENDS TO PERFORM THE WORK WITH ITS OWN BONAFIDE EMPLOYEES AND SUBCONTRACTORS, AND DID NOT BID FOR THE BENEFIT OF ANOTHER CONTRACTOR.

THE BIDDER ACKNOWLEDGES THAT THIS IS AN UNSWORN DECLARATION, EXECUTED UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE UNITED STATES AND/OR FALSE DECLARATION UNDER THE LAWS OF MISSOURI, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS. THE FAILURE TO PROVIDE THIS CERTIFICATION IN THIS BID MAY MAKE THIS BID NON-RESPONSIVE, AND CAUSE IT TO BE REJECTED.

THE BIDDER CERTIFIES THAT THE BIDDER'S COMPANY KNOWINGLY EMPLOYS ONLY INDIVIDUALS WHO ARE AUTHORIZED TO WORK IN THE UNITED STATES IN ACCORDANCE WITH APPLICABLE FEDERAL AND STATE LAWS AND ALL PROVISIONS OF MISSOURI EXECUTIVE ORDER NO. 07-13 FOR CONTRACTS WITH THE CONTRACTING AUTHORITY.

☐ Check this box ONLY if the bidder REFUSES to make any or all of these certifications. The bidder may provide an explanation for the refusal(s) with this submittal.

Signature of Bidder's Owner, Officer, Partner or Authorized Agent

Please print or type name and title of person signing here

Attest:

Affix Corporate Seal

Secretary of Corporation if Bidder is a Corporation

NOTE: If Bidder is doing business under a fictitious name, the Bid shall be executed in the legal name of the individual, partners, joint ventures, or corporation, and registration of fictitious name filed with the secretary of state, as required by sections 417.200 to 417.230 RSMo. If the Bidder is a corporation not organized under the laws of Missouri, it shall procure a certificate of authority to do business in Missouri, as required by Section 351.572 et seq RSMo. A certified copy of such registration of fictitious name or certificate of authority to do business in Missouri shall be filed with the Missouri Highways and Transportation Commission, as required by the standard specifications.

(15) TRAINEES: By submitting this Bid, the Bidder certifies that the Bidder is familiar with the Training Provision in the Missouri Highways and Transportation Commission's "General Provisions and Supplement Specifications" which are available on the Missouri Department of Transportation web page at www.modot.mo.gov under "Business with MoDOT" "Standards and Specifications". The number of trainee hours provided under this contract will be 0 slots at 1,000 hours per slot or 0 hours.

(16) SUBCONTRACTOR DISCLOSURE: Requirements contained within Sec 102.7.12 of the Missouri Standard Specification for Highway Construction shall be waived for this contract.

(17) PROJECT AWARD: This project will be awarded to the lowest, responsive, responsible Bidder.

(18) MATERIALS INSPECTIONS: All technicians who perform, or are required by the FHWA to witness, such sampling and testing shall be deemed as qualified by virtue of successfully completing the requirements of EPG 106.18 Technician Certification Program, for that specific technical area.

(19) PRIME CONTRACTOR REQUIREMENTS: The limitation in Sec 108.1.1 of the Missouri Standard Specifications for Highway Construction that "the contractor's organization shall perform work amounting to not less than 40 percent of the total contract cost" is waived for this contract. Instead, the less restrictive terms of the Federal Highway Administration's rule at Title 23 Code of Federal Regulations (CFR) § 635.116(a) shall apply, so that the contractor must perform project work with its own organization equal to and not less than 30 percent of the total original contract price. Second-tier subcontracting will not be permitted on this contract. All other provisions in Sec 108.1.1 et seq. of the Missouri Standard Specifications for Highway Construction shall remain in full force and effect, and shall continue to govern the contractor and its subcontractors, in accordance with the provisions of Title 23 CFR § 635.116.

(20) SALES AND USE TAX EXEMPTION: Jackson County Commission, a tax-exempt entity will furnish a Missouri Project Exemption Certificate as described in Section 144.062 RSMo to the awarded contractor who in turn may use the certificate to purchase materials for a specific project performed for the tax-exempt entity. Only the materials and supplies incorporated or consumed during the construction of the project are exempt. The certificate will be issued to the contractor for a specific project for a defined period of time.

(21) ITEMIZED BID: The bidder should complete the following section in accordance with Sec 102.7. The bidder proposes to furnish all labor, materials, services, etc. required for the performance and completion of the work.

BRO-B048(059) Stoenner Road Bridge Replacement over Prairie Fire Tributary Bridge No. 1020002

NO.	BID ITEM	UNITS	QUANTITY	UNIT PRICE	SUBTOTAL
201-99.19	CLEARING AND GRUBBING (.40 AC)	ACRE	0.4		\$ -
202-20.10	REMOVAL OF IMPROVEMENTS	LS	1		\$ -
203-50.00	UNCLASSIFIED EXCAVATION	CUYD	152		\$ -
203-55.00	EMBANKMENT IN PLACE	CUYD	1728		\$ -
304-05.04	TYPE 5 AGGREGATE FOR BASE (4 IN. THICK)	SQYD	287		\$ -
403-01.01	ASPHALTIC CONCRETE MIXTURE PF 64-22 (SP125C MIX)	TON	62.42		\$ -
603-99.01	WATER LINE RELOCATION	LS	1		\$ -
606-23.00A	TRANSITION SECTION, 6.5 FT. POSTS	EA	4		\$ -
606-30.15	TYPE A CRASHWORTHY END TERMINAL	EA	4		\$ -
611-30.20	FURNISHING TYPE 2 ROCK BLANKET	CUYD	728		\$ -
611-30.40	PLACING TYPE 2 ROCK BLANKET	CUYD	728		\$ -
618-10.00	MOBILIZATION	LS	1		\$ -
624-01.04A	SEPARATION GEOTEXTILE	SQYD	1578		\$ -
627-40.00	CONTRACTOR FURNISHED SURVEYING AND STAKING	LS	1		\$ -
703-42.14	CLASS B-2 CONCRETE (CHANNEL STABILIZATION HEADER)	CUYD	121.5		\$ -
706-10.00	REINFORCING STEEL	LF	3730		\$ -
805-10.00A	SEEDING - COOL SEASON GRASSES	ACRE	0.4		\$ -
806-10.05	ROCK DITCH CHECK	LF	175		\$ -
806-10.19	SILT FENCE	LF	653		\$ -
	TRAFFIC CONTROL ITEMS				
616-10.30	TYPE III MOVABLE BARRICADE	EA	6		\$ -
903-99.04	TEMPORARY TRAFFIC CONTROL SIGNING	SQFT	45		\$ -
	BRIDGE ITEMS				
Item No.	BID ITEM				
206-10.00	CLASS 1 EXCAVATION	CUYD	54.2		\$ -
216-05.00	REMOVAL OF BRIDGES	LS	1		\$ -
503-99.05	INTEGRATED APPROACH	SY	107		\$ -
702-10.10	STRUCTURAL STEEL PILES (10 IN.)	LF	741		\$ -
702-70.00	PILE POINT REINFORCEMENT	EA	12		\$ -
703-20.03	CLASS B-2 CONCRETE (SUBSTRUCTURE)	CUYD	27.6		\$ -
703-42.21	SLAB ON CONCRETE I-GIRDER	SQYD	232		\$ -
705-60.21	TYPE IV, PRESTRESSED CONCRETE I-GIRDER	LF	250		\$ -
713-99.03A	SL-1 BRIDGE RAIL	LF	175		\$ -
716-10.00	PLAIN NEOPRENE BEARING PAD	EA	6		\$ -
	Total Contractor				

Acknowledgement: Each bidder shall acknowledge receipt of addenda by their signature affixed hereto and addendum noted.

Addendum No.(s)

Contractor:

Phone:

Signature:

Date:

Name:

(please print)



BID BOND

Project Number: 21KC40005

Project Title: STOENNER ROAD BRIDGE OVER BRANCH OF PRAIRIE FIRE CREEK

Invitation to Bid No. 24-068

KNOW ALL MEN BY THESE PRESENTS, that we,

Legal Name of Bidding Firm

Of _____,
City and State

hereinafter referred to as "Bidder," and

Name of Surety

a corporation organized under the laws of the State of _____,
and authorized to transact business in the State of Missouri, as "Surety," are held and firmly bound unto the County of
Jackson, Missouri, hereinafter referred to as "Owner," in the penal sum of

_____ (\$ _____)
for the payment of which sum, well and truly to be made to the Owner, we bind ourselves and our heirs, executors,
administrators, successors, and assigns, jointly and severally, by these presents.

WHEREAS, Bidder is herewith submitting its Bid to enter into a contract with Owner for the above referenced project.

NOW, THEREFORE the condition of the obligation is such that if the Bidder is awarded the contract the Bidder will, within
the time required, enter into a contract and give a good sufficient surety bonds to secure the performance of the terms and
conditions of the contract and for the prompt payment of all labor and material furnished in the prosecution thereof as
required by the contract documents, then this obligation shall be void; otherwise the Bidder and Surety will immediately pay
unto the Owner the full amount of this bond as liquidated damages for failure to fulfill the conditions of this obligation; but in
no event shall the Surety's liability exceed the penal sum hereof.

DBE Submittal Forms

(6) **DBE Submittal Forms:** This form must be submitted by 4 p.m. three (3) business days after bid opening.

(A) **DBE Contract Goal:** By submitting this bid, the bidder certifies that the bidder is familiar with the DBE Program Requirements in this contract. The contract DBE goal for the amount of work to be awarded is «DBE»% of the total federal project price. The bidder shall also complete the DBE Submittal Form in accordance with the program requirements.

(B) **DBE Participation:** The bidder certifies that it will utilize DBE's as follows:

_____ % OF TOTAL FEDERAL CONTRACT

NOTE: Bidder must fill in the above blank. If no percentage is specified, the bidder certifies that it agrees to, and will comply with the contract goal. If a percentage below the contract goal is specified, then the bidder must submit complete documentation of good faith efforts to meet the DBE contract goal, immediately below.

(C) **Certification of Good Faith Efforts to Obtain DBE Participation:** By submitting its signed bid, the bidder certifies under penalty of perjury and other provisions of law, that the bidder took each of the following steps to try to obtain sufficient DBE participation to achieve the Commission's proposed DBE Contract Goal: (Attach additional sheets if necessary).

DBE Identification Submittal Form

(For Local Program Agency (LPA) Projects)

Job Number: _____

Route: _____

County: _____

Prime Contractor: _____

Contract Amount: _____

Identification of Participating DBE's: Provide the requested information below for each DBE participating on the project. Submit this information with your bid or to _____ no later than 4:00 p.m. on the 3rd working day after the bid opening. Fax or e-mail transmittal is permitted. The fax number is _____ and the e-mail address for submittal is _____. Contact MoDOT's External Civil Rights Division (ECR) at (573) 526-2978 for questions and assistance on completion. **This page of this document must be received for each DBE utilized on the project.**

All information must be provided.

If awarded the contract for this project, the undersigned will use the following DBE to perform or furnish the work, supplies, and/or services as shown below:

DBE Name: _____ Address: _____

(A) Line No.	(B) Dollar Value of DBE Work** (Unit Price x Quantity of the Item in (A), or Lump Sum)	(C) Dollar value applicable to DBE Goal** (100%, 60%)	(D) Dollar amount applicable to DBE Goal (B x C)	(E) Percent of total contract amount for line item (D / total contract amount)	Add or Remove Lines	
					-	+
					-	+
					-	+
					-	+
					-	+
					-	+
					-	+
					-	+
					-	+
					-	+
DBE Total:				Total %		

**Cannot exceed contract amount for given item of work

Trucking services credited at 100% if the DBE owns the trucks or is leasing from a DBE firm

Allowed amount of participation will be in accordance with 49 CFR Part 26.

Brokered services will only receive credit for fees.

Respectfully submitted:

Company Name (Prime Contractor)

Name / Title

Signed (Prime Contractor)

Instructions for Completing the DBE Identification Submittal Form

**(For Local Program Agency (LPA) Projects)
(ECR-101)**

Submit this form with your bid or as outlined on front of page no later than 4:00 p.m. on the 3rd working day after the bid opening. Only DBEs listed on MoDOT's Missouri Regional Certification Committee (**MRCC**) directory may be used towards obtaining the DBE goal on the project. DBE firm must be certified with the appropriate North American Industrial Classification System (**NAICS**) code for the type of work being utilized to perform. The MRCC directory is available at the following link under the MRCC Directory tab: [HTTP://www.modot.org/welcome-external-civil-rights](http://www.modot.org/welcome-external-civil-rights)

- (A) Insert Bid Line Item in the same order as it appears in the bid document.
- (B) Insert the result from multiplying the unit price for the bid line item by the quantities listed in column (A); a lump sum, if applicable, may also be inserted.
- (C) Insert the percentage of column (B) that the DBE will perform. If the DBE is a supplier as that term is defined in 49 CFR Part 26.55, then only 60% of the value in column (B) can be applied towards the contract specific goal. If the DBE is furnishing and installing the line item, then 100% of the value can be applied.
- (D) Insert the result from dividing columns (B) and (C).
- (E) Insert the result from dividing column (D) from the total bid line-item amount.

DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM REQUIREMENTS FOR LOCAL PROGRAMS

1.0 Disadvantaged Business Enterprise (DBE) Program Requirements. The subsequent Sections will apply only to contracts involving U.S. Department of Transportation (USDOT) federal-aid or federal financial participation. Federal-aid or federal financial participation includes, but is not limited to, any funds directly or indirectly received by MoDOT, or authorized for distribution to or through MoDOT, by the USDOT or any operating administration within the USDOT. These provisions will not apply to Commission contracts funded exclusively with state funds, or state and local funds. Any contractor, subcontractor, supplier, DBE firm, and contract surety involved in the performance of a federal-aid contract shall be aware of and fully understand the terms and conditions of the USDOT DBE Program, as the terms appear in Title 49 CFR Part 26 (as amended), the USDOT DBE Program regulations; Title 7 CSR Division 10, Chapter 8 (as amended), the Commission's DBE Program rules.

2.0 DBE Program Distinguished From Other Affirmative Action Programs. The USDOT DBE Program established by the U.S. Congress is not the same as, and does not involve or utilize, any of the elements or authority of other state or local affirmative action programs, nor does the program rely upon state legislation or gubernatorial executive orders for implementation or authorization, other than the general authority given the Commission in Section 226.150, RSMo. The USDOT DBE Program is implemented by the Commission and MoDOT, through and in conjunction with the FHWA, FTA and FAA, as a "recipient" defined in Title 49 CFR 26.5.

3.0 Policy Regarding DBE Firms. It is the policy of the U. S. Department of Transportation and MoDOT that businesses owned by socially and economically disadvantaged individuals have an opportunity to participate in the performance of contracts financed in whole or in part with federal funds. Consequently, the requirements of 49 CFR Part 26 (as amended) and the Commission's implementing state regulations in Title 7 CSR Division 10, Chapter 8, "Disadvantaged Business Enterprise Program", will apply to any contract with federal funds.

4.0 Opportunity for DBEs to Participate. Each contractor, subcontractor and supplier working on a contract financed in whole or in part with federal funds shall take all necessary and reasonable steps to ensure that DBEs have an opportunity to compete for, and participate in performance on project contracts and subcontracts.

5.0 Required Contract Provision. The federal-aid contract will include the following provision, as mandated by USDOT at Title 49 CFR 26.13(b):

(a) The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of the contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of the contract, which may result in the termination of the contract or such other remedy, as the recipient deems appropriate.

In this provision, "contractor" will be defined as the contractor on the contract; "subrecipient" will be defined as any subcontractor performing the work. For the purposes of any federal-aid contract awarded by the Commission, "the recipient" will be defined as either the Commission, or MoDOT, or both. The contractor shall include this same contract provision in every supply contract or subcontract the contractor makes or executes with a subrecipient.

6.0 Bank Services. The contractor, and each subrecipient on a federal-aid contract, is encouraged to use the services of banks owned and controlled by socially and economically disadvantaged individuals. Such banking services, and the fees charged for services, typically will not be eligible for DBE Program contract goal credit. Any questions on this subject should be directed to the MoDOT External Civil Rights Director. See [Sec 7.0](#).

7.0 DBE Program Information. DBE Program information may be obtained from the MoDOT External Civil Rights Director, P.O. Box 270, Jefferson City, Missouri 65102-0270. Phone (573) 751-4309, Fax (573) 526-0558, E-Mail: dbes@modot.mo.gov. It will be the duty of each contractor, for the contractor and for the contractor's subrecipients and surety, to take the steps necessary to determine the legal obligations and limitations under the DBE Program, as an element of responsibility. It will be the duty of each certified DBE firm to know, understand and comply with the DBE firm's legal obligations and limitations under the DBE Program, as a requirement of program participation. A surety providing a bid or contract bond will be bound by those bonds to the duties of the surety's principal.

8.0 DBE Certification, and the Missouri Unified Certification Program. The Missouri Department of Transportation and other certifying agencies within Missouri have partnered to form the Missouri Regional Certification Committee (MRCC) and developed a Unified Certification Program (UCP) pursuant to 49 CFR 26.81 and 7 CSR 10-8.061. Only DBE firms certified by the MRCC are eligible to perform work on a federal-aid contract for DBE contract goal credit. It is the contractor's responsibility to ensure firms identified for participation are approved certified DBE firms. The MRCC DBE Directory can be found at the following link: http://www.modot.mo.gov/business/contractor_resources/External_Civil_Rights/DBE_program.htm

9.0 DBE Program-Related Certifications Made By Bidders and Contractors. If the bidder makes a written, express disclaimer of one or more certifications or assurances in the bid, the bid will be considered non-responsive. By submitting a bid on any call involving USDOT federal financial participation, and by entering into any contract on the basis of that bid, the contractor makes each of the following DBE Program-related certifications and assurances to USDOT, to the Commission, and to MoDOT:

(a) The bidder certifies that management and bidding officers have reviewed and understand the bidding and project construction and administration obligations of the USDOT DBE Program regulations at Title 49 CFR Part 26 (as amended), the USDOT DBE Program regulations; Title 7 CSR Division 10, Chapter 8 (as amended), and the Commission's DBE Program rules. The bidder further certifies that the contractors management personnel on the project understand and are familiar with the requirements of these federal and state DBE Program regulations; and if the bidder was not familiar with or did not understand the requirements of these regulations, they have contacted the External Civil Rights Division of MoDOT and have been informed as to their duties and obligations under the DBE Program regulations by MoDOT staff and/or by USDOT DBE Program staff.

(b) The bidder certifies that the bidder has complied with the federal and state DBE Program requirements in submitting the bid, and will comply fully with these requirements in performing any federal-aid contract awarded on the basis of that bid.

(c) The bidder agrees to ensure that certified DBE firms have a full and fair opportunity to participate in the performance of the contract financed in whole or in part with federal funds. The bidder certifies that all necessary and reasonable steps were taken to ensure that DBE firms have an opportunity to compete for, and perform work on the contract. The bidder further certifies that the bidder not discriminate on the basis of race, color, age, national origin or sex in the performance of the contract, or in the award of any subcontract.

(d) The bidder certifies, under penalty of perjury and other applicable penal laws that if awarded the federal-aid contract, the contractor will make a good faith effort to utilize certified DBE firms to perform DBE work at or above the amount or percentage of the dollar value specified in the bidding documents. The bidder further certifies the bidder's understanding that the bidder may not unilaterally terminate, substitute for, or replace any DBE firm that was designated in the executed contract, in whole or in any part, with another DBE, any non-DBE firm or with the contractor's own forces or those of an affiliate of the contractor, without the prior written consent of MoDOT as set out below.

(e) The bidder certifies, under penalty of perjury and other applicable penal laws that a good faith effort was made to obtain DBE participation in the contract, at or above the DBE participation contract goal. The bidder

further certifies, under penalty of perjury and other applicable penal laws, that if the bidder is not able to meet the Commission's DBE contract goal, and if the bidder is not able to meet that DBE contract goal by the time the proposed DBE participation information must be submitted, within three business days after bid opening, the bidder has submitted with and as a part of the bid, a true, accurate, complete and detailed written explanation of good faith efforts to meet the DBE Contract Goal.

(f) The bidder understands and agrees that if awarded the contract the contractor is legally responsible to ensure that the contractor and each DBE subcontractor and supplier, comply fully with all regulatory and contractual requirements of the USDOT DBE Program, and that each DBE firm participating in the contract fully perform the designated tasks, with the DBE's own forces and equipment, under the DBE's own direct supervision and management. The bidder certifies, under penalty of perjury and other applicable penal laws, that if it awarded the contract and if MoDOT or the Commission determine that the contractor, a DBE or any other firm retained by the contractor has failed to comply with the DBE Program requirements or federal or state DBE Program regulations, the Commission, through MoDOT, shall have the sole authority and discretion to determine the extent of the monetary value to which the DBE contract goals have not been met, and to assess against and withhold monetary damages from the contractor in the full amount of that breach. The Commission, through MoDOT, may impose any other remedies available at law or provided in the contract in the event of a contract breach. The bidder further understands and agrees that this clause authorizes the Commission, through MoDOT, to determine and fix the extent of the damages caused by a breach of any contractual or regulatory DBE Program requirement and that the damage assessment will be enforced in addition to, and not in lieu of, any other general liquidated damages clause in the contract. By submitting a bid for a federal-aid contract, and by entering into a contract, the bidder irrevocably agrees to such an assessment of liquidated damages for DBE Program purposes, and authorizes the Commission and MoDOT to make such an assessment of liquidated damages against the contractor, and to collect that assessment from any sums due the contractor under the contract, or any other contract, or by other legal process. The bidder makes this certification, agreement and authorization on behalf of itself, its subcontractors and suppliers, and the bid bond and contract bond sureties, for each federal-aid contract.

(g) The surety upon any bid or contract bond acknowledges the surety is held and firmly bound to the Local Agency for each and every duty of the surety's principal provided in any bid or contract regarding the DBE program.

10.0 Designation of DBE firms to perform on contract The bidder states and certifies, under penalty of perjury or other applicable penal laws, that the DBE participation information submitted in the bid or within the stated time thereafter is true, correct and complete and that the information provided includes the names of all DBE firms that will participate in the contract, the specific line item (s) that each DBE firm will perform, and the creditable dollar amounts of the participation of each DBE. The specific line item must reference the MoDOT line number and item number contained in the bid. The bidder further states and certifies that the bidder has committed to use each DBE firm listed for the work shown to meet the DBE contract goal and that each DBE firm listed has clearly confirmed that the DBE firm will participate in and perform the work, with the DBE's own forces. Award of the contract will be conditioned upon meeting these and other listed requirements of 49 CFR 26.53.

(a) The bidder certifies the bidder's understanding that as the contractor on a contract funded in whole or in part by USDOT federal funds, the bidder may not unilaterally terminate, substitute for, or replace any DBE firm that was designated in the executed contract, in whole or in any part, with another DBE, any non-DBE firm or with the contractor's own forces or those of an affiliate, without the prior written consent of MoDOT. The bidder understands it must receive approval in writing from MoDOT for the termination of a DBE firm, or the substitution or replacement of a DBE before any substitute or replacement firm may begin work on the project in lieu of the DBE firm participation information listed in the executed contract,

(1) The bidder further certifies understanding, that if a DBE firm listed in the bid or approved in the executed contract documents ceases to be certified at any time during the performance of the contract work, and a contract or subcontract with that firm has not yet been executed by the prime and subcontractor, the contractor

can not count any work performed by that firm after the date of the firm's loss of eligibility toward meeting the DBE contract goal. However, if the contractor has executed a subcontract with the firm before the DBE lost eligibility and ceased to be a certified DBE, the contractor may continue to receive credit toward the DBE contract goal for that firm's work.

(2) The bidder further certifies understanding, that if a DBE subcontractor is terminated, or fails, refuses or is unable to complete the work on the contract for any reason, the contractor must promptly request authority to substitute or replace that firm. The request shall include written documentation that the DBE firm is unwilling or unable to perform the specified contract work. The contractor shall make good faith efforts to find another DBE subcontractor to substitute or replace the dollar amount of the work that was to have been performed by the DBE firm. The good faith efforts shall be directed at finding another DBE to perform the same, or more, dollar amount of work that the DBE firm that was terminated was to have performed under the executed contract. The substitute or replacement DBE firm may be retained to perform the same or different contract work from that which the terminated firm was to have performed. The contractor shall obtain approval from MoDOT in writing before the replacement or termination of one firm with another before the work will count toward the project DBE goal.

(3) The bidder further certifies the bidder's understanding, that the dollar value of any work completed by a DBE firm prior to approval of the DBE's substitution or replacement, in writing, by MoDOT will not be credited toward meeting the DBE contract goal. The contractor will remain subject to appropriate administrative remedies, including but not limited to, liquidated damages for the full dollar amount that the DBE contract goal is not met. Liquidated damages will also be assessed against the contractor if the original, substitute or replacement DBE firms perform the required contract work, but are not paid in full for some or all of that work by the contractor, including back charges. No credit toward the DBE goal will be given for any amount withheld from payment to the DBE or "back charged" against monies owed to the DBE, regardless of the purpose or asserted debt.

11.0 Good Faith Effort to Secure DBE Services. The bidder shall make a good faith effort to seek DBEs in a reasonable geographic area to where the solicitation for subcontracts and material is made. If the bidder cannot meet the goals using DBEs from that geographic area, the bidder shall, as a part of the effort to meet the goal, expand the search to a wider geographic area.

11.1 Bidding Procedure. The following bidding procedure shall apply to the contract, for DBE program compliance purposes.

11.2 Contract Goal, Good Faith Efforts Specified. The bidder may submit the completed "DBE Identification Submittal" information in the bid documents at the same time as, and within the sealed bid, at the time the bid is submitted. However, if that information is not completed and submitted with the initial sealed bid, then as a matter of responsiveness and responsibility, the apparent low and second low bidder shall file the completed "DBE Identification Submittal" pages to the Local Agency on or before 4:00 p.m. of the third business day after the bid opening date. The Local Agency may permit telefax transmittal. The complete and signed original documents shall be mailed to the Local Agency no later than the day of the telefax transmission. No extension of time will be allowed for any reason. The means of transmittal and the risk of timely receipt of the information shall be the bidder's.

The bidder is responsible to ensure that all submittals are checked for accuracy. Any and all omissions, deletions, and/or errors that may affect the end result of the bid package are the sole liabilities of the bidders. The bid may be found non-responsive if the submittal is not complete and/or accurate.

11.3 Bid Rejection, Bid Security Disposition. The failure of either the apparent low bidder or the second low bidder to file the completed and executed "DBE Identification Submittal", listing actual, committed DBE participation equal to or greater than the DBE contract goal percentage specified in the bid by 4:00 p.m. on the third

business day after the bid opening, will be cause for rejection of that bid, and the bid surety bond or bid guaranty of that bidder will be forfeited to and become the property of the Local Agency upon demand.

(a) Any bidder rejected for failure to submit the completed and executed “DBE Identification Submittal” information in the bidding documents, with full documentation of sufficient DBE participation to satisfy the DBE contract goal cannot submit a bid on the same, or substantially similar, project, when and if the project is re-advertised for bids. By submitting a bid on a federal-aid project, the bidder accepts and agrees to this provision, and the disposition of the bidders bid bond or guaranty, on behalf of the bidder and the bidders bid surety or guaranty.

(b) The surety separately acknowledges the surety to be held and firmly bound to the Local Agency to immediately upon demand pay the face amount of the bid bond.

11.4 Good Faith Efforts Described. Good faith efforts to meet the DBE contract goal may include, but are not limited to, the following:

(a) Attending a pre-bid meeting, if any, scheduled by the department to inform DBEs of contracting and subcontracting opportunities;

(b) Advertising in general circulation trade association and socially and economically disadvantaged business directed media concerning subcontracting opportunities.

(c) Providing written notice to a reasonable number of specific DBEs so that the DBE’s interest in the contract are solicited in sufficient time to allow the firm to participate effectively;

(d) Following-up on initial written notice or solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested.

(e) Maintaining documentation of responses received in the effort to solicit DBE participation.

(f) Selecting portions of work to be performed by DBEs to increase the likelihood of meeting the DBE goal, including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation.

(g) Providing interested DBEs adequate information about plans, specifications and requirements of the contract.

(h) Negotiating in good faith with interested DBEs, not rejecting DBEs as unqualified without sound business reasons based on a thorough investigation of the DBE’s capabilities.

(i) Making efforts to assist interested DBEs in obtaining bonding, lines of credit or insurance required by the Local Agency or by the bidder.

(j) Making effective use of available disadvantaged business organizations, minority bidders' groups, local, state and federal disadvantaged business assistance offices, MoDOT and other organizations that provide assistance in the recruitment and placement of DBEs.

11.5 Documentation, and Administrative Reconsideration of the Bidder's Good Faith Efforts. In the bidding documents, the bidder has the opportunity and responsibility to provide certified written documentation as to whether the bidder made a good faith effort to meet the DBE contract goal as proposed by MoDOT. Any bidder that has not met the Commission’s proposed DBE contract goal at the time of bid opening must submit the completed “Certification of Good Faith Efforts to Obtain DBE Participation”. The certification should be included

in the bidding documents, fully and in detail, at the time its sealed bid is submitted, however, if that information is not completed and submitted with the initial sealed bid, the bidder must submit the documentation to the Local Agency on or before 4:00 p.m. of the third business day after the bid opening date. The Local Agency may permit telefax transmittal. The complete and signed original documents shall be mailed to the Local Agency no later than the day of the telefax transmission. No extension of time will be allowed for any reason. The means of transmittal and the risk of timely receipt of the information shall be the bidder's responsibility. The bidder shall attach additional pages to the certification, if necessary, in order to fully detail specific good faith efforts made to obtain certified DBE firm participation in the proposed contract work. If the apparent low bidder appears to have failed to adequately document in the bid that the bidder made a good faith effort to achieve sufficient DBE participation in the contract work, that firm will be offered the opportunity for administrative reconsideration upon written request, before the Local Agency and MoDOT reject that bid as non-responsive. However, regardless of the DBE contract goal participation level proposed by the bidder, or the extent of good faith efforts shown, the apparent low and second low bidders shall each timely and separately file their completed and executed "DBE Identification Submittal" or face potential sanctions and the bid bond or guaranty, as specified in [Sec 10.0](#) of these provisions may become the property of the Local Agency subject to the Local Agency's demand.

12.0 DBE Participation for Contract Goal Credit. DBE participation on the contract will count toward meeting the DBE contract goal as follows:

(a) The applicable percentage of the total dollar value of the contract or subcontract awarded to the DBE will be counted toward meeting the DBE contract goal, only if that firm is certified by the MRCC as a DBE at the time the contract or subcontract is executed, and only for the value of the work, goods or services that are actually performed, or provided, by the DBE firm itself.

(b) When a DBE performs work as a participant in a joint venture, the contractor may count toward the DBE goal only that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the contract work that the DBE has performed with the DBE's own forces. The MoDOT External Civil Rights Director shall be contacted in advance regarding any joint venture involving both a DBE firm and a non-DBE firm to review and approve the contractor's organizational structure and proposed operation. When a DBE subcontracts part of the work of the contract to another firm, the value of that subcontracted work may be counted toward the DBE contract goal only if the DBE's subcontractor at a lower tier is a MoDOT certified DBE. Work that a DBE subcontracts to a non-DBE firm will not count toward the DBE contract goal. The cost of supplies and equipment a DBE subcontractor purchases or leases from the prime contractor or the prime's affiliated firms, or from another non-DBE subcontractor, will not count toward the DBE contract goal.

(c) The contractor may count expenditures to a DBE subrecipient toward the DBE contract goal only if the DBE performs a commercially useful function (CUF) on that contract.

(d) A contractor may not count the participation of a DBE subcontractor toward the contractor's final compliance with the contractor's DBE contract goal obligations until the amount being counted has actually been paid to the DBE. A contractor may count 60 percent of the contractor's expenditures actually paid for material and supplies obtained from a DBE certified by MoDOT as a regular dealer, and 100 percent of such expenditures actually paid for materials and supplies obtained from a certified DBE manufacturer.

(1) A regular dealer will be defined as a firm that owns, operates, or maintains a store, warehouse or other establishment in which the material, supplies, articles or equipment required and used under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a regular dealer, the DBE firm shall be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions will not be considered regular dealers.

(2) A DBE firm may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt, without owning, operating or maintaining a place of business where it keeps such items in stock, if the DBE both owns and operates distribution equipment for the products it sells and provides for the contract work. Any supplementation of a regular dealer's own distribution equipment shall be by a long-term lease agreement, and not on an ad hoc or contract-by-contract basis.

(3) If a DBE regular dealer is used for DBE contract goal credit, no additional credit will be given for hauling or delivery to the project site goods or materials sold by that DBE regular dealer. Those delivery costs shall be deemed included in the price charged for the goods or materials by the regular dealer, who shall be responsible for their distribution.

(4) A manufacturer will be defined as a firm that operates or maintains a factory or establishment that produces on the premises, the material, supplies, articles or equipment required under the contract and of the general character described by the project specifications. A manufacturer will include firms that produce finished goods or products from raw or unfinished material, or that purchases and substantially alters goods and materials to make them suitable for construction use before reselling them.

(e) A contractor may count toward the DBE contract goal the following expenditures to certified DBE firms that are not "regular dealers" or "manufacturers" for DBE program purposes:

(1) The contractor may count toward the DBE contract goal the entire amount of fees or commissions charged by a certified DBE firm for providing a bona fide service, such as professional, technical, consultant or managerial services, or for providing bonds or insurance specifically required for the performance of the federal-aid contract, if the fee is reasonable and not excessive, compared with fees customarily charged for similar services.

(2) The contractor may count toward the DBE contract goal the entire amount of that portion of the construction contract that is performed by the DBE's own forces and equipment, under the DBE's supervision. This includes the cost of supplies and material ordered and paid for by the DBE for contract work, including supplies purchased or equipment leased by the DBE except supplies and equipment a DBE subcontractor purchases or leases from the prime contractor or its affiliates.

(f) A contractor may count toward the DBE contract goal 100 percent of the fees paid to a certified DBE trucker or hauler for delivery of material and supplies required on a job site, but not for the cost of those materials or supplies themselves, or for the removal or relocation of excess material from or at the job site, when the DBE certified trucking company is not also the manufacturer of or a regular dealer in those material and supplies, provided that the trucking or hauling fee is determined by MoDOT to be reasonable as compared with fees customarily charged by non-DBE firms for similar services. The certified DBE trucking firm shall also perform a CUF on the project and not operate merely as a pass through for the purposes of gaining credit toward the contract DBE goal. Prior to submitting a bid, the contractor shall determine, or contact the MoDOT External Civil Rights Director for assistance in determining, whether a DBE trucking firm will meet the criteria for performing a CUF on the project.

(g) The contractor will receive DBE contract goal credit for the fees or commissions charged by and paid to a DBE broker who arranges or expedites sales, leases or other project work or service arrangements, provided that those fees are determined by MoDOT to be reasonable and not excessive, as compared with fees customarily charged by non-DBE firms for similar services. A broker will be defined as a person or firm that does not own or operate the delivery equipment necessary to transport materials, supplies or equipment to or from a job site; a broker typically will not purchase or pay for the material, supplies or equipment, and if the broker does purchase or pay for those items, those costs will be reimbursed in full. In most instances, the broker is merely the entity making arrangements for delivery of material, supplies, equipment, or arranging project services. To receive DBE contract goal credit, MoDOT must determine that the DBE broker has performed a CUF in providing the contract work or service.

13.0 Performing a Commercially Useful Function (CUF). No credit toward the DBE contract goal will be allowed for contract payments or expenditures to a DBE firm, if that DBE firm does not perform a CUF on that contract. A DBE performs a CUF when the DBE is solely responsible for execution of a distinct element of the contract work, and the DBE actually performs, manages and supervises the work involved with the firm's own forces. To perform a CUF, the DBE alone shall be responsible, and alone must bear the risk, for the material and supplies used on the contract, selecting a supplier or dealer from those available, negotiating price, determining quality and quantity, ordering the material and supplies, installing those materials with the DBE's own forces and equipment and paying for those materials and supplies. The amount the DBE firm is to be paid under the contract shall be commensurate with the work the DBE actually performs and the DBE credit claimed for the DBE's performance.

13.1 Contractor's Obligation to Monitor CUF Performance. It shall be solely the contractor's responsibility to ensure that all DBE firms perform a CUF. Further, the contractor is responsible to, and shall ensure that each DBE firm fully performs the DBE's designated tasks, with the DBE's own forces and equipment, under the DBE's own direct supervision and management. MoDOT is under no obligation to warn the contractor that a DBE's participation may not count toward the goal, other than through official notification with an opportunity for administrative reconsideration at the conclusion of the contract work.

13.2 DBEs Must Perform a Useful and Necessary Role in Contract Completion. A DBE does not perform a commercially useful function if the DBE's role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation.

13.3 DBEs Must Perform The Contract Work With Their Own Workforces. If a DBE does not perform and exercise responsibility for at least 30 percent of the total cost of the DBE's contract with the DBE's own work force, or the DBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved, MoDOT will presume that the DBE is not performing a commercially useful function.

13.4 Factors Used to Determine if a DBE Trucking Firm is Performing a CUF. The following factors will be used to determine whether a DBE trucking company is performing a commercially useful function (CUF):

(a) To perform a CUF, the DBE trucking firm shall be completely responsible for the management and supervision of the entire trucking operation that the DBE is being paid for on the contract work. There shall not be contrived arrangement, including but not limited to, any arrangement that would not customarily exist under regular construction project subcontracting practices for the purpose of meeting the DBE contract goal.

(b) The DBE must own and operate at least one fully licensed, insured and operational truck used in performance of the contract work. This does not include a supervisor's pickup truck or a similar vehicle that is not suitable for hauling the necessary materials or supplies.

(c) The DBE receives 100 percent contract goal credit for the total reasonable amount the DBE is paid for the transportation services provided on the contract using trucks the DBE owns, insures and operates, using drivers that the DBE employs.

(d) The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE firm that leases trucks from another DBE will receive credit for the total fair market value actually paid for of the transportation services the lessee DBE firm provides on the contract.

(e) The DBE may also lease trucks from a non-DBE firm, including an owner-operator. However, the DBE who leases trucks from a non-DBE is entitled to DBE contract goal credit only for the brokerage fee or commission the DBE receives as a result of the lease arrangement. The DBE will not receive credit for the total value of the

transportation services provided by the non-DBE lessee. Furthermore, no DBE contract goal credit will be allowed, even for brokerage fees or commissions, where the DBE leases the trucks from the contractor on the project or a firm owned, controlled by, or affiliated by ownership or control to, the contractor.

(f) For purposes of this section, the lease shall indicate that the DBE firm leasing the truck has exclusive use of and control over the truck. This will not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, provided the lease gives the DBE absolute priority for and control over the use of the leased truck. Leased trucks shall display the name and identification number of the DBE firm that has leased the truck at all times during the life of that lease.

13.5 MoDOT Makes Final Determination On Whether a CUF Is Performed. MoDOT and the Commission will have the final authority to determine whether a DBE firm has performed a CUF on a federal-aid contract. To determine whether a DBE is performing or has performed a CUF, MoDOT will evaluate the amount of work subcontracted by that DBE firm or performed by other firms, and the other firms forces and equipment. Any DBE work performed by the contractor, or by employees or equipment of the contractor will be subject to disallowance under the DBE Program, unless the independent validity and need is demonstrated.

14.0 Use of Joint Checks

Request for joint checks must be made to MoDOT by the contractor. Prior approval must be given before the use of joint checks is allowed. Contact External Civil Rights Division at 573-751-4309 or dbes@modot.mo.gov to request a Joint Check Request Form.

15.0 Verification of DBE Participation, Liquidated Damages.

15.1 Prior to final payment by the Local Agency, the contractor shall file with the Local Agency a detailed list showing each DBE used on the contract work, and the work performed by each DBE. The list shall show the actual dollar amount paid to each DBE for the creditable work on the contract, less any rebates, kickbacks, deductions, withholdings or other repayments made. The list shall be certified under penalty of perjury, or other law, to be accurate and complete. MoDOT and the Commission will use this certification and other information available to determine if the contractor and the contractor's DBEs satisfied the DBE contract goal percentage specified in the contract and the extent to which the DBEs were fully paid for that work. The contractor shall acknowledge, by the act of filing the detailed list, that the information is supplied to obtain payment regarding a federal participation contract.

15.2 Failure on the part of the contractor to achieve the DBE participation to which the contractor committed in the contract may result in liquidated damages being imposed on the contractor by the Commission for breach of contract and for non-compliance. If the contract was awarded with less than the original DBE contract goal proposed by the Commission, the revised lower amount shall become the final DBE contract goal, and that goal will be used to determine any liquidated damages to be assessed. Additionally, the Commission or MoDOT may impose any other administrative sanctions or remedies available at law or provided by the contract in the event of breach by the contractor by failing to satisfy the contractor's DBE contract goal commitment. However, no liquidated damages will be assessed, and no other administrative sanctions or remedies will be imposed when, for reasons beyond the control of the contractor and despite the good faith efforts made by the contractor, the final DBE contract goal participation percentage was not achieved. The contractor will be offered the opportunity for administrative reconsideration of any assessment of liquidated damages, upon written request. The administrative reconsideration officer may consider all facts presented, including the legitimacy or business reason for back charges assessed against a DBE firm, in determining the final amount of liquidated damages.

16.0 Prompt Payment Requirements. In accordance with Title 49 CFR 26.29, the contractor shall comply with the prompt payment requirements of that regulation, Section 34.057, RSMo., the provisions of the Commission's rule 7 CSR 10-8.111 and the contract. By bidding on a federal-aid contract, and by accepting and executing that contract, the contractor agrees to assume these contractual obligations, and to bind the contractor's subrecipients contractually to those prompt payment requirements at the contractor's expense.

17.0 Miscellaneous DBE Program Requirements. In accordance with Title 49 CFR Part 26 and the Commission's DBE Program rules in Title 7 CSR Division 10, Chapter 8, the contractor, for both the contractor and for the contractor's subcontractors and suppliers, whether DBE firms or not, shall commit to comply fully with the auditing, record keeping, confidentiality, cooperation and anti-intimidation or retaliation provisions contained in those federal and state DBE Program regulations. By bidding on a federal-aid contract, and by accepting and executing that contract, the contractor agrees to assume these contractual obligations, and to bind the contractor's subrecipients contractually, at the contractor's expense.

BID
Jackson County, Missouri

TO THE JACKSON COUNTY LEGISLATURE
KANSAS CITY, MISSOURI

THE UNDERSIGNED BIDDER, having examined the Plans, Specifications, General and Special Conditions, appendix, other proposed Contract documents, and all addenda thereto; and being acquainted with and fully understanding; (a) the extend and character of the work covered by this Bid; (b) the location, arrangement, and specified requirements of the proposed work; (c) the location, character, and condition of existing streets, roads, highways, railroads, pavements, surfacing, walks, driveways, curbs, gutters, trees, sewers, utilities, drainage courses and structures, and other installations both surface and underground, which may affect or be affected by the proposed work; (d) the nature, extent and type of excavations to be made, character and general conditions of materials to be excavated; (e) the necessary handling and re-handling of excavated materials, including construction of fills and embankments; (f) the location and extent of necessary or probable de-watering requirements; (g) the difficulties and hazards to the work which might be caused by storm and flood-water; (h) local conditions relative to labor, transportation, hauling, and rail delivery facilities; and (i) all other factors and conditions affecting or which may be affected by the work.

HEREBY PROPOSED, furnish all required materials, supplies, equipment, tools, and plant, to perform all necessary labor and supervision; and to construct, install, erect, equip, and complete all work stipulated as required by, and in accordance with the contract documents and the plans, specifications, and other documents referred to herein (as altered, amended, or modified by all addenda thereto) for and in consideration of the prices included in this Bid.

The undersigned bidder agrees to furnish the required bond and to enter into a contract within ten (10) calendar days after acceptance of the Bid, and further agrees to complete the entire work covered in the contract award within **120 CALENDAR DAYS**, after the date designated in a written order (Notice to Proceed) from the owner to begin work thereon.

Each Bid submitted must be accompanied by a cashier's check or Bid Guarantee bond in a minimum amount of five (5%) percent of the total amount of the bid. Checks shall be made in favor of Manager, Division of Finance, Jackson County, Missouri. Upon failure or refusal of the successful bidder to execute and deliver the contract and bond required within ten (10) days after he has been notified of the award of the Contract to him, as liquidated damages for such failure or refusal, the Owner may recover the full amount of the bond or in the event a cashier's check is furnished, an amount not-to-exceed five (5%) percent of the total amount of the bid.

In submitting this bid, it is understood that the right is reserved by the Owner to reject any and all bids, or to accept or reject any portion of any bid, and it is understood that this bid may not be withdrawn during a period of ninety (90) days after the scheduled time for the receipt of bids.

The undersigned bidder hereby certifies: (a) that this bid is genuine and is not made in the interest of, or in the behalf of, any undisclosed person, firm, or corporation, and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation; (b) that he has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid; (c) that he has not solicited or induced any person, firm or corporation to refrain from bidding; and (d) that he has not sought by collusion to obtain for himself any advantage over any other bidder or over the owner.

ADDENDA CERTIFICATION

The undersigned acknowledges receipt of addenda through and including numbers

_____, and that the bid submitted is in accordance with information, instructions and stipulations set forth thereby.

Authorized Signature of Bidder

Company Name

Date

The undersigned states that this Bid is made in the character or capacity checked in this paragraph, that he is the agent of, and is duly authorized to sign for:

Legal Name of Firm

and that the Bid is signed with the full understanding of the plans, provisions, specifications, and the foregoing terms of the Bid.

- | | |
|--|--|
| <input type="checkbox"/> Missouri Individual | <input type="checkbox"/> Foreign Individual |
| <input type="checkbox"/> Missouri Partnership | <input type="checkbox"/> Foreign Partnership |
| <input type="checkbox"/> Missouri Corporation | <input type="checkbox"/> Foreign Corporation |
| <input type="checkbox"/> Licensed in Missouri | |
| <input type="checkbox"/> Individual or Partnership, Missouri or Foreign, doing business in Missouri under fictitious name, registered in the office of Secretary of State. | |

Dated at _____,
City, State

this _____ day of _____, 2024.

SIGNATURES

Name and Address of all Partners

Attest (Seal)

Authorized Signature

Title of Person Signing

ACKNOWLEDGEMENT

STATE OF _____)
COUNTY OF _____) ss.

Printed Name of Authorized Person with Bidding Entity

being duly sworn, deposes and says that he/she is

_____, with
(Title of Person Signing)

(Name of Bidding Organization)

and that the answers to the foregoing questions and all statements therein contained are true and correct.

(Signature of Authorized Person with Bidding Entity)

Date

Sworn to before me this _____ day of _____, 2024.

Notary Public

My commission expires _____.

ANTI-COLLUSION STATEMENT

STATE OF _____)
COUNTY OF _____) ss.

_____,
(Printed Name of Authorized Person with Bidding Entity)

being duly sworn, deposes and says that he/she is

_____, with
(Title of Person Signing)

_____,
(Name of Bidding Organization)

and that all statements made and facts set out in the bid for the above project are true and correct, and that the bidder (the person, firm, association, or corporation making said bid) has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise competitive bidding in connection with such bid or any contract which may result from its acceptance.

_____, _____
(Signature of Authorized Person with Bidding Entity) Date

Affiliate further certifies that bidder is not financially interested in, or financially affiliated with, any other bidder for the above project.

By _____

By _____

By _____

Sworn to before me this _____ day of _____, 2024.

Notary Public

My commission expires _____.

EQUIPMENT QUESTIONNAIRE

The undersigned hereby represents that he proposes to perform the work in the following manner and with the following equipment:

- a. The work, if awarded, will have the personal supervision of whom?

- b. List below the equipment that will be used or is available for use on this contract.

QUANTITY ITEM	DESCRIPTION, SIZE, CAPACITY, ETC.	CONDITION	YEARS OF SERVICE	PRESENT LOCATION

Note: Attach additional sheets if required

LIST OF CONTRACTS ON HAND

[illegible]

Attach additional sheets as required.

AFFIDAVIT

Comes now _____, of the
Printed Name of Affiant

_____,
Name of Bidding Entity

and upon his/her oath states that in connection with the bid for

_____,
Name of Project Being Bid Upon

that he/she has neither promised or paid any money in connection with the securing of this contract, and that no proceeds from the construction of the said project have been promised or will be paid to any individual or corporation. This affidavit is not construed to include payments for actual labor or materials furnished.

Further, Affiant saith not.

Signature of Affiant

Subscribed and sworn to before me, a Notary Public in and for Jackson County, Missouri,

this _____ day of _____, 2024.

Notary Public

My commission expires _____.

ANNUAL WORKER ELIGIBILITY VERIFICATION AFFIDAVIT

(for joint ventures, a separate affidavit is require for each business entity)

STATE OF _____)
COUNTY OF _____) ss

On the _____ day of _____, 2024, before me appeared _____
(Affiant name)

personally know to me or proved to me on the basis of satisfactory evidence to be a person whose name is subscribed to this affidavit, who being by me duly sworn, stated as follows:

- I, the Affiant, am of sound mind, capable of making this affidavit, and personally certify the facts herein stated as required by Section 285.530, RSMo, to enter into any contract agreement with the County to perform any job, task, employment, labor, personal services, or any other activity for which compensation is provided, expected, or due, including but not limited to all activities conducted by business entities.

- I, the Affiant, am the _____ of _____
(Title) (Business Name)

and I am duly authorized, directed, and/or empowered to act officially and properly on behalf of this business entity.

- I, the Affiant, also hereby affirm and warrant that the aforementioned business entity is enrolled in a federal work authorization program operated by the United States Department of Homeland Security, and the aforementioned business entity shall participate in said program to verify the employment eligibility of newly hired employees working in connection with any services contracted by Jackson County, Missouri. I have attached documentation to this affidavit to evidence enrollment/participation by the aforementioned business entity in a federal work authorization program, as required by Section 285.530, RSMo.

- I, the Affiant, also hereby affirm and warrant that the aforementioned business entity does not and shall not knowingly employ, in connection with any services contracted by Jackson County, Missouri, any alien who does not have the legal right or authorization under federal law to work in the United States, as defined in 8 U.S.C. § 1324a(h)(3).

- I, the Affiant, am aware and recognize that, unless certain contract and affidavit conditions are satisfied pursuant to Section 285.525, RSMo, the aforementioned business entity may be held liable under Sections 285.525 through 285.550, RSMo, for subcontractors that knowingly employee or continue to employ any unauthorized alien to work within the State of Missouri.

- I, the Affiant, acknowledge that I am signing this affidavit as a free act and deed of the aforementioned business entity and under duress.

Subscribed and sworn to before me, a Notary Public in and for Jackson County, Missouri, this

_____ day of _____, 2024.

My Commission Expires _____
Notary Public

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TAX CLEARANCE REQUIRED

No person, firm, or corporation, resident in Jackson County, or otherwise legally within the taxing jurisdiction of the County, shall be eligible to provide any goods, contractual services or anything covered by the County Purchasing Ordinance, unless said person, firm, or corporation is duly listed and assessed on the County tax rolls and is in no way delinquent on any taxes payable to the County.

Where any individual, firm or corporation is a resident of Jackson County, or it otherwise appears that such firm is legally within the taxing jurisdiction of the County, and has made an offer, bid, or quotation for any County purchase, or has submitted an application to be given an opportunity to make quotations for County purchases, the Purchasing Manager shall cause a search to be made of the County tax rolls to determine the eligibility of that person, firm, or corporation under this section.

When the lowest responsible bidder is ineligible under this section, the Purchasing Manager may notify the bidder and allow three (3) days for the bidder to correct the deficiency or pay up any delinquency involved. If the bidder fails, after such notice, to comply within three (3) days, the Purchasing Manager shall proceed as though the lowest responsible bidder who is eligible under this section had entered the lowest bid.

Clerk of the Legislature
Jackson County Courthouse
306 West Kansas Avenue
Independence, Missouri 64050

Gentlemen:

I do hereby certify that year 2023 Personal Property and/or Merchants and Manufacturers Tax for State, County, School and other purposes have been paid in the amount of

\$_____. I further certify that assessment returns as required by law for year 2023 were filed on behalf of the undersigned, including therein a full, accurate and complete listing of all tangible personal property, subject to assessment in Jackson County, Missouri.

Authorized Signature of Bidder

Title

For:

Company Name

Street Address

City, State & Zip

Telephone #

Federal I.D. # _____

Subscribed and sworn to before me, a Notary Public in and for Jackson County, Missouri,

this _____ day of _____, 2024.

Notary Public

My commission expires _____.

EQUAL EMPLOYMENT OPPORTUNITY

The Contractor's attention is directed to Chapter 296, Section 296.010 to Section 296.070, inclusive, RSMo of "Discriminatory Employment Practices," including the latest amendments thereto, and to the Jackson County Ordinances, adopted by Ordinance Nos. 11, 479, and 1068, which provide in part, as follows:

"All contracts for labor services, supplies, and construction wherein Jackson County is a party, whether negotiated or formally advertised, shall contain a nondiscrimination in employment clause which shall provide that the contractor in the performance of the contract will not discriminate against any employee or applicant for employment because of race, creed, color, sex, age or national origin. Actions of the contractor shall include but not be limited to the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship."

The Contractor agrees to comply in all respects with all statutory provisions and the County Ordinances.

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LIST OF INTENDED SUBCONTRACTORS

Bidder Name: _____

Will subcontractors be used to complete the work? _____ Yes _____ No

If yes, complete this form and submit it with your bid.

Subcontractor No. _____

Name: _____

Address: _____

City & Zip Code: _____

Telephone No: _____ Fax No: _____

Description of work to be performed (include Bid Item Number, and Bid Item):

Dollar Amount	\$	DBE	Certif. Agency	
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Subcontractor No. _____

Name: _____

Address: _____

City & Zip Code: _____

Telephone No: _____ Fax No: _____

Description of work to be performed (include Bid Item Number, and Bid Item):

Dollar Amount	\$	DBE	Certif. Agency	
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LIST OF INTENDED SUBCONTRACTORS (cont.)

Subcontractor No. _____

Name: _____

Address: _____

City & Zip Code: _____

Telephone No: _____ Fax No: _____

Description of work to be performed (include Bid Item Number, and Bid Item):

Dollar Amount	\$	DBE	Certif. Agency	
------------------	----	-----	-------------------	--



Subcontractor No. _____

Name: _____

Address: _____

City & Zip Code: _____

Telephone No: _____ Fax No: _____

Description of work to be performed (include Bid Item Number, and Bid Item):

Dollar Amount	\$	DBE	Certif. Agency	
------------------	----	-----	-------------------	--



CERTIFICATE OF COMPLIANCE

OFFICE OF COUNTY AUDITOR COMPLIANCE REVIEW OFFICE

415 East 12th Street, 2nd Floor
Kansas City, Missouri 64106
(816) 881-3302

CERTIFICATE OF COMPLIANCE NOTICE:

Effectice September 21, 2024 all vendors doing business with Jackson County are required to obtain a Certificate of Compliance issued by Jackson County Compliance Review Office.

Certificates of Compliance will be required to be submitted with any bid response on September 21, 2024 or after. Failure to comply with this requirement may result in the REJECTION of a bid.

Vendors may complete a
Certificate of Compliance Application by visiting
www.jacomocompliance.com

A Certificate of Compliance will certify that vendors meet the following requirements:

1. Are duly listed and assessed on the tax rolls of Jackson County and are not delinquent in the payment of any taxes due to the County, or do not have on December 31st of the previous year any property subject to taxation by Jackson County.
2. Attest and agree to Chapter 6 of the Jackson County Code which prohibits discriminatory practices and promotes Equal Employment Opportunity by contractors doing business with Jackson County.

Certificate of Compliance Application must be submitted five (5) business days prior to a bid response deadline to allow sufficient time to process. A Certificate of Compliance is not guaranteed if this timeline is not met.

QUESTIONS? Email compliance@jacksongovorg

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OSHA TEN HOUR TRAINING

Missouri Law, Section 292.675, RSMo, requires any awarded contractor and its subcontractor(s) to provide a ten-hour Occupational Safety and Health Administration (OSHA) Construction Safety Program (or a similar program approved by the Missouri Department of Labor and Industrial Relations as a qualified substitute) for their on-site employees (laborer, workmen, drivers, equipment operators, and craftsmen) who have not previously completed such a program and are directly engaged in actual construction of the improvement (or working as a nearby or adjacent facility used for construction of the improvement). The awarded contractor and its subcontractor(s) shall require all such employees to complete this ten-hour program, pursuant to Section 292.675, RSMo, unless they hold documentation on their prior completion of said program. Penalties for Non-Compliance include contractor forfeiture to the Contracting Authority in the amount of \$2,500, plus \$100 contractor and subcontractor employee for each calendar day such employee is employed beyond the elapsed time period for required program completion under Section 292.675, RSMo.

The undersigned Bidder hereby certifies:

OSHA 10 CARD CERTIFICATION

The undersigned Bidder hereby certifies and acknowledges receipt of OSHA 10 Card(s) as the contractor and for the subcontractor(s) of this project. Copies of the card(s) shall be provided to Jackson County, Missouri to be reviewed by the Compliance Review Officer.

Authorized Signature of Bidder

Company Name

Date

GENERAL SPECIAL PROVISIONS – TABLE OF CONTENTS

General Special Provisions

Section DIVISION 100

- 105 Control of Work
- 106 Control of Material
- 108 Prosecution and Progress
- 109 Measurement and Payment

Section DIVISION 200

- 201 Clearing and Grubbing
- 202.30 Removal of Improvement for Roadway Contracts
- 203 Roadway and Drainage Excavation, Embankment and Compaction

Section DIVISION 300

- 310 Aggregate Surface

Section DIVISION 500

- 501 Concrete

Section DIVISION 700

- 702 Load Bearing Piles

Section DIVISION 800

- 801 Lime and Fertilizer
- 802 Mulching
- 805 Seeding

Section DIVISION 1000

- 1036 Reinforcing Steel for Concrete

GENERAL SPECIAL PROVISIONS

General

The work of this project shall be performed in accordance with the "Missouri Standard Specifications for Highway Construction" English Edition, dated 2021 as amended or supplemented herein. If a conflict exists between the two, this document shall prevail.

Materials will be accepted on the basis of certification of structural steel compliance and substantiating test reports furnished by manufacturers and/or fabricators.

Field testing will be performed by the consultant according to the requirements of the current Local Public Agency Manual, provided by the Missouri Highway & Transportation Commission.

DIVISION 100

GENERAL CONDITIONS OF THE CONTRACT

SECTION 105 - CONTROL OF WORK

105.8 Delete this Section in its entirety and substitute the following.

105.8 Construction Stakes, Lines and Grades.

All construction work shall be done to the lines and grades shown on the plans. The Owner will establish on the site the required benchmarks and base lines as shown on the plans. Detailed survey and staking for location and grade of individual structures or other construction, as well as measurements and elevations within structures shall be performed by the Contractor.

Amend Section 105.10 to include the following:

105.10.2.1 Observations and job control tests will generally be made by the engineer on the following items of work. It shall be the responsibility of the contractor to notify the engineer by 12:00 p.m. of the day preceding any operation which affects these items.

- Initial Layout
- Removal of Existing Structure
- Reinforcing Steel Placement
- All Concrete Operations
- Placement of Geotextile Fabric, Rock Blanket, and Rock Base

If any operation which affects the above-mentioned items is to be performed on a Monday, notification must be made to the engineer by 12:00 p.m. of the preceding Friday. The lack of construction observation by the engineer shall not relieve the contractor of the responsibility to construct the project according to the plans and specifications. Any work performed or materials used without notification to and authorization by the engineer, may be ordered removed and replaced at the contractor's expense.

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 requirements of the MoDOT Engineering Policy Guide 106.18 Technician Certification Program, for the specific technical area(s) witnessed or sampled.

SECTION 106 - CONTROL OF MATERIAL

Delete Section 106.3 and substitute the following:

106.3 Samples, Tests, and Cited Specification. The contractor shall submit certifications and substantiating test reports, furnished by the supplier or fabricator, 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.

SECTION 108 - PROSECUTION AND PROGRESS

Delete Section 108.4 through Section 108.4.4 and substitute the following:

108.4 Work Schedule. To ensure that the work will proceed continuously through the succeeding operations to its completion with the least possible interference to traffic and inconvenience to the public, the contractor shall, at the request of the engineer, submit for approval a complete schedule of the proposed construction procedure, stating the sequence in which various operations of work are to be performed.

SECTION 109 - MEASUREMENT AND PAYMENT

109.6 Delete this section in its entirety and substitute the following:

109.6 Method of Payment. The Contractor shall submit a copy of the payment estimate to the Engineer for review, approval, and forwarding to the County. The County will make payment to the Contractor within 30 days of their acceptance of the pay estimate. More details regarding payment will be discussed during the preconstruction meeting.

Delete Sec 109.7.2 and substitute the following:

109.7.2 The engineer may, in any payment estimate include the value of any non-perishable material that will be finally incorporated in the completed work. The material shall be in conformity with the plans and specifications in the contract and shall not have been used at the time of such estimate. The required certifications of such materials shall be submitted prior to the payment estimate. The material shall be delivered to the project or other location that is approved by the engineer. Any storage area not within the right of way shall be leased at the contractor's expense with provision for right of entry by the engineer during the period of storage. Certifications and invoices for material payment shall be submitted to the engineer at least 4 days prior to the estimate date. Receipted invoices for all material payments previously allowed on the estimate shall be submitted to the engineer within 42 days of the date of the estimate on which material allowance was made or such material allowance will be deducted from future payments. The amounts paid for such material shall reduce the amount of other partial or final payments due the contractor for the work performed as the materials are fabricated or incorporated in the completed work.

Delete Sec 109.14 and 109.15 in their entirety.

DIVISION 200

GRADING AND REMOVALS

SECTION 201 – CLEARING AND GRUBBING

Delete Section 201.3 in its entirety.

Delete Section 201.4 and substitute with the following:

201.4 Basis of Payment. Payment for this work will be included in the price per acre for the item, Clearing and Grubbing.

SECTION 202.30 – REMOVAL OF IMPROVEMENTS FOR ROADWAY CONTRACTS.

Delete Sections 202.30.2 and 202.30.3 in their entirety and substitute with the following:

202.30.2 Basis of Measurement and Payment. This work will not be measured for payment but will be considered a lump sum unit. Payment for this work will be included in the lump sum price for the item, Removal of Improvements.

SECTION 203 – ROADWAY AND DRAINAGE EXCAVATION, EMBANKMENT AND COMPACTION

Construction of all roadway embankments under this contract shall conform to Section 203.6. Method of Measurement shall conform to Section 203.8.1.

Delete Section 203.5.9 in its entirety.

DIVISION 300

BASES AND AGGREGATE SURFACES

SECTION 310 – AGGREGATE SURFACE

Amend Section 310.1 to include the following sentence:

Crushed stone surfacing shall be placed on side entrances.

Delete Section 310.2 in its entirety and substitute the following:

310.2 Material. In lieu of furnishing crushed stone meeting the requirements of the “Missouri Standard Specifications for Highway Construction”, the Contractor may provide aggregate of a size and grade that is normally used by the County.

Delete Section 310.5 in its entirety.

Delete Section 310.6 in its entirety and substitute the following:

310.6 Basis of Payment. Payment for accepted quantities of aggregate surface will be paid for in the Per Sq. Yds. item, 4” Layer Crushed Stone Base.

Add the following as Section 310.6.1

310.6.1 Contract quantities shall be used for final payment of crushed stone except if appreciable errors are found in the itemized bid, an authorized change order is made, or unauthorized deviations decrease the original quantities.

DIVISION 500

RIGID PAVEMENTS

SECTION 501 - CONCRETE

Delete Section 501.3 in its entirety and substitute the following:

501.3 Mix Design. The contractor shall be responsible for the mix design. The Engineer assumes no responsibility for the volume of concrete produced or furnished for the work.

Actual mix design shall be prepared and submitted by the Contractor to the Engineer for his approval. The design shall be within the applicable limits of the specifications for the class of concrete specified in the contract.

Contractor shall provide certification from the concrete supplier that the plant has been calibrated by the Missouri Department of Transportation.

If certain testing procedures are specified for acceptance of materials in the "Standard Specifications", materials will be accepted for use in this project upon receipt from the supplier of a certification that the product or material meets the requirements of the "Standard Specifications."

Concrete may be accepted on the basis of conventional field sampling and testing for characteristics such as slump and air, where specified, and test cylinders, with only intermittent or random plant inspection as deemed necessary for control by the project engineer. Under this system, arrangements should be made for the producer to state on the delivery ticket accompanying each load of concrete; the class of concrete being furnished, the weights of cement, aggregates and water used in the batch and the time of batching. Only supplier-certified cement may be used.

The testing lab can use sulfur mortar for capping compressive test cylinders or a reusable Neoprene Cap as approved by the Engineer.

Add the following as Section 501.4.1

501.4.1 Unless otherwise specified, all 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 and samples will be performed by the engineer, at no expense to the contractor.

Add the following as Section 501.4.2

501.4.2 The engineer will make at least one strength test for each 100 cubic yards, or fraction thereof, of each mix design of concrete placed in any 1 day. When the total quantity of concrete with a given mix design is less than 50 cubic yards, the strength tests may be waived by the engineer if, in his judgment, adequate evidence of satisfactory strength has been demonstrated for the same kind of concrete supplied by the same concrete plant to the same project.

DIVISION 700

STRUCTURES

SECTION 702 – LOAD-BEARING PILES

Delete Section 702.1 in its entirety and substitute the following:

702.1 Description. This work shall consist of furnishing and driving concrete and steel load-bearing piles to the bearing and penetration required, at the location shown on the plans.

702.3.1 Driving Equipment. In the fourth sentence, change the words “nominal axial compressive resistances” to “bearing values”.

Section 702.3.5 Hammer Energy.; Delete (b) in the table for Structural Steel and substitute the following:

(b) 225 ft-lb/ton times the design bearing value in tons,
divided by the pile batter factor, B, if applicable.

Delete Section 702.4.10 in its entirety and substitute the following:

702.4.10 Dynamic Bearing Formula. The following formulas shall be used as a guide to determine the safe bearing value of piles when other methods of determination are not specified in the contract documents:

Single acting Hammers.	$P = \frac{2WH}{(S+0.1)} \times \frac{2W^a}{(W+w)}$
------------------------	---

Double acting hammers and diesel powered hammers with enclosed rams and bounce pressure gauges	$P = \frac{2E}{(S+0.1)} \times \frac{2W^a}{(W+w)}$
--	--

All other diesel-powered hammers unless tested as specified in Sec. 702.3.1.	$P = \frac{2(0.75E)}{(S+0.1)} \times \frac{2W^a}{(W+w)}$
--	--

^aThe value of $\frac{2W}{(W+w)}$ shall be considered one if 2W exceeds W+w.

P = safe allowable bearing value in pounds.

W = weight of striking part of hammer in pounds.

w = weight of pile and mandrel in pounds.

H = height of fall in feet.

E = manufacturer's rated energy in foot-pounds per blow at manufacturer's rated speed, or in case of a diesel hammer equipped with a bounce pressure gauge the actual energy shown by the gauge chart.

S = average penetration in inches per blow for 10 to 20 consecutive blows, measured along the pile batter, if applicable.

Delete Section 702.4.10.2 in its entirety and substitute the following:

702.4.10.2 For piles driven to a batter, the safe allowable bearing value, P, in the equations provided in Sec 702.4.10 shall be divided by the pile batter factor, B, in order to calculate the value of S, the average penetration per blow.

$$B = \frac{0.1 (10-m)}{\text{factor} (1+m^2)}$$

m = the tangent of the angle of batter to a vertical line

Delete Section 702.4.11 in its entirety and substitute the following:

702.4.11 Minimum and Maximum Limits of Pile Driving. Piles shall be driven to at least the minimum tip elevation indicated on the plans. If no minimum tip elevation is shown on the plans, piles shall have a tip elevation at least 10 feet below the bottom of the supported footing, unless specifically authorized otherwise by the engineer. Piles other than structural steel piles shall be driven to attain a bearing value no less than that shown on the plans, determined in accordance with Sec 702.4.10. Structural steel piles shall in general be driven to practical refusal, which will be defined as a pile bearing value of 1.9 times the design bearing value. Prior to driving structural steel piles, the contractor shall review the boring logs to determine conditions of practical refusal. When

indication of practical refusal occurs; driving shall cease immediately to avoid damage to the pile and to reduce the risk of injury. Shells for cast-in-place concrete piles shall not be driven to a bearing value in excess of 10 tons over the design bearing value.

Delete Section 702.6.6 in its entirety and substitute the following:

702.6.6 Splices. Splices may be required to extend a structural steel or steel shell pile to reach the minimum design bearing. Any additional splices authorized to achieve the minimum design bearing will be paid for as an additional 8 feet of pile in place at the contract unit price. Payment for pile splices will only be made for piles reaching lengths beyond 40 feet.

DIVISION 800

ROADSIDE DEVELOPMENT

SECTION 801 – LIME AND FERTILIZER

As specified in Section 801.2.2, effective calcium shall be applied at the rate of 600 pounds per acre.

As specified in Section 801.2.3, the following commercial fertilizer shall be applied at the rate specified.

Nitrogen	90 lbs. per acre
Phosphoric Acid	180 lbs. per acre
Potash	45 lbs. per acre

As specified in Section 801.6, payment will be included with Seeding.

SECTION 802 - MULCHING

Vegetative mulch shall be used for this project and shall be applied as specified in Section 802.

As specified in Section 802.5, payment will be included with Seeding.

SECTION 805 - SEEDING

As seed requirements are specified in Section 805.2 the following seed mixture shall be applied at the rate specified.

MIXTURE

Kentucky Bluegrass	30%	
Tall Fescue	60%	
White Clover	10%	

	100%	80 lbs. per acre

DIVISION 1000

MATERIAL DETAILS

SECTION 1036 – REINFORCING STEEL FOR CONCRETE

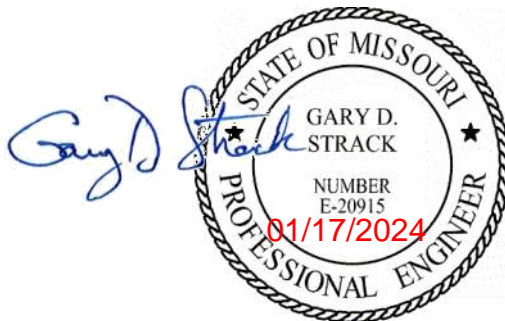
Add the following as Section 1036.2.4

If certain testing procedures are specified for acceptance of materials in the “Standard Specifications”, materials will be accepted for use in this project upon receipt from the supplier of a certification that the product or material meets the requirements of the “Standard Specifications”.

JOB SPECIAL PROVISIONS – TABLE OF CONTENTS

(Job Special Provisions shall prevail over Specification and/or General Provisions whenever in conflict therewith)

- A. Work Zone Traffic Management Plan
- B. Project Contact for Contractor/Bidder Questions
- C. Emergency Provisions and Incident Management
- D. Utilities
- E. Tree Clearing Restriction
- F. Order of Work
- G. ADA Compliance
- H. Liquidated Damages Specified for Winter Months
- I. Disadvantaged Business Enterprise (DBE) Program Requirements
- J. Final Payment Documents
- K. Differing Site Conditions, Suspensions of Work and Significant Changes In The Character Of Work
- L. Temporary Erosion Control Measures
- M. Asbestos Containing Material
- N. Acceptance Of Precast Concrete Members and Panels
- O. Removal of Improvements
- P. Mobilization
- Q. Contractor Furnished Surveying and Staking
- R. Removal of Bridge
- S. Procedures For Environmental Clearance of Borrow Sites and Other Disturbed Areas Outside Right Of Way
- T. LPA Buy America Requirements



A. WORK ZONE TRAFFIC MANAGEMENT PLAN

1.0 Description. Work zone traffic management shall be in accordance with applicable portions of Division 100 and Division 600 of the Standard Specifications, and specifically as follows.

2.0 Traffic Management Schedule.

2.1 Traffic management schedules shall be submitted to the engineer 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.

2.2 The contractor shall notify the engineer prior to lane closures or shifting traffic onto detours.

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

2.4 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.

2.5 Traffic Congestion. The contractor shall, upon approval of the engineer, take proactive measures to reduce traffic congestion in the work zone.

2.5.1 Traffic Delay. The contractor shall be responsible for maintaining the existing traffic flow through the job site during construction. If disruption of the traffic flow occurs and traffic is backed up in queues of 15 minute delays or longer, then the contractor shall review the construction operations which contributed directly to disruption of the traffic flow and make adjustments to the operations to prevent the queues from occurring again.

2.5.2 Traffic Safety.

2.5.2.1 Where traffic queues routinely extend to within 1000 feet (300 m) of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet (150 m) of the ROAD WORK AHEAD, or similar, sign on an undivided highway, the contractor shall extend the advance warning area, as approved by the engineer.

2.5.2.2 When a traffic queue extends to within 1000 feet (300 m) of the ROAD WORK AHEAD, or similar, sign on a divided highway or to within 500 feet (150 m) of the ROAD WORK AHEAD, or similar, sign on an undivided highway due to non-recurring congestion, the contractor shall deploy a means of providing advance warning of the traffic congestion, as approved by the engineer. The warning location shall be no less than 1000 feet (300 m) and no more than 0.5 mile (0.8 km) in advance of the end of the traffic queue on divided highways and no less than 500 feet (150 m) and no more than 0.5 mile (0.8 km) in advance of the end of the traffic queue on undivided highways.

3.0 Work Hour Restrictions.

3.1 There are three major summer holiday periods: Memorial Day, Independence Day, and Labor Day. All lanes shall be scheduled to be open to traffic during these holiday periods, from 12:00 noon on the last working day preceding the holiday until 9:00 a.m. on the first working day subsequent to the holiday.

B. 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 *Jimmy Clynes, P.M.*
Address *1701 Walnut Street, Suite 300, Kansas City, MO 64108*
Phone Number *816-777-0400*
Email Address (Optional) *jclynes@weareown.com*

C. EMERGENCY PROVISIONS AND INCIDENT MANAGEMENT

1.0 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 engineer's office shall also be notified when the contractor requests emergency assistance.

Deputy Director of Public Works, Jackson County- Earl Newill, 816-881-4530
Project Manager, OWN Engineering – Jimmy Clynes, 816-777-0400

2.0 In addition to the 911 emergency telephone number for ambulance, fire or police services, the following agencies may also be notified for accident or emergency situation within the project limits.

Missouri Highway Patrol (816)-622-0800		
City of Kansas City	City of Fort Osage	City of Oak Grove
Fire: 816-513-1313	Fire: 816-650-5811	Fire: 816-690-6990
Police: 816-234-5550	Police: 816-650-3939	Police: 816-690-3773

2.1 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.

2.2 The contractor shall notify 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 enforcement and emergency agencies, a report shall be furnished to the engineer on the status of incident management.

3.0 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.

D. UTILITIES

1.0 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

Known Required Adjustment

CENTURY LINK – TELEPHONE

No

1215 S Broadway
Oak Grove, MO 64075
(816) 320-4795

PUBLIC WATER SUPPLY DISTRICT 16–WATER

100 N Buckner Tarsney Rd,
Sibley, MO 64088
(816) 650-5537

No**BUCKNER SEWER TREATMENT PLANT–SEWER**

2500 N Odonnell Rd,
Buckner, MO 64016
(816) 650-3034

No**EVERGY–ELECTRIC**

921 Parkhurst Dr,
Sedalia, MO 65301
erik.harding@evergy.com

Contact to discuss solutions prior to construction.

1.1 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.

1.2 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, its subcontractors and suppliers in any claim or action arising out of or in relation to the work under the contract.

1.3 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.

2.0 It shall be noted by the contractor that MoDOT is a member of Missouri One Call (800 Dig Rite). Some work on this project may be in the vicinity of MoDOT utility facilities, which includes but is not limited to traffic signal cables, highway lighting circuits, ITS cables, cathodic protection cables, etc. Prior to beginning work, the contractor shall request locates from Missouri One Call. The contractor shall also complete the Notice of Intent to Perform Work form located at the Missouri Department of Transportation website:

<http://www.modot.mo.gov/asp/intentToWork.shtml>

The contractor shall submit the form over the web (preferred method) or by fax to the numbers on the printed form. The notice must be submitted a minimum of 2 and a maximum of 10 working days prior to excavation just as Missouri One Call requires.

E. TREE CLEARING RESTRICTION

1.0 Description. To avoid possible impacts to roosting bats, no potential roost tree clearing is allowed between April 1st, 2024, and November 1st, 2024, inclusive. Tree removals are to be felled prior to March 31st. County has already felled trees; the stumps remain to be grubbed and felled trees removed.

2.0 Basis of Payment. No direct pay shall be provided for any labor, equipment, time, or materials necessary to complete this work. The contractor shall have no claim, or basis for any claim or suit whatsoever, resulting from compliance with this provision.

F. ORDER OF WORK

1. *Close road to traffic*
2. *Remove bridge structure*
3. *Conduct grading construction*
4. *Install new structure*
5. *Install roadway improvements*
6. *Install guardrail*

Contractor may alter order of work provided the revised order of work is submitted to the Engineer for approval two weeks prior to work element commencing.

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

1.0 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.

2.0 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

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.

2.2 It is encouraged that the contractor monitor 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.

3.0 Coordination of Construction.

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.

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.

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.

4.0 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.

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

5.0 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.

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.

H. LIQUIDATED DAMAGES FOR WINTER MONTHS

1.0 Description. Revise Sec 108.8.1.2 (a) and (b) and substitute the following for the project:

- (a) Liquidated damages will be assessed from December 15 to March 15
- (b) Liquidated damages will be assessed for Saturdays, Sundays and Holidays.

I. DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM REQUIREMENTS

1.0 Description: Insert the following additional program provisions in the Disadvantaged Business Enterprise (DBE) Program Requirements of the General Provisions and Supplemental Specifications to 2011 Missouri Standard Specifications for Highway Construction.

2.0 Factors Used to Determine if a DBE Regular Dealer of Liquid Asphalt is Performing a CUF. The DBE must be responsible with respect to materials and supplies used on a contract perform all of the following, pursuant to 49 CFR § 26.55(c)(1) and 7 CSR 10-8.131:

- (a) Negotiating price.
- (b) Determining quality and quantity.
- (c) Ordering the material.
- (d) Paying for the material itself.

(e) 30% of the work must be performed by the DBE's permanent employees (which does not include owner-operators or leased employees) or those hired by the DBE firm for the project from an independent source other than the prime contractor, such as a union hall. For at least 30% of the work the DBE's owned (not leased) equipment shall be used and the DBE must provide documentation that this owned equipment was used on the project as required by this provision.

(f) For up to 70% of the remaining work the equipment used by the DBE must be by long term lease (at least one year) with another DBE or non-DBE but not the prime contractor. The DBE must have absolute priority over other businesses or entities to use the long term leased equipment and must display the name and identification number of the DBE.

(g) The Contractor shall require DBE subcontractors to provide documentation in one of the following formats: bills of lading, hauling tickets, shippers manifest, and/or paid invoices. Regardless of the document format, the document(s) shall include the following information: name of the carrier, full name of the driver, driver ID number(s), truck and tanker ID or VIN number, and reflect the contract number, job number, county and route

The contract number, job number, county and route can be reported through a consignee number or lift number, as long as the DBE Subcontractor has provided the consignee number, or lift number, along with project specific information which shall include contract number, job number, county, and route.

The documentation must be submitted and generated by the DBE Subcontractor and be printed on letterhead or other similar documentation outlining the contact information for the DBE Subcontractor. In addition, the documentation shall indicate the quantity and amount invoiced to the prime contractor (Such as an invoice). **“MoDOT's DBE Contractor/Subcontractor Project Trucker and Equipment List”** (Form 1) will be provided by MoDOT and shall be completed and submitted to MoDOT by the DBE Subcontractor or Liquid Asphalt Supplier before Asphalt Operations begin. The DBE Subcontractor shall report all trucks and tankers they currently own and all full-time drivers that they employ, including all of the drivers' numbers for each terminal the drivers pick up from. In addition, the DBE Subcontractor shall include a list of “long term” leased equipment, along with drivers and drivers' numbers to the DBE Subcontractor Project Trucker and Equipment List. The DBE Subcontractor shall attach copies of all current long term lease agreements to the DBE Subcontractor Project Trucker and Equipment List.

(h) DBE Trucking/Hauling regulations do not apply to regular dealers of liquid asphalt.

3.0 When a DBE Regular Dealer of Liquid Asphalt is Not Eligible for DBE Credit.

(a) “If its role is limited to that of an extra participant in a transaction, contract or project through which funds are passed in order to obtain the appearance of DBE participation.” 49 CFR § 26.55(c)(2)

(b) If the type of transaction does not allow the DBE subcontractor to perform one of the four required functions, such as a prime contractor deciding the price of a commodity to be supplied by the DBE, that transaction is not eligible for DBE credit.

(c) Work that is performed with trucks that are not owned nor under a lease of at least one year by the DBE will not be eligible for DBE credit.

(d) A lack of documentation verifying that at least one DBE owned (not leased) tractor and tanker/ trailer was used to haul liquid asphalt on the project will result in no DBE credit given on that project.

4.0 This form will be completed by the inspector from the project office during the time of the project. MoDOT will use the *MoDOT DBE Job-Site Review CUF Determination Form* to verify CUF was performed on the project, a copy of which is available on the MoDOT Contractor Resource website.

J. FINAL PAYMENT DOCUMENTS

1.0 Description. If the final payment documents are not completed and ready for final payment in accordance with Sec 109.8, within 60 calendar days of final acceptance of the project, the Contractor shall pay to the Contracting Authority the amount of \$950.00 as liquidated damages and as a penalty for each Calendar Day until the final payment documents are completed and ready for final payment. The number of liquidated damages shall be deducted from any payments due or to become due to the Contractor. Final payment documentation shall include but not be limited to the following:

- (a) 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.
- (b) 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.
- (c) 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.

K. DIFFERING SITE CONDITIONS, SUSPENSIONS OF WORK AND SIGNIFICANT CHANGES IN THE CHARACTER OF WORK

1. Differing site conditions.

- (a) During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before they are disturbed and before the affected work is performed.
- (b) Upon written notification, the engineer will investigate the conditions, and if he/she determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly. The engineer will notify the contractor of his/her determination whether or not an adjustment of the contract is warranted.
- (c) No contract adjustment which results in a benefit to the contractor will be allowed unless the contractor has provided the required written notice.
- (d) No contract adjustment will be allowed under this clause for any effects caused on unchanged work.

2. Suspensions of work ordered by the engineer.

- (a) If the performance of all or any portion of the work is suspended or delayed by the engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the contractor shall submit to the engineer in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.
- (b) Upon receipt, the engineer will evaluate the contractor's request. If the engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The engineer will notify the contractor of his/her determination whether or not an adjustment of the contract is warranted.

- (c) No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed.
 - (d) No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this contract.
3. Significant changes in the character of work.
- (a) The engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.
 - (b) If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the contractor in such amount as the engineer may determine to be fair and equitable.
 - (c) If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.
 - (d) The term "significant change" shall be construed to apply only to the following circumstances:
 - (1) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction or
 - (2) When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent, or decreased below 75 percent of the original contract quantity. Any allowance for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity, or in case of a decrease below 75 percent, to the actual amount of work performed.

L. TEMPORARY EROSION CONTROL MEASURES

1.0 Description. Temporary erosion control measures shall be provided for this project as shown on the plans in general conformance with Section 806 of the Standard Specifications to meet, as a minimum, the following requirements for the duration of this project.

2.0 Construction Requirements. The Contractor shall provide temporary erosion control measures which, in general, comply with the devices and generic temporary erosion control plan provided by MoDOT standard plans 806.10H. A copy of each of these 7 plan sheets can be found on the MoDOT website.

http://www.modot.mo.gov/business/standards_and_specs/currentsec800.htm.

2.1 The Contractor shall maintain the erosion control devices for the duration of the project to the extent that should weather conditions and/or construction operations become such that erosion of disturbed soil and/or transportation of sediment by water would otherwise be inevitable, adequate protection against erosion will be provided. Ditch checks shall be required in all side ditch flow lines.

2.2 Silt fence shall be required at the edge of embankment fill where the limits of downslope fill meets the existing ground with no ditch flow line between the two.

M. ASBESTOS CONTAINING MATERIAL

1.0 Description. The existing bridge was inspected by Mustardseed Cultural & Environmental for Anderson Engineering, Inc. for asbestos containing materials (ACM's).

ACM report is attached.

The Contractor must send a demolition notice to DNR at least 10 days prior to construction. **Contractor cannot begin demolition until DNR has issued a permit.** These forms can be found in the Permits section of these specs.

N. 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 prestressing strands in reinforcing steel, as required.
- * 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.

O. REMOVAL OF IMPROVEMENTS

Payment shall be at the lump sum bid price. The payment shall include full compensation for all labor, material and equipment needed to complete the work items and shall include, but not be limited to, all removal and off-site disposal of existing concrete and reinforcing steel; brush and trees; and other associated removal to prepare the site for the improvements, as indicated on the Drawings.

P. MOBILIZATION

Payment shall be at the lump sum bid price. The payment shall include full compensation for all labor, material and equipment needed to complete the work items and shall include, but not be limited to, all equipment transportation (to and from site), assembly, disassembly, calibration, testing; and other associated costs.

Q. CONTRACTOR FURNISHED SURVEYING AND STAKING

Payment shall be at the lump sum bid price. The payment shall include full compensation for all labor, material and equipment needed to complete the work items and shall include, but not be limited to, all surveying, construction staking, benchmark preservation, and other associated costs.

R. REMOVAL OF BRIDGE

Payment shall be at the lump sum bid price. The payment shall include full compensation for all labor, material and equipment needed to complete the bridge removal work items and shall include, but not be limited to, all bridge removal and off-site disposal of existing concrete and reinforcing steel; and other associated removal to prepare the site for the improvements, as indicated on the Drawings.

Q. WATERLINE RELOCATION

Payment shall be at the lump sum bid price. The payment shall include full compensation for all labor, material and equipment needed to complete the work items and shall include, but not be limited to, all construction involving removal, replacement, and waterline preparation for re-connection.

S. PROCEDURES FOR ENVIRONMENTAL CLEARANCE OF BORROW SITES AND OTHER DISTURBED AREAS OUTSIDE RIGHT OF WAY

SUCH AS:

HAUL ROADS

BURN PITS

STAGING AREAS

SPOIL SITES

The Local Public Agency (LPA) is responsible for ensuring that all necessary clearances for disturbed areas such as those mentioned above are obtained prior to using these areas for projects. LPA's and their contractors are encouraged to consider using material from previously disturbed locations (substantial disturbance) or disturbed areas that have been cleared previously, precluding the need to address most, if not all, of the issues described below. The LPA and their contractors should include the

federal project number on all correspondence. The primary environmental concerns related to obtaining clearance of disturbed areas such as borrow sites are described next.

Once the LPA or their contractor has obtained all required documentation, it should be provided to the LPA and the MoDOT district contact.

The Endangered Species Act

The U.S. Fish and Wildlife Service (FWS) administers the Federal Endangered Species Act, which protects rare species and their habitats. Violations of this act can result in extensive project delays and severe fines. To determine whether an activity will impact any rare species or their habitats, the LPA or their contractor must contact the FWS and request an official species list. This must be accomplished by accessing the FWS Information, Planning, and Conservation (IPaC) website (<http://ecos.fws.gov/ipac/>) and submitting the project details. The LPA or their contractor must also request an official species list and a consultation code. If the project may impact any listed species, contact the FWS and provide them with the consultation code for further information:

U.S. Fish and Wildlife Service
Columbia Field Office
101 Park DeVill Dr.
Columbia MO 65203-0057
Telephone (573) 234-2131 or FAX (573) 234-2182

To determine if the activity will impact state listed species, submit the project for a Natural Heritage Review at the Missouri Department of Conservation's (MDC's) website: <https://naturalheritagereview.mdc.mo.gov/>. MDC will provide the LPA or their contractor with a report that lists known resources in or near the site and provides Best Management Practices (BMP's) and additional instructions. **The report is NOT a clearance letter.** If there are no known records of rare species or sensitive habitats at the proposed site, and it is unlikely that any will be impacted by the activity, the MoDOT district contact will give the contractor clearance to proceed. However, if rare species are known or likely to occur at the site or known critical habitat exists, further coordination with MDC and the FWS will be necessary. Written concurrence from the U.S. Fish and Wildlife Service for a "not likely to adversely affect" determination may be required before the project can proceed.

Floodplain/Regulatory Floodway

Executive Order 11988, Floodplain Management, and subsequent federal floodplain management guidelines mandate an evaluation of floodplain impacts. The Federal Emergency Management Agency (FEMA) and Federal Highway Administration (FHWA) guidelines 23 CFR 650 have identified the base (1%) flood as the flood having a one percent probability of being equaled or exceeded in any given year. The base floodplain is the area of one percent flood hazard within a county or community. The regulatory floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the one percent flood discharge can be conveyed without increasing the base flood elevation more than a specified amount. FEMA has mandated that projects can cause no rise in the regulatory floodway, and a one-foot cumulative rise for all projects in the base (1%) floodplain.

When available, flood hazard boundary maps (National Flood Insurance Program) and flood insurance studies for the project area are used to determine the limits of the base (1%) floodplain and the extent of encroachment. Questions concerning the need for a floodplain development permit or whether, for projects proposed within regulatory floodways, a "no-rise" certificate must be obtained before a Floodplain Development Permit can be issued should be addressed to the local floodplain administrator. Use the menu or map feature under Local Floodplain Administrator on the State Emergency Management Agency website at <http://www.sema.dps.mo.gov/programs/floodplain/> to find contact information for your local floodplain administrator.

For projects that involve the state of Missouri, the State Emergency Management Agency (SEMA) issues floodplain development permits. In the case of projects proposed within regulatory floodways, a "no-rise" certificate, if applicable, should be obtained prior to issuance of a permit. Questions regarding floodplain and regulatory floodway for these projects should be addressed to:

SEMA
P.O. Box 116
Jefferson City MO 65102
Telephone (573) 526-9141

Documentation of consultation with the local floodplain administrator or SEMA regarding the presence of base (1%) floodplain/regulatory floodway should be included in the final collection of information to be submitted to the MoDOT district contact.

Federal Emergency Management Agency (FEMA) Buyout Lands

The Flood Disaster Protection Act of 1973, as amended by the Disaster Relief and Emergency Assistance Act of 1988 (The Stafford Act), identified the use of disaster relief funds under Section 404 for the Hazard Mitigation Grand Program (HMGP),

including the acquisition and relocation of flood-damaged property. The Volkmer Bill further expanded the use of HMGP funds to “buy out” flood damaged property that was affected by the Great Flood of 1993.

There are numerous restrictions on these FEMA buyout properties. No structures or improvements may be erected on these properties unless they are open on all sides. The site shall be used only for open space purposes and shall stay in public ownership. These conditions and restrictions (among others), along with the right to enforce same, are deemed to be covenants running with the land in perpetuity and are binding on subsequent successors, grantees, or assigns. Any decision involving these properties should take into consideration that 2–3 years is needed to obtain an exemption from FEMA to use these parcels. This exemption would likely be a permanent easement rather than a transfer of property. If any proposed site is located on a FEMA buyout property, an alternative site should be chosen.

Farmland Protection

The Farmland Protection Policy Act (FPPA) seeks to minimize federal programs' contributions to the unnecessary and irreversible conversion of farmland caused by nonagricultural uses. FPPA compliance can be achieved through coordination with United States Department of Agriculture's (USDA's) Natural Resources Conservation Service (NRCS) and completion of [Form AD-1006 Farmland Conversion Impact Rating](#). Form AD-1006 can also be obtained by calling the NRCS State office in Columbia at (573) 876-9411. An aerial map of the site or sites will be needed, with the area to be disturbed identified on the map. This aerial map can be obtained from the local NRCS office. In some areas of the state, this office may be located in an adjoining county.

The LPA or their contractor will need to complete Parts I and III on the Form AD-1006. The form should then be sent to the NRCS State Office for completion of Parts II, IV and V. The address for the NRCS State Office is:

Natural Resource Conservation Service
State Soil Scientist
601 Business Loop 70 West
Parkade Center, Suite 250
Columbia, MO 65203-2546
Telephone (573) 876-0907

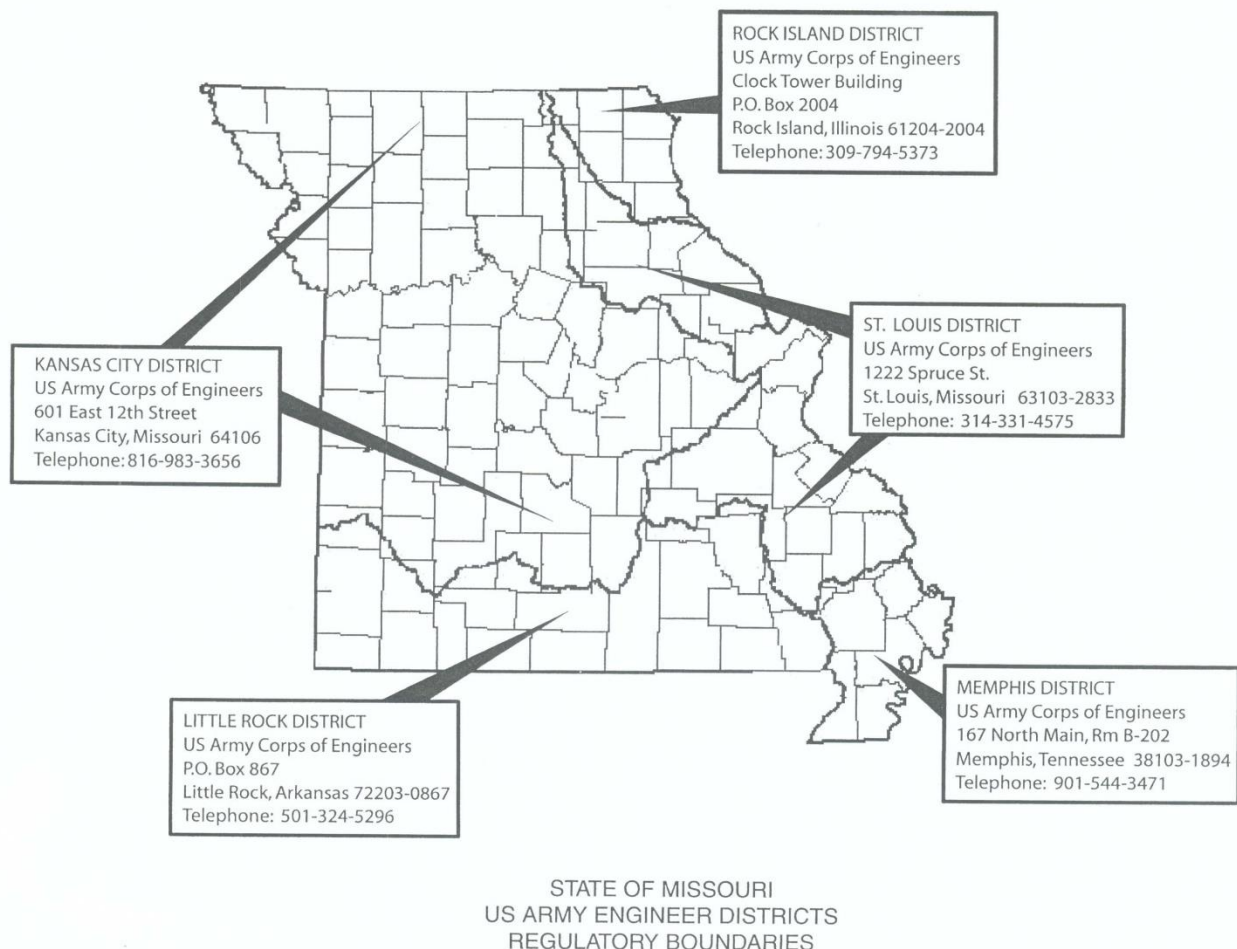
After the NRCS office returns the form, the contractor fills out Parts VI and VII and provides a copy of the completed form to the MoDOT district contact for documentation of compliance with the Farmland Protection Policy Act.

Wetlands

Federal executive order has decreed a national policy of "no net loss of wetlands." Under this policy, impacts to wetlands must be avoided if at all practical. Where wetlands are impacted, these impacts must be mitigated by construction or enhancement of a like quantity **and** quality of new wetlands. For these reasons, avoiding impacts to wetlands is a primary goal.

To determine whether wetlands occur on a site, contact the NRCS. The NRCS has identified and mapped wetlands as a requirement under the Food Security Act. These maps are available from county NRCS offices, usually located in the county seat. If wetlands are identified on Food Security Act wetland maps, a site visit may be needed to confirm the location of wetlands. If there are no wetland impacts, no other action need be taken.

If there are any questions about the extent of wetlands in the event that wetlands cannot be avoided, contact the U.S. Army Corps of Engineers (COE). If wetlands cannot be avoided, the appropriate COE district would process a COE Section 404 permit. There are five COE districts in Missouri. The locations, addresses, and phone numbers of their offices are on the following map.



Water Quality/Land Disturbance

If the LPA does not have a valid general National Pollutant Discharge Elimination System (NPDES) permit for storm water runoff and the site to be disturbed is 1 acre or more in size, a specific NPDES permit from DNR is required. If the site to be disturbed is entirely within MoDOT right of way, the LPA may use MoDOT's general permit for land disturbance but must follow all conditions in the permit and stormwater pollution prevention plan. A pollution prevention plan may be required with the NPDES application. Permits may be obtained from the Department of Natural Resources at (573) 751-1300. These permits are necessary even if the runoff is directed into a basin.

Hazardous Waste Sites

More than likely, areas to be disturbed will be located in rural areas that have been used for agriculture or similar purposes. Hazardous wastes are most typically associated with commercial or previously industrial properties.

If the proposed area is basically farmland or pasture and has not been used for any commercial activity or dumping, hazardous wastes are unlikely. The LPA or its contractor should simply document the existing and historic land use of the parcel and tell how this assessment was obtained.

In non-rural, suburban or commercial areas a non-intrusive investigation may be used to "diagnose" the environmental conditions of a selected site. The following is a non-inclusive list of suggested items for a cursory nonintrusive investigation.

- Examine any noticeable contamination in the form of surface staining, oil sheen, odors, stressed vegetation, spills, leaks, illegal dumping, etc.

- Conduct interviews of local citizens and current owners to identify past land use practices and hazardous waste management practices.

Consult with local and state [Missouri Department of Natural Resources, Hazardous Waste Program, (573) 751-3176] environmental regulatory agencies to identify whether any past problems (complaints, citations, etc.) have occurred at the site, any permits/licenses have been filed for the site, or enforcement actions have occurred.

If the above analyses produce negative results, the contractor should provide documentation to the MoDOT district contact regarding who was contacted and the results of the contact. However, if potential problems are identified through the search for information described above, it would be wise to locate another site.

The potential to encounter wastes from sites that are unknown should always be a consideration. Any unknown sites that are found must be handled in accordance with federal and state laws and regulations.

Historic Preservation

All jobs receiving federal funds and/or permits must comply with [Section 106 of the National Historic Preservation Act](#). A letter from the State Historic Preservation office (SHPO), Department of Natural Resources indicating Section 106 compliance for all activities within the footprint of the project (existing & new right-of-way and temporary & permanent easements) should already have been received by the project's sponsor. Section 106 compliance for earth-disturbing activities outside of this foot print is the responsibility of the LPA or their contractor. To initiate SHPO's review and clearance for activities outside of the previously cleared foot-print, the contractor should complete a [Section 106 Project Information Form](#) and submit it to SHPO along with a copy of a United States Geological Survey (USGS) topographic map indicating the location of the project. In addition, photographs of **any** structures that will be impacted must be provided. The Section 106 Project Information Form also can be requested from the SHPO at:

Missouri Department of Natural Resources
State Historic Preservation Office
Attn: Section 106 Review
P.O. Box 176
Jefferson City, MO, 65102-0176
Telephone (573) 751-7858

Based on the information supplied, SHPO may clear the project at that time or request that the LPA or their contractor acquire the services of an archaeological consultant to conduct a historic preservation survey of the proposed area. A list of currently acceptable and available archaeological consultants who can complete a survey if required can be accessed at the SHPO's website at <http://www.dnr.mo.gov/shpo/profqualifications.htm>. Any questions can be directed to MoDOT's Historic Preservation Section at (573) 751-0473.

Public Land

If borrow sites are proposed on any publicly owned land, contact MoDOT's Environmental Section at (573) 526-6678 before proceeding. Section 4(f) of the Department of Transportation (DOT) Act of 1966 (now codified as 49 U.S.C. 303 and 23 U.S.C. 138) protects certain public lands. Section 4(f) requires that all U.S. DOT-funded transportation projects must avoid impacts to public parkland and wildlife refuges (and cultural resources deemed eligible for the National Register of Historic Places), unless it is successfully demonstrated that no feasible and prudent alternative exists that avoid "use" or impacts to the park or refuge. It is strongly recommended that public lands not be considered as potential borrow sites.

T. LPA BUY AMERICA REQUIREMENTS JSP-18-08

106.9 Buy America Requirement. On all federal-aid projects, the contractor's attention is directed to Title 23 CFR 635.410 Buy America Requirements. Where steel or iron products are to be permanently incorporated into the contract work, steel and iron material shall be manufactured in the USA except for "minor usage" as described herein. Furthermore, any coating process of the steel or iron shall be performed in the USA. The use of pig iron and processed, pelletized and reduced iron ore manufactured outside of the USA will be permitted in the domestic manufacturing process for steel or iron material.

106.9.1 Any sources other than the USA as defined will be considered foreign. The required domestic manufacturing process shall include formation of ingots and any subsequent process. Coatings shall include any surface finish that protects or adds value to the product.

106.9.2 "Minor usage" of foreign steel, iron or coating processes will be permitted, provided the cost of such products does not exceed 1/10 of one percent of the total contract cost or \$2,500.00, whichever is greater. If foreign steel, iron or coating processes are used, invoices to document the cost of the foreign portion, as delivered to the project, shall be provided and the engineer's written approval obtained prior to placing the material in any work.

106.9.3 Buy America requirements include a step certification for all fabrication processes of all steel or iron materials that are accepted per Sec 1000.

106.9.3.1 Items designated as Category 1 will consist of steel girders, piling, and reinforcing steel installed on site. Category 1 items require supporting documentation prior to incorporation into the project showing all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements. This includes the Mill Test Report from the original producing steel mill and certifications documenting the manufacturing process for all subsequent fabrication, including coatings. The certification shall include language that certifies the following. That all steel and iron materials permanently incorporated in this project was procured and processed domestically and all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410.

106.9.3.2 Items designated as Category 2 will include all other steel or iron products not in Category 1 and permanently incorporated in the project. Category 2 items shall consist of, but not be limited to items such as fencing, guardrail, signing, lighting and signal supports. The prime contractor is required to submit a material of origin form certification prior to incorporation into the project from the fabricator for each item that the product is domestic. The Certificate of Materials Origin form (link to certificate form) from the fabricator must show all steps of manufacturing, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements and be signed by a fabricator representative. The Engineer reserves the right to request additional information and documentation to verify that all Buy America requirements have been satisfied. These documents shall be submitted upon request by the Engineer and retained for a period of 3 years after the last reimbursement of the material.

106.9.3.3 Any minor miscellaneous steel or iron items that are not included in the materials specifications shall be certified by the prime contractor as being procured domestically. Examples of these items would be bolts for sign posts, anchorage inserts, etc. The certification shall read "I certify that all steel and iron materials permanently incorporated in this project during all manufacturing processes, including coating, as being completed in the United States and in accordance with CFR Title 23 Section 635.410 Buy America Requirements procured and processed domestically in accordance with CFR Title 23 Section 635.410 Buy America Requirements. Any foreign steel used was submitted and accepted under minor usage". The certification shall be signed by an authorized representative of the prime contractor.

106.9.4 When permitted in the contract, alternate bids may be submitted for foreign steel and iron products. The award of the contract when alternate bids are permitted will be based on the lowest total bid of the contract based on furnishing domestic steel or iron products or 125 percent of the lowest total bid based on furnishing foreign steel or iron products. If foreign steel or iron products are awarded

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

FEDERAL AID PROVISIONS

December 1980

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidders attention is called to the "Equal Opportunity Clause" and the Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth therein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:
3. Construction contractors which are participating in an approved Hometown Plan (see 41 CFR 60-4.5) are required to comply with the goals of the Hometown Plan with regard to construction work they perform in the area covered by the Hometown Plan. With regard to all their covered construction work, such contractors are required to comply with the following goals:

Goals for Female participation for each trade

AREA COVERED

Goals for women apply nationwide

GOALS AND TIMETABLES

Goals

Timetable	(Percent)
From April 1, 1978 until March 31, 1979	3.1
From April 1, 1979 until March 31, 1980	5.1
From April 1, 1980 until March 31, 1981	6.9

Goals for Minority Participation for Each Trade

<u>County</u>	<u>Goal (Percent)</u>	<u>County</u>	<u>Goal (Percent)</u>
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Adair	4	Linn	4
Andrew	3.2	Livingston	10
Atchison	10	McDonald	2.3
Audrain	4	Macon	4
Barry	2.3	Madison	11.4
Barton	2.3	Maries	11.4
Bates	10	Marion	3.1
Benton	10	Mercer	10
Bollinger	11.4	Miller	4
Boone	6.3	Mississippi	11.4
Buchanan	3.2	Moniteau	4
Butler	11.4	Monroe	4
Caldwell	10	Montgomery	11.4
Callaway	4	Morgan	4
Camden	4	New Madrid	26.5
Cape Girardeau	11.4	Newton	2.3
Carroll	10	Nodaway	10
Carter	11.4	Oregon	2.3
Cass	12.7	Osage	4
Cedar	2.3	Ozark	2.3
Chariton	4	Pemiscot	26.5
Christian	2	Perry	11.4
Clark	3.4	Pettis	10
Clay	12.7	Phelps	11.4

Clinton	10	Pike	3.1
Cole	4	Platte	12.7
Cooper	4	Polk	2.3
Crawford	11.4	Pulaski	2.3
Dade	2.3	Putnam	4
Dallas	2.3	Ralls	3.1
Daviess	10	Randolph	4
DeKalb	10	Ray	12.7
Dent	11.4	Reynolds	11.4
Douglas	2.3	Ripley	11.4
Dunklin	26.5	St. Charles	14.7
Franklin	14.7	St. Clair	2.3
Gasconade	11.4	St. Francois	11.4
Gentry	10	Ste. Genevieve	11.4
Greene	2	St. Louis City	14.7
Grundy	10	St. Louis County	14.7
Harrison	10	Saline	10
Henry	10	Schuyler	4
Hickory	2.3	Scotland	4
Holt	10	Scott	11.4
Howard	4	Shannon	2.3
Howell	2.3	Shelby	4
Iron	11.4	Stoddard	11.4
Jackson	12.7	Stone	2.3
Jasper	2.3	Sullivan	4
Jefferson	14.7	Taney	2.3
Johnson	10	Texas	2.3
Knox	4	Vernon	2.3
Laclede	2.3	Warren	11.4
Lafayette	10	Washington	11.4
Lawrence	2.3	Wayne	11.4
Lewis	3.1	Webster	2.3
Lincoln	11.4	Worth	10
		Wright	2.3

These goals are applicable to all of the contractor's construction work (whether or not is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on Its Implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its effort to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority, or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

4. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.
5. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" of the county, route and limits described in the bid for the work.

July 1986

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION
CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation which this contract resulted.
 - b. "Director" mean Director, Office of Federal Contract Compliance Programs, United States Department of labor, or any person to who the Director delegates authority;
 - c. "Employer Identification Number" means the Federal Social Security number used on the Employer's quarterly Federal Tax Return, U.S. Treasury Department Form 941;
 - d. "Minority" includes;
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and pacific islander (all persons having origins in any of the original peoples of the Far East, southeast Asia, the Indian Subcontinent, or the Pacific Islands; and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintain identifiable affiliations through membership and participation or community identifications.
2. Whenever the Contractor, or any Subcontractor at any tier, subcontractors a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contract is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through the association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with the Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligation under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractors' failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with who the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the nonworking training hours or apprentices and trainees to be counted in meeting the goal, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be used its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and all facilities at which the Contractor's employees are assigned to work. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred not employed by the contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has as collective bargaining agreement has not referred to the contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant of the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources complied under 7b above.
 - f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement by publicizing it in the company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees at least one a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as superintendents, General foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, person attending, subject matter discussed, and the disposition of the subject matter.
 - h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media and providing written notification to and discussing the contractor's EEO policy with other Contractors and Subcontractors with who the Contractor does or anticipates doing business.
 - i. Direct is a recruitment effort, both oral and written, to minority female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance or applicants for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and test to be used in the selection process.
 - j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer vacations employment to minority and female youth both on the site and in other areas or contractor's workforce.

- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc. such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligation under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations or offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling anyone or more of its obligations under 7a through 7p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the executive order if a specific minority group of women is underutilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contract pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Direct shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status, (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and

retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be constructed as a limitation upon the application of other laws which establish different standard of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Action of 1977 and the Community Development Block Grant Program.

OPERATING POLICY STATEMENT

The contractor shall accept as his operating policy the following statement, or one of equal coverage, which is designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex, or national origin, and to promote the full realization of equal employment opportunity through a positive continuing program.

“It is the policy of this company to assure that applicants are employed, and that employees are treated during employment without regard to their race, religion, sex, color, or national origin. Such action shall include: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training.”

SUPPLEMENTAL REPORTING REQUIREMENTS

- A. The Contractor will keep such records as are necessary to determine compliance with the contractor’s equal employment opportunity obligations. The records kept by the contractor will be designed to indicate the number of minority and non-minority group members and women employed in each work classification on the project.
- B. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the State Highway Agency and the Federal Highway Administration.
- C. The contractor and each covered subcontractor will submit to the State Highway Agency, for the month of July, for the duration of the project, a report (Form PR-1391) “Federal-Aid Highway Construction Contractors Annual EEO Report”, indicating the number of minority, women and non-minority group employees currently engaged in each work classification required by the contract work.

NONDISCRIMINATION IN EMPLOYMENT

July 1990

The following provisions are added by the State to the Required Contract Provisions of Federal-Aid Contracts.

The contractor is advised that the exemptions referred to in the Required Contract Provisions, Federal-Aid contracts under Section II, Nondiscrimination, Paragraph 3g, with respect to contracts and subcontracts, are substantial and are to be found in Chapter 60, Office of Federal Contract Compliance, Equal Employment Opportunity, Department of Labor (33 Federal Register 7804-7812, May 28, 1968, effective July 1, 1968, Chapter 60, Title 41, Code of Federal Regulations), by which contracts and subcontracts of \$10,000 or less and certain contracts and subcontracts for indefinite quantities are exempt.

The two pertinent exemption clauses are as follows:

60-1.5 Exemptions

- (a) General – (1) Transactions of \$10,000 or under. Contracts and Subcontractors not exceeding \$10,000, other than Government bills of lading, and other than contract and subcontracts with depositories of Federal funds in any amount and with financial institutions which are issuing and paying agents for U.S. savings bonds and savings notes, are exempt from the requirements of the equal opportunity clause. In determining the applicability of this exemption to any federally assisted construction contract, or subcontract thereunder, the amount of such contract or subcontract rather than the amount of the Federal financial assistance shall govern. No agency, contractor, or subcontractor shall procure supplies or services in a manner so as to avoid applicability of the equal opportunity clause: Provided, that where a contractor has contracts or subcontracts with the Government in any 12-month period which have an aggregate total value (or can reasonably be expected to have an aggregate total value) exceeding \$10,000, the \$10,000 or under exemption does not apply, and the contracts are subject to the order and the regulation issued pursuant thereto regardless of whether any single contracts exceeds \$10,000.

Missouri

Division of Labor Standards

WAGE AND HOUR SECTION



MICHAEL L. PARSON, Governor

Annual Wage Order No. 31

Section 048

JACKSON COUNTY

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by

Todd Smith, Director
Division of Labor Standards

Filed With Secretary of State: March 8, 2024

Last Date Objections May Be Filed: April 8, 2024

Prepared by Missouri Department of Labor and Industrial Relations

JACKSON COUNTY PUBLIC WORKS
STOENNER ROAD BRIDGE REPLACEMENT

FEDERAL PROJECT NO. BRO-B048 (59)
JCPW PROJECT NO. 3247 (ITB 24-068)

Building Construction Rates for
JACKSON County

Section 048

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Asbestos Worker	\$69.50
Boilermaker	\$39.44*
Bricklayer-Stone Mason	\$62.06
Carpenter	\$64.94
Lather	
Linoleum Layer	
Millwright	
Pile Driver	
Cement Mason	\$58.02
Plasterer	
Communication Technician	\$62.38
Electrician (Inside Wireman)	\$70.32
Electrician Outside Lineman	\$61.40
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Elevator Constructor	\$93.11
Glazier	\$59.07
Ironworker	\$70.66
Laborer	\$52.42
General Laborer	
First Semi-Skilled	
Second Semi-Skilled	
Mason	\$50.24
Marble Mason	
Marble Finisher	
Terrazzo Worker	
Terrazzo Finisher	
Tile Setter	
Tile Finisher	
Operating Engineer	\$66.05
Group I	
Group II	
Group III	
Group III-A	
Group IV	
Group V	
Painter	\$54.25
Plumber	\$78.88
Pipe Fitter	
Roofer	\$60.69
Sheet Metal Worker	\$76.38
Sprinkler Fitter	\$69.92
Truck Driver	\$54.27
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

**The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in RSMo Section 290.210.

Heavy Construction Rates for
JACKSON County

Section 048

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Carpenter	\$65.11
Millwright	
Pile Driver	
Electrician (Outside Lineman)	\$90.71
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Laborer	\$51.85
General Laborer	
Skilled Laborer	
Operating Engineer	\$60.48
Group I	
Group II	
Group III	
Group IV	
Truck Driver	\$53.04
Truck Control Service Driver	
Group I	
Group II	
Group III	
Group IV	

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate Sheet.

*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. Public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

**The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title.

OVERTIME and HOLIDAYS

OVERTIME

For all work performed on a Sunday or a holiday, not less than twice (2x) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work.

For all overtime work performed, not less than one and one-half (1½) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work or contractual obligation. For purposes of this subdivision, **"overtime work"** shall include work that exceeds ten hours in one day and work in excess of forty hours in one calendar week; and

A thirty-minute lunch period on each calendar day shall be allowed for each worker on a public works project, provided that such time shall not be considered as time worked.

HOLIDAYS

January first;
The last Monday in May;
July fourth;
The first Monday in September;
November eleventh;
The fourth Thursday in November; and
December twenty-fifth;

If any holiday falls on a Sunday, the following Monday shall be considered a holiday.

Superseded General Decision Number: M020230001

State: Missouri

Construction Types: Heavy and Highway

Counties: Missouri Statewide.

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none">. Executive Order 14026 generally applies to the contract.. The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none">. Executive Order 13658 generally applies to the contract.. The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	01/19/2024
2	02/23/2024

CARP0002-002 05/01/2023

ST. LOUIS COUNTY AND CITY

Rates

Fringes

Carpenters.....\$ 40.34 21.25

CARP0005-006 05/01/2023

CASS (Richards-Gebauer AFB ONLY), CLAY, JACKSON, PLATTE AND RAY
COUNTIES

Rates

Fringes

Carpenters:

CARPENTERS & LATHERS.....\$ 43.28 21.25
MILLWRIGHTS & PILEDRIVERS...\$ 43.28 21.25

CARP0011-001 05/01/2023

Rates

Fringes

Carpenter and Piledriver

ADAIR, AUDRAIN (West of
Hwy 19), BOONE, CALLAWAY,
CHARITON, COLE, COOPER,
HOWARD, KNOX, LINN, MACON,
MILLER, MONITEAU, MONROE,
OSAGE, PUTNAM, RANDOLPH,
SCHUYLER, SHELBY AND
SULLIVAN COUNTIES.....\$ 34.31 21.25
ATCHISON, ANDREW, BATES,
CALDWELL, CARROLL, DAVIESS,
DEKALB, GENTRY, GRUNDY,
HARRISON, HENRY, HOLT,
LIVINGSTON, MERCER,
NODAWAY, ST. CLAIR, SALINE
AND WORTH COUNTIES.....\$ 32.64 21.25
AUDRAIN (East of Hwy.19),
RALLS, MARION, LEWIS,
CLARK AND SCOTLAND COUNTIES.\$ 34.31 21.25
BARRY, BARTON, CAMDEN,
CEDAR, CHRISTIAN, DADE,
DALLAS, DOUGLAS, GREENE,
HICKORY, JASPER, LACLEDE,
LAWRENCE, MCDONALD,
NEWTON, OZARK, POLK,
STONE, TANEY, VERNON,
WEBSTER AND WRIGHT COUNTIES.\$ 32.20 21.25
BENTON, MORGAN AND PETTIS...\$ 32.69 21.25
BOLLINGER, BUTLER, CAPE
GIRARDEAU, DUNKLIN,
MISSISSIPPI, NEW MADRID,
PEMISCOT, PERRY, STE.
GENEVIEVE, SCOTT, STODDARD
AND WAYNE COUNTIES.....\$ 34.15 21.25
BUCHANAN, CLINTON, JOHNSON
AND LAFAYETTE COUNTIES.....\$ 33.43 21.25
CARTER, HOWELL, OREGON AND
RIPLEY COUNTIES.....\$ 32.99 21.25
CRAWFORD, DENT, GASCONADE,
IRON, MADISON, MARIES,
MONTGOMERY, PHELPS,
PULASKI, REYNOLDS, SHANNON
AND TEXAS COUNTIES.....\$ 34.14 21.25
FRANKLIN COUNTY.....\$ 37.93 21.25
JEFFERSON AND ST. CHARLES
COUNTIES.....\$ 40.34 21.25
LINCOLN COUNTY.....\$ 36.21 21.25
PIKE, ST. FRANCOIS AND
WASHINGTON COUNTIES.....\$ 35.01 21.25
WARREN COUNTY.....\$ 36.69 21.25

ELEC0001-002 07/17/2022

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, FRANKLIN,
IRON, JEFFERSON, LINCOLN, MADISON, MISSISSIPPI, NEW MADRID,
PEMISCOT, PERRY,REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS,
ST. LOUIS (City and County), STE. GENEVIEVE, SCOTT, STODDARD,
WARREN, WASHINGTON AND WAYNE COUNTIES

	Rates	Fringes
Electricians.....	\$ 43.56	29.10

ELEC0002-001 09/04/2022

ADAIR, AUDRAIN, BOONE, CALLAWAY, CAMDEN, CARTER, CHARITON,
CLARK, COLE, COOPER, CRAWFORD, DENT, FRANKLIN, GASCONADE,
HOWARD, HOWELL, IRON, JEFFERSON, KNOX, LEWIS, LINCON, LINN,
MACON, MARIES, MARION, MILLER, MONITEAU, MONROE, MONTGOMERY,
MORGAN, OREGON, OSAGE, PERRY, PHELPS, PIKE, PULASKI, PUTNAM,
RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST. CHARLES, ST. FRANCOIS,
ST. LOUIS (City and County), STE. GENEVIEVE, SCHUYLER,
SCOTLAND, SHANNON, SHELBY, SULLIVAN, TEXAS, WARREN AND
WASHINGTON COUNTIES

	Rates	Fringes
Line Construction:		
Equipment Operator.....	\$ 44.16	23.14
Groundman & Truck Driver....	\$ 33.74	19.34
Lineman & Cable Splicer.....	\$ 51.45	25.81

* ELEC0053-004 01/01/2024

	Rates	Fringes
Line Construction: (ANDREW, ATCHINSON, BARRY, BARTON, BUCHANAN, CALDWELL, CEDAR, CHRISTIAN, CLINTON, DADE, DALLAS, DAVIES,, DEKALB, DOUGLAS, GENTRY, GREENE, GRUNDY, HARRISON, HICKORY, HOLT, JASPER, LACLEDE, LAWRENCE, LIVINGSTON, MCDONALD, MERCER, NEWTON, NODAWAY, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER, WORTH AND WRIGHT COUNTIES)		
Groundman Powderman.....	\$ 35.71	1.5%+9.04
Groundman.....	\$ 32.32	1.5%+18.25
Lineman Operator.....	\$ 48.73	1.5%+23.33
Lineman.....	\$ 54.02	1.5%+25.08

Line Construction; (BATES, BENTON, CARROLL, CASS, CLAY, HENRY, JACKSON, JOHNSON, LAFAYETTE, PETTIS, PLATTE, RAY AND SALINE COUNTIES)		
Groundman Powderman.....	\$ 33.58	18.34
Groundman.....	\$ 31.33	17.60
Lineman Operator.....	\$ 45.60	22.48
Lineman.....	\$ 50.31	24.11

ELEC0095-001 09/01/2023

BARRY, BARTON, CEDAR, DADE, JASPER, LAWRENCE, MCDONALD, NEWTON,
ST CLAIR, AND VERNON COUNTIES

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 25.40	12.19
Electricians.....	\$ 30.20	16.56

ELEC0124-007 08/28/2023		
BATES, BENTON, CARROLL, CASS, CLAY, COOPER, HENRY, JACKSON, JOHNSON, LAFAYETTE, MORGAN, PETTIS, PLATTE, RAY AND SALINE COUNTIES:		

	Rates	Fringes
Electricians.....	\$ 47.37	25.89

ELEC0257-003 03/01/2023		
AUDRAIN (Except Cuivre Township), BOONE, CALLAWAY, CAMDEN, CHARITON, COLE, CRAWFORD, DENT, GASCONADE, HOWARD, MARIES, MILLER, MONITEAU, OSAGE, PHELPS AND RANDOLPH COUNTIES		

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 30.42	16.085
Electricians.....	\$ 37.00	20.88

ELEC0350-002 12/01/2023		
ADAIR, AUDRAIN (East of Highway 19), CLARK, KNOX, LEWIS, LINN, MACON, MARION, MONROE, MONTGOMERY, PIKE, PUTNAM, RALLS, SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES		

	Rates	Fringes
Electricians.....	\$ 36.60	20.96

ELEC0453-001 09/01/2023		

	Rates	Fringes
Electricians:		
CHRISITAN, DALLAS, DOUGLAS, GREENE, HICKORY, HOWELL, LACLEDE, OREGON, OZARK, POLK, SHANNON, WEBSTER and WRIGHT COUNTIES..	\$ 36.08	17.91
PULASKI and TEXAS COUNTIES..	\$ 36.08	17.91
STONE and TANEY COUNTIES....	\$ 26.62	17.11

ELEC0545-003 06/01/2023		
ANDREW, BUCHANAN, CLINTON, DEKALB, ATCHISON, HOLT, MERCER, GENTRY, HARRISON, DAVIESS, GRUNDY, WORTH, LIVINGSTON, NODAWAY, AND CALDWELL COUNTIES		

	Rates	Fringes
Electricians:.....	\$ 36.75	20.40

* ELEC0702-004 01/01/2024		

BOLLINGER, BUTLER, CAPE GIRARDEAU, DUNKLIN, MADISON,

	Rates	Fringes
Line Construction:		
Groundman - Class A.....	\$ 36.89	30%+8.60
Groundman-Equipment		
Operator Class II (all		
other equipment).....	\$ 44.92	30%+8.60
Heavy-Equipment Operator		
Class I (all crawler type		
equipment D-4 and larger)...	\$ 50.37	30%+8.60
Lineman.....	\$ 63.30	30%+8.60

ENGI0101-001 05/01/2020		

ANDREW, ATCHISON, BATES, BENTON, BUCHANAN, CALDWELL, CARROLL,
CHARITON, CLINTON, COOPER, DAVIESS, DEKALB, GENTRY, GRUNDY,
HARRISON, HENRY, HOLT, HOWARD, JOHNSON, LAFAYETTE, LINN,
LIVINGSTON, MERCER, NODAWAY, PETTIS, SALINE, SULLIVAN AND WORTH
COUNITES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 34.73	18.20
GROUP 2.....	\$ 34.33	18.20
GROUP 3.....	\$ 32.33	18.20

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt roller operator, finish; asphalt paver and
spreader; asphalt plant operator; auto grader or trimmer or
sub-grader; backhoe; blade operator (all types); boilers -
2; booster pump on dredge; bulldozer operator; boring
machine (truck or crane mounted); clamshell operator;
concrete mixer paver; concrete plant operator; concrete
pump operator; crane operator; derrick or derrick trucks;
ditching machine; dragline operator; dredge engineman;
dredge operator; drill cat with compressor mounted
(self-contained) or similar type self- propelled rotary
drill (not air tract); drilling or boring machine
(rotary-self-propelled); finishing machine operator;
greaser; high loader-fork lift-skid loader (all types);
hoisting engineer (2 active drums); locomotive operator
(standard guage); mechanics and welders (field and plants);
mucking machine operator; pile drive operator; pitman crane
or boom truck (all types); push cat; quad track; scraper
operators (all types); shovel operator; sideboom cats; side
discharge spreader; skimmer scoop operators; slip form
paver operator (CMI, Rex, Gomeco or equal); la tourneau
rooter (all tiller types); tow boat operator; truck crane;
wood and log chippers (all types).

GROUP 2: A-frame truck operator; articulated dump truck;
back filler operator; boilers (1); chip spreader; churn
drill operator; compressor; concrete mixer operator, skip
loader; concrete saws (self-propelled); conveyor operator;
crusher operator; distributor operator; elevating grader
operator; farm tractor (all attachments); fireman rig;
float operator; form grade operator; hoisting engine (one
drum); maintenance operator; multiple compactor; pavement
breaker, self-propelled hydra-hammer (or similar type);
paymill operator; power shield; pumps; roller operator
(with or without blades); screening and washing plant;
self-propelled street broom or sweeper; siphons and jets;
straw blower; stump cutting machine; siphons and jets; tank

car heater operator (combination boiler and booster);
welding machine; vibrating machine operator (not hand
held); welding machine.

GROUP 3: (a) Oiler;
(b) Oiler driver
(c) Mechanic.

HOURLY PREMIUMS:

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.25) ABOVE
GROUP 1 RATE: Dragline operator - 3 yds. & over; shovel
3 yds. & over; clamshell 3 yds. & over; Crane, rigs or
piledrivers, 100' of boom or over (incl. jib.), hoist -
each additional active drum over 2 drums

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.50) ABOVE
GROUP 1 RATE: Tandem scoop operator; crane, rigs or
piledrivers 150' to 200' of boom (incl. jib.)

THE FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$.75) ABOVE
GROUP 1 RATE: Crane rigs, or piledrivers 200 ft. of boom
or over (including jib.)

ENGI0101-005 04/01/2022

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 38.42	20.44
GROUP 2.....	\$ 37.38	20.44
GROUP 3.....	\$ 32.91	20.44
GROUP 4.....	\$ 36.26	20.44

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt roller operator, finish; asphalt paver and
spreader; asphalt plant operator; auto grader or trimmer or
sub-grader; backhoe; blade operator (all types); boilers-2;
booster pump on dredge; boring machine (truck or crane
mounted); bulldozer operator; clamshell operator; concrete
cleaning decontamination machine operator; concrete mixer
paver; concrete plant operator; concrete pump operator;
crane operator; derrick or derrick trucks; ditching
machine; dragline operator; dredge engineman; dredge
operator; drillcat with compressor mounted (self-contained)
or similar type self propelled rotary drill (not air
tract); drilling or boring machine (rotary -
self-propelled); finishing machine operator; greaser; heavy
equipment robotics operator/mechanic; horizontal
directional drill operator; horizontal directional drill
locator; loader-forklift - skid loader (all types);
hoisting engineer (2 active drums); locomotive operator
(standard guage); master environmental maintenance
mechanic; mechanics and welders (field and plants);
mucking machine operator; piledrive operator; pitman crane
or boom truck (all types); push cat; quad-track; scraper
operators (all types); shovel operator; side discharge
spreader; sideboom cats; skimmer scoop operator; slip-form
paver (CMI, REX, Gomaco or equal); la tourneau rooter (all
tiller types); tow boat operator; truck crane; ultra high
perssure waterjet cutting tool system operator/mechanic;
vacuum blasting machine operator/mechanic; wood and log
chippers (all types)

GROUP 2: ""A"" Frame truck operator; back filler operator;
boilers (1); chip spreader; churn drill operator; concrete
mixer operator, skip loader; concrete saws

(self-propelled); conveyor operator; crusher operator; distributor operator; elevating grader operator; farm tractor (all attachments); fireman rig; float operator; form grader operator; hoisting engine (1 drum); maintenance operator; multiple compactor; pavement breaker, self-propelled hydra- hammer (or similar type); power shield; paymill operator; pumps; siphons and jets; stump cutting machine; tank car heater operator (combination boiler and booster); compressor; roller operator (with or without blades); screening and washing plant; self-propelled street broom or sweeper; straw blower; tank car heater operator (combination boiler and booster); vibrating machine operator (not hand held)

GROUP 3: Oilers

GROUP 4: Oiler Driver (All Types)

FOOTNOTE:
HOURLY PREMIUMS FOLLOWING CLASSIFICATIONS SHALL RECEIVE (\$1.00) ABOVE GROUP 1 RATE:
Clamshells - 3 yd. capacity or over; Cranes or rigs, 80 ft. of boom or over (including jib); Draglines, 3 yd. capacity or over;
Piledrivers 80 ft. of boom or over (including jib);
Shovels & backhoes, 3 yd. capacity or over.

ENGI0101-022 05/01/2019

BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HICKORY, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK, POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER AND WRIGHT COUNTIES and CITY OF SPRINGFIELD

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 31.72	14.88
GROUP 2.....	\$ 31.37	14.88
GROUP 3.....	\$ 31.17	14.88
GROUP 4.....	\$ 29.12	14.88

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt finishing machine & trench widening spreader; asphalt plant console operator; autograder; automatic slipform paver; backhoe; blade operator - all types; boat operator - tow; boilers-2; central mix concrete plant operator; clamshell operator; concrete mixer paver; crane operator; derrick or derrick trucks; ditching machine; dozer operator; dragline operator; dredge booster pump; dredge engineman; dredge operator; drill cat with compressor mounted on cat; drilling or boring machine rotary self-propelled; highloader; hoisting engine - 2 active drums; launch hammer wheel; locomotive operator; - standard guage; mechanic and welders; mucking machine; off-road trucks; piledriver operator; pitman crane operator; push cat operator; quad trac; scoop operator - all types; shovel operator; sideboom cats; skimmer scoop operators; trenching machine operator; truck crane.

GROUP 2: A-frame; asphalt hot-mix silo; asphalt plant fireman (drum or boiler); asphalt plant man; asphalt plant man; asphalt plant mixer operator; asphalt roller operator; backfiller operator; barber-greene loader; boat operator (bridges and dams); chip spreader; concrete mixer operator - skip loader; concrete plant operator; concrete pump operator; crusher operator; dredge oiler; elevating grader

operator; fork lift; greaser-fleet; hoisting engine - 1;
locomotive operator - narrow gauge; multiple compactor;
pavement breaker; powerbroom - self-propelled; power
shield; rooter; side discharge concrete spreader; slip form
finishing machine; stumpcutter machine; throttle man;
tractor operator (over 50 h.p.); winch truck.

GROUP 3: Boilers - 1; chip spreader (front man); churn drill
operator; clef plane operator; concrete saw operator (self-
propelled); curb finishing machine; distributor operator;
finishing machine operator; flex plane operator; float
operator; form grader operator; pugmill operator; roller
operator, other than high type asphalt; screening & washing
plant operator; siphons & jets; sub-grading machine
operator; spreader box operator, self-propelled (not
asphalt); tank car heater operator (combination boiler &
booster); tractor operator (50 h.p. or less); Ulmac, Ulric
or similar spreader; vibrating machine operator, not hand;

GROUP 4: Grade checker; Oiler; Oiler-Driver

HOURLY PREMIUMS:

The following classifications shall receive \$.25 above GROUP
1 rate:
Clamshells - 3 yds. or over; Cranes - Rigs or Piledrivers,
100 ft. of boom or over (including jib);
Draglines - 3 yds. or over; Hoists - each additional active
drum over 2 drums; Shovels - 3 yds. or over;

The following classifications shall receive \$.50 above GROUP
1 rate:
Tandem scoop operator; Cranes - Rigs or Piledrivers, 150 ft.
to 200 ft. of boom (including jib); Tandem scoop.

The following classifications shall receive \$.75 above GROUP
1 rate:
Cranes - Rigs or Piledrivers, 200 ft. of boom or over
(including jib.).

ENGI0513-004 05/03/2023

FRANKLIN, JEFFERSON, LINCOLN, ST CHARLES, AND WARREN COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 41.01	29.63
GROUP 2.....	\$ 41.01	29.63
GROUP 3.....	\$ 39.71	29.63
GROUP 4.....	\$ 39.26	29.63

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, Cable; Backhoe, Hydraulic (2 cu yds bucket
and under regardless of attachment, one oiler for 2 or 3,
two oilers for 4 through 6); Backhoe, Hydraulic over 2 cu
yds; Cableway; Crane, Crawler or Truck; Crane, Hydraulic -
Truck or Cruiser mounted, 16 tons and over; Crane,
Locomotive; crane with boom including jib over 100 ft from
pin to pin; Crane using rock socket tool; Derrick, Steam;
Derrick Car and Derrick Boat; Dragline, 7 cu yds and over;
Dredge; Gradall, Crawler or tire mounted; Locomotive, Gas,
Steam & other powers; Pile Driver, Land or Floating; Scoop,
Skimmer; Shovel, Power (Electric, Gas, Steam or other
powers); Shovel, Power (7 cu yds and over); Switch Boat;
Whirley; Air Tugger with air compressor; Anchor Placing
Barge; Asphalt Spreaker; Athey Force Feeder Loader,
self-propelled; Backfilling Machine; Boat Operator - Push

Boat or Tow Boat (job site); Boiler, High Pressure Breaking in Period; Boom Truck, Placing or Erecting; Boring Machine, Footing Foundation; Bullfloat; Cherry Picker; Combination Concrete Hoist and Mixer (such as Mixermobile); Compressor, Two 125 CFM and under; Compressor, Two through Four over 125 CFM; Compressor when operator runs throttle; Concrete Breaker (Truck or Tractor mounted); Concrete Pump (such as Pumpcrete machine); Concrete Saw (self-propelled); Concrete Spreader; Conveyor, Large (not selfpropelled) hoisting or moving brick and concrete into, or into and on floor level, one or both; Crane, Climbing (such as Linden); Crane, Hydraulic - Rough Terrain, self-propelled; Crane, Hydraulic - Truck or Cruiser mounted - under 16 tons; Drilling machine - Self-powered, used for earth or rock drilling or boring (wagon drills and any hand drills obtaining power from other sources including concrete breakers, jackhammers and Barco equipment no engineer required); Elevating Grader; Engine Man, Dredge; Excavator or Powerbelt Machine; Finishing Machine, self-propelled oscillating screed; Forklift; Generators, Two through Six 30 KW or over; Grader, Road with power blade; Greaser; Highlift; Hoist, Concrete and Brick (Brick cages or concrete skips operating or on tower, Towermobile, or similar equipment); Hoist, Three or more drums in use; Hoist, Stack; Hydro-Hammer; Lad-A-Vator, hoisting brick or concrete; Loading Machine such as Barber-Greene; Mechanic on job site

GROUP 2: Air Tugger with plant air; Boiler (for power or heating shell of building or temporary enclosures in connection with construction work); Boiler, Temporary; Compressor, One over 125 CFM; Compressor, truck mounted; Conveyor, Large (not self-propelled); Conveyor, Large (not self-propelled) moving brick and concrete (distributing) on floor level; Curb Finishing Machine; Ditch Paving Machine; Elevator (outside); Endless Chain Hoist; Fireman (as required); Form Grader; Hoist, One Drum regardless of size (except brick or concrete); Lad-A-Vator, other hoisting; Manlift; Mixer, Asphalt, over 8 cu ft capacity; Mixer, one bag capacity or less; Mixer, without side loader, two bag capacity or more; Mixer, with side loader, regardless of size, not Paver; Mud Jack (where mud jack is used in conjunction with an air compressor, operator shall be paid \$.55 per hour in addition to his basic hourly rate for covering both operations); Pug Mill operator; Pump, Sump - self powered, automatic controlled over 2"; Scissor Lift (used for hoisting); Skid Steer Loader; Sweeper, Street; Tractor, small wheel type 50 HP and under with grader blade and similar equipment; Welding Machine, One over 400 amp; Winch, operating from truck

GROUP 3: Boat operator - outboard motor, job site; Conveyors (such as Con-Vay-It) regardless of how used; Elevator (inside); Heater operator, 2 through 6; Sweeper, Floor

GROUP 4: Crane type

HOURLY PREMIUMS:

Backhoe, Hydraulic 2 cu yds or less without oiler - \$2.00;
Crane, climbing (such as Linden) - \$.50;
Crane, Pile Driving and Extracting - \$.50
Crane with boom (including job) over
100 ft from pin to pin - add \$.01 per foot
to maximum of \$4.00);
Crane, using rock socket tool - \$.50;
Derrick, diesel, gas or electric hoisting material
and erecting steel (150 ft or more above ground) - \$.50;
Dragline, 7 cu yds and over - \$.50;
Hoist, Three or more drums in use - \$.50;
Scoop, Tandem - \$.50;

Shovel, Power - 7 cu yds and over - \$.50;
Tractor, Tandem Crawler - \$.50;
Tunnel, man assigned to work in tunnel or
tunnel shaft - \$.50;
Wrecking, when machines are working on
second floor or higher - \$.50

ENGI0513-006 05/01/2022

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY, CAPE
GIRARDEAU, CARTER, CLARK, COLE, CRAWFORD, DENT, DUNKLIN,
GASCONADE, HOWELL, IRON, KNOX, LEWIS, MACON, MADISON, MARIES,
MARION, MILLER, MISSISSIPPI, MONITEAU, MONROE, MONTGOMERY,
MORGAN, NEW MADRID, OREGON, OSAGE, PEMISCOT, PERRY, PHELPS,
PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH, REYNOLDS, RIPLEY, ST.
FRANCOIS, STE. GENEVIEVE, SCHUYLER, SCOTLAND, SCOTT, SHANNON,
SHELBY, STODDARD, TEXAS, WASHINGTON, AND WAYNE COUNTIES

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 33.24	28.75
GROUP 2.....	\$ 32.89	28.75
GROUP 3.....	\$ 32.69	28.75
GROUP 4.....	\$ 29.04	28.75

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Asphalt finishing machine & trench widening
spreader, asphalt plant console operator; autograder;
automatic slipform paver; back hoe; blade operator - all
types; boat operator tow; boiler two; central mix concrete
plant operator; clam shell operator; concrete mixer paver;
crane operator; derrick or derrick trucks; ditching
machine; dozer operator; dragline operator; dredge booster
pump; dredge engineman; dredge operator; drill cat with
compressor mounted on cat; drilling or boring machine
rotary self-propelled; highloader; hoisting engine 2 active
drums; launchhammer wheel; locomotive operator standrad
guage; mechanics and welders; mucking machine; piledriver
operator; pitman crane operator; push cat operator;
guad-trac; scoop operator; sideboom cats; skimmer scoop
operator; trenching machine operator; truck crane, shovel
operator.

GROUP 2: A-Frame; asphalt hot-mix silo; asphalt roller
operator asphalt plant fireman (drum or boiler); asphalt
plant man; asphalt plant mixer operator; backfiller
operator; barber-greene loader; boat operator (bridge &
dams); chip spreader; concrete mixer operator skip loader;
concrete plant operator; concrete pump operator; dredge
oiler; elevating graded operator; fork lift; grease fleet;
hoisting engine one; locomotive operator narrow guage;
multiple compactor; pavement breaker; powerbroom
self-propelled; power shield; rooter; slip-form finishing
machine; stumpcutter machine; side discharge concrete
spreader; throttleman; tractor operator (over 50 hp); winch
truck; asphalt roller operator; crusher operator.

GROUP 3: Spreader box operator, self-propelled not asphalt;
tractor operator (50 h.p. or less); boilers one; chip
spreader (front man); churn drill operator; compressor over
105 CFM 2-3 pumps 4"" & over; 2-3 light plant 7.5 KWA or any
combination thereof; clef plane operator; compressor
maintenance operator 2 or 3; concrete saw operator
(self-propelled); curb finishing mancine; distributor
operator; finishing machine operator; flex plane operator;
float operator; form grader operator; pugmill operator;

filler operator other than high type asphalt; screening & washing plant operator; siphons & jets; subgrading machine operator; tank car heater (combination boiler & booster); ulmac, ulmic or similar spreader; vibrating machine operator; hydrobroom.

GROUP 4: Oiler; grout machine; oiler driver; compressor over 105 CFM one; conveyor operator one; maintenance operator; pump 4" & over one.

FOOTNOTE: HOURLY PREMIUMS

- Backhoe hydraulic, 2 cu. yds. or under Without oiler - \$2.00
- Certified Crane Operator - \$1.50;
- Certified Hazardous Material Operator \$1.50;
- Crane, climbing (such as Linden) - \$0.50;
- Crane, pile driving and extracting - \$0.50;
- Crane, with boom (including jib) over 100' from pin to pin add \$0.01 per foot to maximum of \$4.00;
- Crane, using rock socket tool - \$0.50;
- Derrick, diesel, gas or electric, hoisting material and erecting steel (150' or more above the ground) - \$0.50;
- Dragline, 7 cu. yds, and over - \$0.50;
- Hoist, three or more drums in use - \$0.50; Scoop, Tandem - \$0.50;
- Shovel, power - 7 cu. yds. or more - \$0.50;
- Tractor, tandem crawler - \$0.50;
- Tunnel, man assigned to work in tunnel or tunnel shaft - \$0.50;
- Wrecking, when machine is working on second floor or higher - \$0.50;

ENGI0513-007 05/03/2023

ST. LOUIS CITY AND COUNTY

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 41.01	29.63
GROUP 2.....	\$ 41.01	29.63
GROUP 3.....	\$ 39.71	29.63
GROUP 4.....	\$ 39.26	29.63

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Backhoe, cable or hydraulic; cableway; crane crawler or truck; crane, hydraulic-truck or cruiser mounted 16 tons & over; crane locomotive; derrick, steam; derrick car & derrick boat; dragline; dredge; gradall, crawler or tire mounted; locomotive, gas, steam & other powers; pile driver, land or floating; scoop, skimmer; shovel, power (steam, gas, electric or other powers); switch boat; whirley.

GROUP 2: Air tugger w/air compressor; anchor-placing barge; asphalt spreader; atney force feeder loader (self-propelled); backfilling machine; backhoe-loader; boat operator-push boat or tow boat (job site); boiler, high pressure breaking in period; boom truck, placing or erecting; boring machine, footing foundation; bull- float; cherry picker; combination concrete hoist & mixer (such as mixer mobile); compressor (when operator runs throttle); concrete breaker (truck or tractor mounted); concrete pump, such as pump-crete machine; concrete saw (self-propelled), concrete spreader; conveyor, large (not self-propelled), hoisting or moving brick and concrete into, or into and on floor level, one or both; crane, hydraulic-rough terrain, self-propelled; crane hydraulic-truck or cruiser

mounted-under 16 tons; drilling machines, self-powered use for earth or rock drilling or boring (wagon drills and any hand drills obtaining power from other sources including concrete breakers, jackhammers and barco equipment-no engineer required); elevating grader; engineman, dredge; excavator or powerbelt machine; finishing machine, self-propelled oscillating screed; forklift; grader, road with power blade; highlift. greaser; hoist, stack, hydro-hammer; loading machine (such as barber-green); machanic, on job site; mixer, pipe wrapping machines; plant asphalt; plant, concrete producing or ready-mix job site; plant heating-job site; plant mixing-job site; plant power, generating-job site; pumps, two through six self-powered over 2"; pumps, electric submersible, two through six, over 4"; quad-track; roller, asphalt, top or sub-grade; scoop, tractor drawn; spreader box; sub-grader; tie tamper; tractor-crawler, or wheel type with or without power unit, power take-offs and attachments regardless of size; trenching machine; tunnel boring machine; vibrating machine automatic, automatic propelled; welding machines (gasoline or diesel) two through six; well drilling machine

GROUP 3: Conveyor, large (not self-propelled); conveyor, large (not self-propelled) moving brick and concrete distributing) on floor level; mixer two or more mixers of one bag capacity or less; air tugger w/plant air; boiler, for power or heating on construction projects; boiler, temporary; compressor (mounted on truck; curb finishing machine; ditch paving machine; elevator; endless chain hoist; form grader; hoist, one drum regardless of size; lad-a-vator; manlift; mixer, asphalt, over 8 cu. ft. capacity, without side loader, 2 bag capacity or more; mixer, with side loader, regardless of size; pug mill operator; pump, sump-self-powered, automatic controlled over 2" during use in connection with construction work; sweeper, street; welding machine, one over 400 amp.; winch operating from truck; scissor lift (used for hoisting); tractor, small wheel type 50 h.p. & under with grader blade & similar equipment; Oiler on dredge and on truck crane.

GROUP 4: Boat operator-outboard motor (job site); conveyor (such as con-vay-it) regardless of how used; sweeper, floor

HOURLY PREMIUMS:

Backhoe, hydraulic	
2 cu. yds. or under without oiler	\$2.00
Certified Crane Operator	1.50
Certified Hazardous Material Operator	1.50
Crane, climbing (such as Linden)	.50
Crane, pile driving and extracting	.50
Crane, with boom (including jib) over 100' (from pin to pin) add \$.01 per foot to maximum of	4.00
Crane, using rock socket tool	.50
Derrick, diesel, gas or electric, hoisting material and erecting steel (150' or more above ground)	.50
Dragline, 7 cu. yds. and over	.50
Hoist, three (3) or more drums in use	.50
Scoop, Tandem	.50
Shovel, power - 7 cu. yds. or more	.50
Tractor, tandem crawler	.50
Tunnel, man assigned to work in tunnel or tunnel shaft	.50
Wrecking, when machine is working on second floor or higher	.50

Rates

Fringes

Ironworkers:

ANDREW, BARTON, BENTON,
 CAMDEN, CEDAR, CHARITON,
 CHRISTIAN, COOPER, DADE,
 DALLAS, DAVIESS, DE KALB,
 GENTRY, GREENE, GRUNDY,
 HARRISON, HICKORY, HOLT,
 HOWARD, LACLEDE, LINN,
 LIVINGSTON, MERCER,
 MONITEAU, MORGAN, NODAWAY,
 PETTIS, POLK, PUTNAM,
 RANDLOPH, ST. CLAIR,
 SULLIVAN, TANEY, VERNON,
 WEBSTER, WRIGHT and WORTH
 Counties and portions of
 ADAIR, BOONE, MACON,
 MILLER and RANDOLPH

Counties.....\$ 33.50 33.38

ATCHISON, BATES, BUCHANAN,
 CALDWELL, CARROLL, CASS,
 CLAY, CLINTON, HENRY,
 JACKSON, JOHNSON,
 LAFAYETTE, PETTIS, PLATTE,
 SALINE, AND RAY COUNTIES....\$ 36.50 33.38

 IRON0321-002 08/01/2023

DOUGLAS, HOWELL and OZARK COUNTIES

Rates

Fringes

Ironworker.....\$ 27.00 20.96

 IRON0396-004 08/02/2023

ST. LOUIS (City and County), ST. CHARLES, JEFFERSON, IRON,
 FRANKLIN, LINCOLN, WARREN, WASHINGTON, ST. FRANCOIS, STE.
 GENEVIEVE, and REYNOLDS Counties; and portions of MADISON,
 PERRY, BOLLINGER, WAYNE, and CARTER Counties

Rates

Fringes

Ironworker.....\$ 40.37 30.55

 IRON0396-009 08/02/2023

AUDRAIN, CALLAWAY, COLE, CRAWFORD, DENT, GASCONADE, MARIES,
 MONTGOMERY, OSAGE, PHELPS, PIKE, PULASKI, TEXAS and WRIGHT
 Counties; and portions of BOONE, CAMDEN, DOUGLAS, HOWELL,
 LACLEDE, MILLER, MONROE, OREGON, SHANNON and RALLS Counties

Rates

Fringes

Ironworker.....\$ 40.37 30.55

 IRON0577-005 06/01/2023

ADAIR, CLARK, KNOX, LEWIS, MACON, MARION, MONROE, RALLS,
 SCHUYLER, SCOTLAND, AND SHELBY COUNTIES

Rates

Fringes

Ironworker.....\$ 31.55 25.05

 IRON0584-004 06/01/2023

BARRY, JASPER, LAWRENCE, MCDONALD, NEWTON AND STONE Counties

	Rates	Fringes
Ironworkers:.....	\$ 29.00	16.20

IRON0782-003 08/01/2023		

CAPE GIRARDEAU, MISSISSIPPI, NEW MADRID, SCOTT, & STODDARD
Counties; and portions of BOLLINGER, BUTLER, CARTER, DUNKLIN,
MADISON, PEMISCOT, PERRY, RIPLEY, and WAYNE Counties

	Rates	Fringes
Ironworkers:		
Locks, Dams, Bridges and other major work on the Mississippi and Ohio River only.....	\$ 38.77	29.51
All Other Work.....	\$ 33.47	24.12

LAB00042-003 03/01/2023		

ST. LOUIS (City and County)

	Rates	Fringes
LABORER		
Plumber Laborer.....	\$ 36.65	17.12

LAB00042-005 03/01/2023		

ST. LOUIS (City and County)

	Rates	Fringes
LABORER		
Dynamiter, Powderman.....	\$ 36.65	17.12
Laborers, Flaggers.....	\$ 36.65	17.12
Wrecking.....	\$ 36.65	17.12

LAB00110-005 05/01/2023		

Jefferson and Washington Counties

	Rates	Fringes
LABORER (Jefferson County)		
GROUP 1.....	\$ 35.49	15.62
GROUP 2.....	\$ 36.09	15.62
LABORER (Washington County)		
GROUP 1.....	\$ 32.98	15.62
GROUP 2.....	\$ 32.98	15.62

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders;
salamander Tenders; Dump Man; Ticket Takers; loading trucks
under bins, hoppers, and conveyors; track man; cement
handler; dump man on earth fill; georgie buggy man;
material batch hopper man; spreader on asphalt machine;
material mixer man (except on manholes); coffer dams;
riprap pavers rock, block or brick; scaffolds over ten feet
not self-supported from ground up; skip man on concrete
paving; wire mesh setters on concrete paving; all work in
connection with sewer, water, gas, gasoling, oil, drainage
pipe, conduit pipe, tile and duct lines and all other pipe
lines; power tool operator; all work in connection with

hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees; feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft. where compressed air is not used; abutment and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men or brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

LAB00579-005 05/01/2023

	Rates	Fringes
LABORER (ANDREW, ATCHISON, BUCHANAN, CALDWELL, CLINTON, DAVIESS, DEKALB, GENTRY, GRUNDY, HARRISON, HOLT, LIVINGSTON, MERCER, NODAWAY and WORTH COUNTIES.)		
GROUP 1.....	\$ 29.04	16.59
GROUP 2.....	\$ 29.39	16.59
LABORER (BARRY, BARTON, BATES, BENTON, CAMDEN, CARROLL, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE, HENRY. HICKORY, JASPER, JOHNSON, LACLEDE, LAWRENCE, MCDONALD, MORGAN, NEWTON, OZARK, PETTIS, POLK, ST.CLAIR, SALINE, STONE, TANEY, VERNON, WEBSTER and WRIGHT COUNTIES)		
GROUP 1.....	\$ 28.23	15.60
GROUP 2.....	\$ 28.78	15.60
LABORER (LAFAYETTE COUNTY)		
GROUP 1.....	\$ 29.78	15.85
GROUP 2.....	\$ 30.13	15.85

LABORERS CLASSIFICATIONS

GROUP 1: General Laborers - Carpenter tenders; salamander tenders; loading trucks under bins; hoppers & conveyors; track men & all other general laborers; air tool operator; cement handler-bulk or sack; dump man on earth fill;

georgie buggy man; material batch hopper man; material mixer man (except on manholes); coffer dams; riprap pavers - rock, block or brick; signal man; scaffolds over ten feet not self-supported from ground up; skipman on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoline, oil drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator, all work in connection with hydraulic or general dredging operations; puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material or materials (where special protection is required); rubbing concrete; topper of standing trees; batter board man on pipe and ditch work; feeder man on wood pulverizers; board and willow mat weavers and cable tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 feet where compressed air is not used; abutment and pier hole men working six (6) feet or more below ground; men working in coffer dams for bridge piers and footings in the river; ditchliners; pressure groutmen; caulker; chain or concrete saw; cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground; mortarmen on brick or block manholes; toxic and hazardous waste work.

GROUP 2: Skilled Laborers - Head pipe layer on sewer work; laser beam man; Jackson or any other similar tamp; cutting torch man; form setters; liners and stringline men on concrete paving, curb, gutters; hot mastic kettleman; hot tar applicator; sandblasting and gunite nozzlemen; air tool operator in tunnels; screed man on asphalt machine; asphalt raker; barco tamper; churn drills; air track drills and all similar drills; vibrator man; stringline man for electronic grade control; manhole builders-brick or block; dynamite and powder men; grade checker.

LABO0660-004 05/01/2023

Clark, Knox, Lewis, Marion, Pike, Ralls, Scotland, Shelby Counties

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 32.98	15.62
GROUP 2.....	\$ 32.98	15.62

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders; salamander Tenders; Dump Man; Ticket Takers; loading trucks under bins, hoppers, and conveyors; track man; cement handler; dump man on earth fill; georgie buggy man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap pavers rock, block or brick; scaffolds over ten feet not self-supported from ground up; skip man on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees;

feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft. where compressed air is not used; abutement and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men or brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

LAB00660-006 03/01/2023

Lincoln, Montgomery, St Charles and Warren Counties

	Rates	Fringes
LABORER (Common or General).....	\$ 36.91	15.62

LAB00662-001 05/01/2023

Callaway, Cole, Miller and Moniteau Counties

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 32.98	15.62
GROUP 2.....	\$ 32.98	15.62

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders; salamander Tenders; Dump Man; Ticket Takers; loading trucks under bins, hoppers, and conveyors; track man; cement handler; dump man on earth fill; georgie buggie man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap pavers rock, block or brick; scaffolds over ten feet not self-supported from ground up; skip man on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzleleman; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees; feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on

underground tunnels less than 25 ft. where compressed air is not used; abutement and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men or brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

LABO0663-002 04/01/2023

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 34.15	17.06
GROUP 2.....	\$ 35.36	17.06

LABORERS CLASSIFICATIONS

GROUP 1: General laborers, Carpenter tenders, salamander tenders, loading trucks under bins, hoppers and conveyors, track men and all other general laborers, air tool operator, cement handler (bulk or sack), chain or concrete saw, deck hands, dump man on earth fill, Georgie Buggies man, material batch hopper man, scale man, material mixer man (except on manholes), coffer dams, abutments and pier hole men working below ground, riprap pavers rock, black or brick, signal man, scaffolds over ten feet not self-supported from ground up, skipman on concrete paving, wire mesh setters on concrete paving, all work in connection with sewer,water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipelines, power tool operator, all work in connection with hydraulic or general dredging operations, straw blower nozzle,asphalt plant platform man, chuck tender, crusher feeder, men handling creosote ties on creosote materials, men working with and handling epoxy material or materials (where special protection is required), topper of standing trees, batter board man on pipe and ditch work, feeder man on wood pulverizers, board and willow mat weavers and cable tiers on river work, deck hands, pile dike and revetment work, all laborers working on underground tunnels less than 25 feet where compressed air is not used, abutment and pier hole men working six (6) feet or more below ground, men working in coffer dams for bridge piers and footings in the river, ditchliners, pressure groutmen, caulker and chain or concrete saw, cliffscalers working from scaffolds, bosuns' chairs or platforms on dams or power plants over (10) feet above ground, mortarmen on brick or block manholes, signal man.

GROUP 2: Skilled Laborer - spreader or screed man on asphalt machine, asphalt raker, grade checker, vibrator man, concrete saw over 5 hp., laser beam man, barco tamper, jackson or any other similar tamp, wagon driller, churn drills, air track drills and other similar drills, cutting torch man, form setters, liners and stringline men on concrete paving, curb, gutters and etc., hot mastic kettelman, hot tar applicator, hand blade operators, mortar men on brick or block manholes, sand blasting and gunnite nozzle men, rubbing concrete, air tool operator in tunnels, head pipe layer on sewer work, manhole builder (brick or block), dynamite and powder men.

LABO0840-011 05/01/2023

Crawford, Dent, Franklin, Gasconade, Howell, Maries, Oregon, Osage, Phelps, Pulaski, Shannon and Texas Counties

	Rates	Fringes
LABORER (Crawford, Dent, Gasconade, Howell, Maries, Oregon, Osage, Phelps, Pulaski, Shannon and Texas Counties)		
GROUP 1.....	\$ 32.98	15.62
GROUP 2.....	\$ 32.98	15.62
LABORER (Franklin County)		
GROUP 1.....	\$ 35.44	15.62
GROUP 2.....	\$ 36.04	15.62

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders; salamander Tenders; Dump Man; Ticket Takers; loading trucks under bins, hoppers, and conveyors; track man; cement handler; dump man on earth fill; georgie buggy man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap pavers rock, block or brick; scaffolds over ten feet not self-supported from ground up; skip man on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; toppler of standing trees; feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft. where compressed air is not used; abutement and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men on brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and

ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

LAB00955-012 05/01/2023

Adair, Audrain, Boone, Chariton, Cooper, Howard, Linn, Macon, Monroe, Putnam, Randolph, Schuyler and Sullivan Counties

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 32.98	15.62
GROUP 2.....	\$ 32.98	15.62

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders; salamander Tenders; Dump Man; Ticket Takers; loading trucks under bins, hoppers, and conveyors; track man; cement handler; dump man on earth fill; georgie buggy man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap pavers rock, block or brick; scaffolds over ten feet not self-supported from ground up; skip man on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzle man; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees; feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft. where compressed air is not used; abutement and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men or brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man;

waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

LAB01104-005 05/01/2023

Bollinger, Butler, Cape Girardeau, Carter, Dunklin, Iron, Madison, Mississippi, New Madrid, Pemiscot, Perry, Reynolds, Ripley, Scott, St Francois, Ste Genevieve, Stoddard and Wayne Counties

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 32.98	15.62
GROUP 2.....	\$ 32.98	15.62

LABORERS CLASSIFICATIONS

GROUP 1 - General laborer-flagman, carpenter tenders; salamander Tenders; Dump Man; Ticket Takers; loading trucks under bins, hoppers, and conveyors; track man; cement handler; dump man on earth fill; georgie buggy man; material batch hopper man; spreader on asphalt machine; material mixer man (except on manholes); coffer dams; riprap pavers rock, block or brick; scaffolds over ten feet not self-supported from ground up; skip man on concrete paving; wire mesh setters on concrete paving; all work in connection with sewer, water, gas, gasoling, oil, drainage pipe, conduit pipe, tile and duct lines and all other pipe lines; power tool operator; all work in connection with hydraulic or general dredging operations; form setters, puddlers (paving only); straw blower nozzleman; asphalt plant platform man; chuck tender; crusher feeder; men handling creosote ties or creosote materials; men working with and handling epoxy material; topper of standing trees; feeder man on wood pulverizers, board and willow mat weavers and cabelee tiers on river work; deck hands; pile dike and revetment work; all laborers working on underground tunnels less than 25 ft. where compressed air is not used; abutement and pier hole men working six (6) ft. or more below ground; men working in coffer dams for bridge piers and footing in the river; barco tamper; jackson or any other similar tamp; cutting torch man; liners, curb, gutters, ditch lines; hot mastic kettlemen; hot tar applicator; hand blade operator; mortar men or brick or block manholes; rubbing concrete, air tool operator under 65 lbs.; caulker and lead man; chain or concrete saw under 15 h.p.; signal Gan; Guard rail and sign erectors.

GROUP 2 - Skilled laborers - Vibrator man; asphalt raker; head pipe layer on sewer work; batterboard man on pipe and ditch work; cliff scalers working from bosun's chairs; scaffolds or platforms on dams or power plants over 10 ft. high; air tool operator over 65 lbs.; stringline man on concrete paving; sandblast man; laser beam man; wagon drill; churn drill; air track drill and all other similar type drills, gunite nozzle man; pressure grout man; screed man on asphalt; concrete saw 15 h.p. and over; grade checker; strigline man on electronic grade control; manhole builder; dynamite man; powder man; welder; tunnel man; waterblaster - 1000 psi or over; asbestos and/or hazardous waste removal and/or disposal

PAIN0002-002 09/01/2007

CLARK, FRANKLIN, JEFFERSON, LEWIS, LINCOLN, MARION, PIKE,

RALLS, ST. CHARLES, ST. LOUIS (CITY & COUNTY), AND WARREN
COUNTIES

	Rates	Fringes
Painters:		
Brush and Roller; Taper.....	\$ 28.61	10.24
High work over 60 feet.....	\$ 29.11	10.24
Lead Abatement.....	\$ 29.36	10.24
Pressure Roller; High work under 60 ft.....	\$ 28.86	10.24
Spray & Abrasive Blasting; Water Blasting (Over 5000 PSI).....	\$ 30.61	10.24
Taper (Ames Tools & Bazooka).....	\$ 30.21	10.24

PAIN0002-006 04/01/2023		

ADAIR, AUDRAIN, BOONE, CALLAWAY, CHARITON, COLE, GASCONADE,
HOWARD, KNOX, LINN, MACON, MONROE, MONTGOMERY, OSAGE, PUTNAM,
RANDOLPH, SCHUYLER, SCOTLAND, SHELBY AND SULLIVAN COUNTIES and
the City of Booneville.

	Rates	Fringes
Painters:		
Bridges, Dams, Locks or Powerhouses.....	\$ 28.49	15.03
Brush and Roll; Taping, Paperhanging.....	\$ 26.49	15.03
Epoxy or Any Two Part Coating; Sandblasting; Stage or other Aerial Work - Platforms over 50 feet high; Lead Abatement.....	\$ 27.49	15.03
Spray; Structural Steel (over 50 feet).....	\$ 27.49	15.03
Tapers using Ames or Comparable Tools.....	\$ 27.24	15.03

PAIN0003-004 04/01/2019		

CASS, CLAY, CLINTON, JACKSON, JOHNSON, LAFAYETTE, PLATTE & RAY
COUNTIES

	Rates	Fringes
Painters:		
Bridgeman; Lead Abatement; Sandblast; Storage Bin & Tanks.....	\$ 33.41	17.76
Brush & Roller.....	\$ 30.54	17.76
Drywall.....	\$ 31.74	17.76
Paper Hanger.....	\$ 31.04	17.76
Stageman; Beltman; Steelman; Elevator Shaft; Bazooka, Boxes and Power Sander; Sprayman; Dipping...	\$ 32.41	17.76
Steeplejack.....	\$ 36.98	17.76

PAIN0003-011 04/01/2019		

BATES, BENTON, CALDWELL, CARROLL, COOPER, DAVIESS, GRUNDY,
HARRISON, HENRY, LIVINGSTON, MERCER, MONITEAU, MORGAN, PETTIS &
SALINE COUNTIES

Rates Fringes

Painters:

Bridgeman; Lead Abatement; Sandblast; Storage Bin & Tanks.....	\$ 26.73	17.76
Brush & Roller.....	\$ 24.43	17.76
Drywall.....	\$ 25.39	17.76
Paper Hanger.....	\$ 24.83	17.76
Stageman; Beltman; Steelman; Elevator Shaft; Bazooka, Boxes and Power Sander; Sprayman; Dipping...	\$ 26.35	17.76
Steeplejack.....	\$ 29.58	17.76

PAIN0203-001 04/01/2012

BARRY, BARTON, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE,
HICKORY, HOWELL, JASPER, LAWRENCE, MCDONALD, NEWTON, OZARK,
POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER, and WRIGHT
COUNTIES

Rates Fringes

Painters:

Finisher.....	\$ 20.18	11.33
Painter.....	\$ 19.75	11.76
Sandblaster, High Man, Spray Man, Vinyl Hanger, Tool Operator.....	\$ 21.18	11.33

PAIN1185-008 04/01/2023

CAMDEN, CRAWFORD, DENT, LACLEDE, MARIES, MILLER, PHELPS,
PULASKI AND TEXAS COUNTIES

Rates Fringes

Painters:

Brush and Roller.....	\$ 31.83	15.13
Floor Work.....	\$ 32.83	15.13
Lead Abatement.....	\$ 32.83	15.13
Spray.....	\$ 32.83	15.13
Structural Steel, Sandblasting and All Tank Work.....	\$ 33.83	15.13
Taping, Paperhanging.....	\$ 32.83	15.13

PAIN1292-002 09/01/2022

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN,
MISSISSIPPI, NEW MADRID, OREGON, PEMISCOT, PERRY, REYNOLDS,
RIPLEY, SCOTT, SHANNON, STODDARD and WAYNE COUNTIES

Rates Fringes

Painters:

Bridges, Stacks & Tanks.....	\$ 33.93	15.36
Brush & Roller.....	\$ 29.58	15.36
Spray & Abrasive Blasting; Waterblasting (over 5000 PSI).....	\$ 31.58	15.36

Height Rates (All Areas):
Over 60 ft. \$0.50 per hour.
Under 60 ft. \$0.25 per hour.

PAIN1292-003 09/01/2022

IRON, MADISON, ST. FRANCOIS, STE. GENEVIEVE and WASHINGTON
COUNTIES

	Rates	Fringes
Painters:		
Bridges, Stacks & Tanks.....	\$ 33.93	15.36
Brush & Roller.....	\$ 29.58	15.36
Spray & Abrasive Blasting; Waterblasting (Over 5000 PSI).....	\$ 31.58	15.36
Height Rates (All Areas):		
Over 60 ft. \$0.50 per hour		
Under 60 ft. \$0.25 per hour.		

PAIN2012-001 04/01/2023

ANDREW, ATCHISON, BUCHANAN, DE KALB, GENTRY, HOLT, NODAWAY &
WORTH COUNTIES

	Rates	Fringes
Painters:		
Brush & Roller.....	\$ 34.22	19.13
Sandblaster.....	\$ 38.46	19.13
Steeplejack.....	\$ 42.03	19.13

PLAS0518-006 03/01/2023

BARRY, BARTON, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE,
HICKORY, JASPER, LACLEDE, LAWRENCE, MCDONALD, NEWTON, OZARK,
POLK, ST. CLAIR, STONE, TANEY, VERNON, WEBSTER, AND WRIGHT
COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 26.57	12.43

PLAS0518-007 04/01/2023

CASS (Richards-Gebaur AFB only), CLAY, JACKSON, PLATTE AND RAY
COUNTIES

	Rates	Fringes
Cement Masons:.....	\$ 36.57	18.30

PLAS0518-011 04/01/2023

ANDREW, ATCHISON, BATES, BUCHANNAN, CLINTON, DEKALB, GENTRY,
HENRY, HOLT, JOHNSON, LAFAYETTE, NODAWAY & WORTH COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 36.03	20.50

PLAS0527-001 04/01/2023

	Rates	Fringes
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CEMENT MASON		
FRANKLIN, LINCOLN AND		
WARREN COUNTIES.....	\$ 37.29	20.23
JEFFERSON, ST. CHARLES		
COUNTIES AND ST. LOUIS		
(City and County).....	\$ 38.46	20.13

PLAS0527-004 06/01/2023

CRAWFORD, DENT, IRON, MADISON, MARION, PHELPS, PIKE, PULASKI,
RALLS, REYNOLDS, ST. FRANCOIS, STE. GENEVIEVE, SHANNON, TEXAS,
WASHINGTON COUNTIES

	Rates	Fringes
CEMENT MASON.....	\$ 32.00	19.72

PLAS0908-001 05/01/2023

BOLLINGER, BUTLER, CAPE GIRARDEAU, CARTER, DUNKLIN, HOWELL,
MISSISSIPPI, NEW MADRID, OREGON, PEMISCOT, PERRY, RIPLEY,
SCOTT, STODDARD, AND WAYNE COUNTIES

	Rates	Fringes
CEMENT MASON.....	\$ 32.30	18.38

PLAS0908-005 05/01/2023

BENTON, CALDWELL, CALLAWAY, CAMDEN, CARROLL, COLE, DAVIESS,
GASCONADE, GRUNDY, HARRISON, LIVINGSTON, MACON, MARIES, MERCER,
MILLER, MONTGOMERY, MORGAN, OSAGE, PETTIS & SALINE COUNTIES

	Rates	Fringes
CEMENT MASON.....	\$ 32.30	18.38

PLUM0008-003 06/01/2023

CASS, CLAY, JACKSON, JOHNSON, AND PLATTE COUNTIES

	Rates	Fringes
Plumbers.....	\$ 54.28	23.79

PLUM0008-017 06/01/2023

BATES, BENTON, CARROLL, HENRY, LAFAYETTE, MORGAN, PETTIS, RAY,
ST. CLAIR, SALINE AND VERNON COUNTIES

	Rates	Fringes
Plumbers.....	\$ 54.28	23.79

PLUM0045-003 08/01/2023

ANDREW, ATCHISON, BUCHANAN, CALDWELL, CLINTON, DAVIESS, DEKALB,
GENTRY, HARRISON, HOLT, NODAWAY AND WORTH COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 44.35	26.05

PLUM0178-003 11/01/2023

BARRY, CEDAR, CHRISTIAN, DADE, DALLAS, DOUGLAS, GREENE,
HICKORY, LACLEDE, LAWRENCE, POLK, STONE, TANEY, WEBSTER AND
WRIGHT COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 37.15	15.42

PLUM0178-006 11/01/2022		

BARTON, JASPER, MCDONALD AND NEWTON COUNTIES

	Rates	Fringes
Plumbers and Pipefitters		
Projects \$750,000 & under...	\$ 32.78	15.32
Projects over \$750,000.....	\$ 35.75	15.32

PLUM0533-004 06/01/2023		

BATES, BENTON, CARROLL, CASS, CLAY, HENRY, HICKORY, JACKSON,
JOHNSON, LAFAYETTE, MORGAN, PETTIS, PLATTE, RAY, SALINE, ST.
CLAIR AND VERNON COUNTIES

	Rates	Fringes
Pipefitters.....	\$ 53.56	24.70

PLUM0562-004 07/01/2023		

ADAIR, AUDRAIN, BOLLINGER, BOONE, BUTLER, CALLAWAY,CAMDEN, CAPE
GIRARDEAU,CARTER, CHARITON, CLARK, COLE, COOPER, CRAWFORD,
DENT, DUNKLIN, FRANKLIN, GASCONADE, GRUNDY, HOWARD, HOWELL,
IRON, JEFFERSON, KNOX, LEWIS, LINCOLN, LINN, LIVINGSTON, MACON,
MADISON, MARIES, MARION, MERCER, MILLER, MISSISSIPPI, MONITEAU,
MONROE, MONTGOMERY, NEW MADRID, OREGON, OSAGE, PEMISCOTT,
PERRY, PHELPS, PIKE, PULASKI, PUTNAM, RALLS, RANDOLPH,
REYNOLDS, RIPLEY, ST. CHARLES, ST.FRANCOIS, STE. GENEVIEVE, ST.
LOUIS, SCHUYLER, SCOTLAND, SCOTT, SHANNON, SHELBY, STODDARD,
SULLIVAN, TEXAS, WARREN, WASHINGTON,AND WAYNE COUNTIES.

	Rates	Fringes
Plumbers and Pipefitters		
Mechanical Contracts		
including all piping and		
temperature control work		
\$7.0 million & under.....	\$ 46.66	21.99
Mechanical Contracts		
including all piping and		
temperature control work		
over \$7.0 million.....	\$ 46.66	21.99

PLUM0562-016 07/01/2023		

CAMDEN, COLE, CRAWFORD, FRANKLIN, JEFFERSON, MARIES, MILLER,
MONITEAU, OSAGE, PHELPS, PULASKI, ST. CHARLES, ST. LOUIS (City
and County), WARREN and WASHINGTON COUNTIES

	Rates	Fringes
Plumbers		
Mechanical Contracts		
including all piping and		
temperature control work		

\$7.0 million & under.....	\$ 46.66	21.99
Mechanical Contracts		
including all piping and		
temperature control work		
over \$7.0 million.....	\$ 46.66	21.99

TEAM0013-001 05/01/2023

Rates

Fringes

Truck drivers (ADAIR, BUTLER,
CLARK, DUNKIN, HOWELL, KNOX,
LEWIS, OREGON, PUTNAM,
RIPLEY, SCHUYLER AND SCOTLAND
COUNTIES)

GROUP 1.....	\$ 33.04	15.15
GROUP 2.....	\$ 33.19	15.15
GROUP 3.....	\$ 33.31	15.15
GROUP 4.....	\$ 33.20	15.15

Truck drivers (AUDRAIN,
BOLLINGER, BOONE, CALLAWAY,
CAPE GIRARDEAU, CARTER, COLE,
CRAWFORD, DENT, GASCONADE,
IRON, MACON, MADISON, MARIES,
MARION, MILLER, MISSISSIPPI,
MONROE, MONTGOMERY, NEW
MADRID, OSAGE, PEMISCOT,
PERRY, PHELPS, PIKE, PULASKI,
RALLS, REYNOLDS, ST.
FRANCOIS, STE. GENEVIEVE,
SCOTT, SHANNON, SHELBY,
STODDARD, TEXAS, WASHINGTON
AND WAYNE COUNTIES)

GROUP 1.....	\$ 33.77	15.05
GROUP 2.....	\$ 33.93	15.05
GROUP 3.....	\$ 33.92	15.05
GROUP 4.....	\$ 34.04	15.05

Truck drivers (FRANKLIN,
JEFFERSON and ST. CHARLES
COUNTIES)

GROUP 1.....	\$ 36.13	15.15
GROUP 2.....	\$ 36.24	15.15
GROUP 3.....	\$ 36.28	15.15
GROUP 4.....	\$ 36.35	15.15

Truck drivers (LINCOLN and
WARREN COUNTIES)

GROUP 1.....	\$ 34.78	15.15
GROUP 2.....	\$ 34.89	15.15
GROUP 3.....	\$ 35.93	15.15
GROUP 4.....	\$ 35.00	15.15

TRUCK DRIVERS CLASSIFICATIONS:

GROUP 1: Flat Bed Trucks, Single Axle; Station Wagons;
Pickup Trucks; Material Trucks, Single Axle; Tank Wagon,
Single Axle

GROUP 2: Agitator and Transit Mix Trucks

GROUP 3: Flat Bed Trucks, Tandem Axle; Articulated Dump
Trucks; Material Trucks, Tandem Axle; Tank Wagon, Tandem
Axle

GROUP 4: Semi and/or Pole Trailers; Winch, Fork & Steel
Trucks; Distributor Drivers and Operators; Tank Wagon,
Semi-Trailer; Insley Wagons, Dumpsters, Half-Tracks,
Speedace, Euclids and other similar equipment; A-Frame and
Derrick Trucks; Float or Low Boy

	Rates	Fringes
Truck drivers (ANDREW, BARTON, BATES, BENTON, CALDWELL, CAMDEN, CARROLL, CEDAR, CHARITON, CHRISTIAN, CLINTON, COOPER, DADE, DALLAS, DAVIESS, DEKALB, DOUGLAS, GREENE, HENRY, HICKORY, HOWARD, JASPER, LACLEDE, LAWRENCE, LINN, LIVINGSTON, MONITEAU, MORGAN, NEWTON, PETTIS, POLK, RANDOLPH, ST. CLAIR, SALINE, VERNON, WEBSTER AND WRIGHT COUNTIES)		
GROUP 1.....	\$ 31.37	14.25
GROUP 2.....	\$ 31.53	14.25
GROUP 3.....	\$ 31.52	14.25
GROUP 4.....	\$ 31.64	14.25
Truck drivers: (ATCHISON, BARRY, GENTRY, GRUNDY, HARRISON, HOLT, MCDONALD, MERCER, NODAWAY, OZARK, STONE, SULLIVAN, TANEY AND WORTH COUNTIES)		
GROUP 1.....	\$ 30.64	14.25
GROUP 2.....	\$ 30.80	14.25
GROUP 3.....	\$ 30.79	14.25
GROUP 4.....	\$ 30.91	14.25
Truck drivers; (BUCHANAN, JOHNSON AND LAFAYETTE COUNTIES)		
GROUP 1.....	\$ 32.58	14.25
GROUP 2.....	\$ 32.69	14.25
GROUP 3.....	\$ 32.73	14.25
GROUP 4.....	\$ 32.80	14.25

TRUCK DRIVER CLASSIFICATIONS

- GROUP 1: Flat bed trucks single axle; station wagons; pickup trucks; material trucks single axle; tank wagons single axle.
- GROUP 2: Agitator and transit mix-trucks.
- GROUP 3: Flat bed trucks tandem axle; articulated dump trucks; material trucks tandem axle; tank wagons tandem axle.
- GROUP 4: Semi and/or pole trailers; winch, fork & steel trucks; distributor drivers & operators; tank wagons semi-trailer; insley wagons, dumpsters, half-tracks, speedace, euclids & other similar equipment; A-frames and derrick trucks; float or low boy.

BARRY, BARTON, CAMDEN, CEDAR, CHRISTIAN, DALLAS, DENT, DOUGLAS, GREENE, HICKORY, HOWELL, JASPER, LACLEDE, LAWRENCE, MCDONALD, MILLER, NEWTON, OZARK, PHELPS, POLK, PULASKI, SHANNON, STONE, TANEY, TEXAS, VERNON, WEBSTER AND WRIGHT COUNTIES

	Rates	Fringes
Truck drivers:		

Traffic Control Service
Driver.....\$ 20.45 0.00

PAID HOLIDAYS: New Year's Day, Decoration Day, July 4th,
Labor Day, Thanksgiving Day, Christmas Day, employee's
birthday and 2 personal days.

TEAM0541-001 04/01/2023

CASS, CLAY, JACKSON, PLATTE AND RAY COUNTIES

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 35.31	17.55
GROUP 2.....	\$ 34.74	17.55
GROUP 3.....	\$ 34.22	17.55

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1: Mechanics and Welders, Field; A-Frame Low Boy-Boom
ruck Driver.

GROUP 2: Articulated Dump Truck; Insley Wagons: Dump Trucks,
Excavating, 5 cu yds and over; Dumpsters; Half-Tracks:
Speedace: Euclids & similar excavating equipment Material
trucks, Tandem Two teams; Semi-Trailers; Winch trucks-Fork
trucks; Distributor Drivers and Operators; Agitator and
Transit Mix; Tank Wagon Drivers, Tandem or Semi; One Team;
Station Wagons; Pickup Trucks; Material Trucks, Single
Axle; Tank Wagon Drivers, Single Axle

GROUP 3: Oilers and Greasers - Field

TEAM0682-002 05/01/2023

ST LOUIS CITY AND COUNTY

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 34.37	8.44+a+b+c+d
GROUP 2.....	\$ 34.37	8.44+a+b+c+d
GROUP 3.....	\$ 34.37	8.44+a+b+c+d

- a. PENSION: 5/1/2012 - \$182.20 per week.
- b. HAZMAT PREMIUM: If Hazmat certification on a job site is
required by a state or federal agency or requested by
project owner or by the employer, employees on that job
site shall receive \$1.50 premium pay.

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - Pick-up trucks; forklift, single axle; flatbed
trucks; job site ambulance, and trucks or trailers of a
water level capacity of 11.99 cu. yds. or less

GROUP 2 - Trucks or trailers of a water level capacity of
12.0 cu yds. up to 22.0 cu yds. including euclids, speedace
and similar equipment of same capacity and compressors

GROUP 3 - Trucks or trailers of a water level capacity of
22.0 cu. yds & over including euclids, speedace & all
floats, flatbed trailers, boom trucks, winch trucks,
including small trailers, farm wagons tilt-top trailers,
field offices, tool trailers, concrete pumps, concrete
conveyors & gasoline tank trailers and truck mounted mobile

concrete mixers

FOOTNOTE FOR TRUCK DRIVERS:

c. PAID HOLIDAYS: Christmas Day, Independence Day, Labor Day, Memorial Day, Veterans Day, New Years Day, Thanksgiving Day

d. PAID VACATION: 3 days paid vacation for 600 hours of service in any one contract year; 4 days paid vacation for 800 hours of service in any one contract year; 5 days paid vacation for 1,000 hours of service in any one contract year. When such an employee has completed 3 years of continuous employment with the same employer and then works the above required number of hours, he shall receive double the number of days of vacation specified above. When such an employee has completed 10 years of continuous employment with the same employer and then works the above required number of hours, he shall receive triple the number of days of vacation specified above. When such an employee has completed 15 years of continuous employment with the same employer and then works the above required number of hours, he shall receive 4 times the number of days of vacation specified above.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

- 1.) Has there been an initial decision in the matter? This can be:
- * an existing published wage determination
 - * a survey underlying a wage determination
 - * a Wage and Hour Division letter setting forth a position on a wage determination matter
 - * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
PUBLIC DRINKING WATER BRANCH/FINANCIAL ASSISTANCE CENTER
CONSTRUCTION PERMIT APPLICATION

FOR OFFICE USE ONLY

REVIEW NO.

DATE RECEIVED

No fee is required for a construction permit.

If you have any questions, call 1-800-361-4827 or 573-751-5924 (PDWB) or 573-751-1192 (FAC)

Submit one copy of the application and two copies (one hard copy and one electronic copy) of required documentation to: Permits and Engineering Section or Financial Assistance Center (For DWSRF projects), P.O. Box 176, Jefferson City, Missouri 65102-0176 **Or email to:** pdwb.engineeringwaterpermits@dnr.mo.gov

Per 640.115 - Construction, extension or alteration of a public water system shall be in accordance with the rules and regulations of the Safe Drinking Water Commission. Requirements for submission, review and approval of engineering reports, plans and specifications for public water supply planning and construction must be in accordance with 10 CSR 60-3.010, 10 CSR 60-10.010, and 10 CSR 60-13 (For DWSRF projects).

Is this project being funded by DWSRF? ☐ Yes ☐ No

NAME OF PROJECT

Jackson County BRO-B048(059) - Stoenner Rd Bridge Replacement

PUBLIC WATER SYSTEM INFORMATION

NAME OF PUBLIC WATER SYSTEM PWSD #16	CONTACT PERSON Kyle Leeds	TITLE Manager	PUBLIC WATER SYSTEM ID NO MO1020869
ADDRESS 100 N. Buckner Tarsney Road	CITY Sibley	STATE MO	ZIP CODE 64088
TELEPHONE NUMBER 816-650-5537	E-MAIL ADDRESS pwsd16@comcast.net		

CONSULTANT ENGINEER INFORMATION

CONSULTING FIRM OWN, Inc.	CONSULTANT ENGINEER NAME		
ADDRESS 8455 College Boulevard	CITY Overland Park	STATE KS	ZIP CODE 66210
TELEPHONE NUMBER 816-777-0400	E-MAIL ADDRESS mgibler@weareown.com		

DEVELOPER OF PROJECT INFORMATION

If the developer of project is different from the public water system, a signed acceptance letter from the public water system must be provided stating that upon completion of construction, the water system will own, operate and maintain the water system facilities.

DEVELOPER OF PROJECT NAME	TITLE		
ADDRESS	CITY	STATE	ZIP CODE
TELEPHONE NUMBER	E-MAIL ADDRESS		

PROJECT LOCATION

COUNTY Jackson	1/4, OF SE	1/4, OF SW	SECTION 19	TOWNSHIP 50N	RANGE 29W	LATITUDE 39.12238	LONGITUDE -94.15621
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SCOPE OF THE PROPOSED PROJECT (DESCRIBE THE PROJECT COMPLETELY. ATTACH ADDITIONAL SHEETS OF PAPER IF NECESSARY.)

Jackson County is replacing a Dbl-RCB with a bridge to join the channel up and down stream of Stoenner Rd. Along with other utility conflicts, a 2" water main needs to be moved south into an established easement to allow for construction.

PROPOSED WATER SUPPLY SOURCE

New community and non-transient non-community water systems commencing operation after October 1, 1999 or systems applying for DWSRF financing shall show as part of their application that the public water system will meet the minimum technical, managerial, and financial (TMF) capacity requirements. A TMF checklist is available upon request from the department.

The following information must be provided for new or modifications to water supply sources:

***Must be affixed with professional engineer's seal**

Well <input type="checkbox"/> Engineering Report* or Review No. _____ <input type="checkbox"/> Detailed Plans* <input type="checkbox"/> Technical Specifications* <input type="checkbox"/> Well Site Survey from Regional Office <input type="checkbox"/> Estimated Casing Depth letter from Water Resources Center	Surface water intake <input type="checkbox"/> Engineering Report* or Review No. _____ <input type="checkbox"/> Detailed Plans* <input type="checkbox"/> Technical Specifications*	Interconnection with PWS <input type="checkbox"/> Engineering Report* or Review No. _____ <input type="checkbox"/> Detailed Plans* <input type="checkbox"/> Technical Specifications* <input type="checkbox"/> Name of Public Water Supplier <input type="checkbox"/> Water Purchase Agreement (Permanent Interconnections only)
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PROPOSED STORAGE

The following information must be provided for new or modifications to storage tanks:
***Must be affixed with professional engineer's seal**

- | | |
|---|-----------------------------|
| <input type="checkbox"/> Engineering Report* or
Review No. _____ | Dimensions _____ ft |
| <input type="checkbox"/> Detailed Plans * | Capacity _____ gal |
| <input type="checkbox"/> Technical Specifications* | Ground Elevation _____ ft |
| | Overflow Elevation _____ ft |

PROPOSED WATERLINE

The following information must be provided for new or modifications to waterlines:
***Must be affixed with professional engineer's seal**

- | | |
|---|--|
| <input checked="" type="checkbox"/> Detailed Plans* | Line Size at Point of Connection <u>2</u> inch |
| <input checked="" type="checkbox"/> Technical Specifications* or
Standard Specifications* | Available Flow at Point of Connection <u>400</u> gpm |
| Review No. _____ or | Residual Pressure at Point of Connection <u>100</u> psi |
| Supervised Program Specifications* | Fire Demand (if applicable) <u>N/A</u> gpm |
| Review No. _____ | Residual Pressure at End of Proposed Waterline <u>100</u> psi |
| <input type="checkbox"/> Hydraulic Analysis* (For Complete Distribution
Systems or at the Department's discretion) | Any potential contamination near the proposed site? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes, must be shown on the Detailed Plans |

PROPOSED PUMPING

The following information must be provided for new or modifications to pumping stations:
***Must be affixed with professional engineer's seal**

- | | |
|---|-----------------------------|
| <input type="checkbox"/> Engineering Report* or
Review No. _____ | Number of Pumps _____ |
| <input type="checkbox"/> Detailed Plans * | Capacity / pump _____ gpm |
| <input type="checkbox"/> Technical Specifications* | Total Dynamic Head _____ ft |
| <input type="checkbox"/> Pump Curve | |

PROPOSED TREATMENT PROVIDED

The following information must be provided for new or modifications to treatment:
***Must be affixed with professional engineer's seal**

- | | |
|---|--|
| <input type="checkbox"/> Engineering Report* or
Review No. _____ | <input type="checkbox"/> Product or Equipment Literature (if applicable) |
| <input type="checkbox"/> Detailed Plans * | <input type="checkbox"/> Design Basis for size/capacity of units or chemical
dosages* |
| <input type="checkbox"/> Technical Specifications* | <input type="checkbox"/> Description of testing equipment |

PROPOSED WASTE DISPOSAL FACILITIES FOR WATER TREATMENT

The following information must be provided for new or modifications to waste disposal facilities:
***Must be affixed with professional engineer's seal**

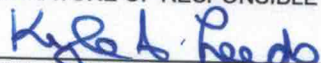
- | | |
|---|--------------------------------|
| <input type="checkbox"/> Detailed Plans* | Number of Units _____ |
| <input type="checkbox"/> Technical Specifications* | Capacity / Unit _____ gal |
| <input type="checkbox"/> Design Basis for size/capacity of units* | Final Disposal of sludge _____ |

CERTIFICATION

I certify that I have personally examined and am familiar with the information in this application and believe that the information submitted is accurate and complete. I am aware that making a false statement or misrepresentation in this application is grounds for denying or revoking the construction permit. I may also be guilty of a misdemeanor and upon conviction, may be punished by fine or imprisonment.

SIGNATURE OF RESPONSIBLE OFFICIAL

DATE

12/21/2023

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL

TITLE

Kyle Leeds

Manager

This RER has been completed, only administrators may edit this document now, they will contact you if any information changes.

Date Completed: 10/31/2022
Completed By: Mark Sowers

Request for Environmental Review Form#:2022-04-00130

☐ Alternative Project Delivery Method (such as Design/Build)

~Project Information

Prefix:	BRO	Project Number:	B048059	Bridge Number:	1020002
District:	Kansas City	County:	JACKSON	Sponsor:	Earl Newill - Deputy Director of Public Works
				Sponsor Email:	enewill@jacksongo
TIP Number:	63408:	Rte/Street:	EAST STOENNER RD null		
MoDOT Job Number:		TIGER Grant Funds:		Is this project on or adjacent to MoDOT Right of Way:	Unknown
Location/Stream Crossing :	BRANCH OF FIRE PRAIRIE				
TMS Project Description - termini (no stations):	JACKSON CO, REPLACE BRIDGE (1020002) OVER BRANCH OF FIRE PRAIRIE ON EAST STOENNER RD				
Describe RER project improvements in full detail:	REPLACE EXISTING STRUCTURALLY DEFICIENT BOX CULVERT WITH A NEW SINGLE SPAN BRIDGE OVER PRAIRIE FIRE CREEK BRANCH.				
District Liaison:	Rachel Thomas - 816-607-2255	Contact:	None selected		
Email:	Rachel.Thomas@modot.mo.gov	Email:			
Contact:	None selected	Contact:	None selected		
Email:		Email:			
Date Desired:	05/08/2022	Submit Date:	04/08/2022		
Desired A-Date:	07/01/2022				
Responsible Individual:	Kurt Mester - (4/8/2022 12:54:45 PM) - 816-777-0400	Submitted By:	Kurt Mester - (4/8/2022 12:00:00 AM) - 816-777-0400		
Existing Condition					
ADT:	45	Speed Limit:	25		
Number of Travel Lanes:	2	Lane Width:	12		
Shoulder Width:	0	Curb and Gutter:	No		
Bridge width, measured from gutterline to gutterline:	24.5	Sidewalks:	None		
Proposed Design Improvement					
ADT:	67	Speed Limit:	20	Design Speed:	25
Number of Travel Lanes:	2			Lane Width:	12
Shoulder Width:	1			Curb and Gutter:	No
Bridge width, measured from gutterline to gutterline:	26			Sidewalks:	None
Bridge Length:	80			Roadway length:	120
Railroad Crossing	No			Drainage District (If Applicable):	Choose One...

Program Year:

Preliminary Engineering: 2022

Right of Way: 2022

Construction: 2023

Has the sponsor documented that the project has: 1. Independent utility, 2. Logical termini, and 3. Does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements?:

☐ Project breakout from previous or larger project? *If checked explain:*

Acres - From all sources (e.g. donated from public or private entities):**Additional R/W (acres):** 0**Temp Easement (acres):** 0.34**Permanent Easement (acres):** 0.42

ROW may be needed, but, not yet determined? Yes

Is ANY Federally-owned land impacted by the project? ☐ Yes ☒ No**Land Disturbance:**

Will project involve 1 acre or more: No

Acres of Tree Clearing: .1 acres

DO NOT CLEAR TREES W/O MODOT'S PRIOR WRITTEN APPROVAL.

Number of Displacements(do not include partial takes that do not displace):Residential: ☐ Yes ☒ NoCommercial: ☐ Yes ☒ No

No. of People:

Residences:

No. of Employees:

Businesses:

Any Public Involvement planned or completed:

Acquisition of 5 or less properties and under 20 acres are not considered "substantial" and the County isn't currently planning formal public involvement. The two property owners directly affected by the project will each have individual donation/acquisition meetings with the County. The LPA will notify the public, as necessary, of project construction and traffic management plans. Any acquisition of affected properties will be in accordance with the procedures established in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Average Daily Traffic:

ADT Construction Year: 45

ADT Design Year: 67

Traffic Impacts:Road Closure Planned: ☒ Yes ☐ NoBridge Closure Planned: ☒ Yes ☐ No

Days/Months Closed: 120

Detour > 25 mi rural (including local roads) ☐ Yes ☒ NoDetour > 5 mi urban (including local roads, census defined urban) ☐ Yes ☒ No

Detour Info: Unsigned rural detour route, 4.5mi detour going south of the closure, 4.6mi detour going north of the closure.

Bicycle / Pedestrian Consideration

Pedestrian facilities considered:	No	Bicycle facilities considered:	No
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National Flood Insurance Program (NFIP) and Hydraulic Design Data:

☒ Project is in a FEMA-identified zone "subject to 100-year flooding":
If so, what zone?: A

☐ Project is in a FEMA-defined "floodway": No

☐ Project involves land purchased through FEMA Hazard Mitigation Grant Program (Flood buyout property)
If checked, give details:

Is ANY construction taking place on MoDOT owned property under this project?
☐ Yes ☒ No

☐ Is highway improvement located within 4 miles of an existing airport?

Known Concerns: Provide information you have about these resources that you have observed in the area.

Parkland:	N/A
Wetland/404 Permit:	Will submit 404 to ACOE
Land Disturbance / Stormwater:	Minimal impacts
Farmland:	Minimal impacts
Threatened & Endangered Species:	Report Included - Determination – May Affect, but not likely to Adverse Effect.
Migratory Birds: Are there birds nesting on the structure?	Existing structure is box culvert. Site visit conducted, no birds' nests visible
Hazardous Waste:	Report Included
Cultural Resources:	Built in 1965. Not eligilbe for Historic Status. Not historically significant. No other structures nearby.
LPA Comments:	

Project Attachments:

****NOTE: If making updates to an attachment, please use a different filename than the original.**
****The combined size of attachments in one upload must be less than 100MB**

Attachments:

✖Stoenner Floodplain Permit Signed.pdf

✖2022-08-17 NWP14-Ltr 2022-00424.pdf

✖117.JA22 2001 nhpa.pdf

✖Stoenner Bridge Farmland Conversion Impact Rating.pdf

✖Stoenner Road Bridge BRO-B048(59) SHPO 106 Submittal Packet.pdf

✖Mester_Jackson_Bridge - Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement.pdf

✖Stoenner Road Bridge BRO-B048(59) Section 106 Submittal Packet.pdf

✖Stoenner Road - Environmental Assessment Report.pdf

✖T&E-Species List_Missouri Ecological Services Field Office.pdf

✖T&E-NE Consistency Letter_FHWA_FRA_FTA Programmatic Consultation for Transportation Projects affecting NLEB or I.pdf

✖MDC-project_report_stoenner_road_over_br_48118_49191_FINAL.pdf

✖Stoenner - 2019 Non State Bridge Inspection_Jackson.pdf

✖Stoenner - FIRMETTE.pdf

✖Project Location.pdf

✖Bridge Report.pdf

✖4-8-22 Stoenner Rd Preliminary Plans.pdf

✖Stoenner Bridge ACM_LBP Inspection Report.pdf

Required Information to be attached for each RER stage:

- Location map (county map, topographic map or aerial map) showing the project limits
- plan sheets
- KMZ files showing tree clearing limits and/or plans
- permits/documentation as required (floodplain, farmland form, NWP, asbestos & lead based paint inspection reports, Section 106 Project Information Form for review, SHPO concurrence letter, USFWS IPac Official Species List, MDC Heritage Review Report, Effects determination)

RER Environmental Screenings

►Farmland Impact

Status Information:

☐ N/A ☐ Pending ☒ Cleared

Clearance Date:

06/08/2022

Environmental
Response:

UPDATE 6/8/22: The NRCS responded that the project contains prime farmland or farmland of statewide importance. Completion of the remainder of the form resulted in 187 total points, over the 160-point threshold. However, it is economically and logistically infeasible to move the road and bridge to a new location and would require conversion of even more farmland. Therefore, the original project site is selected. INITIAL: The project is located outside of a designated urbanized area as indicated on the 2010 U.S. Census Bureau Urban Area Reference Map and requires permanent easements. Therefore, the project is subject to the Farmland Protection Policy Act.

LPA Action:

COMPLETE: Complete Parts I & III of the attached Farmland Conversion Impact Rating Form AD-1006 and submit it along with the project description and map of the project area, including location of new right of way and/or permanent easements to the appropriate Area Resource Soil Scientist (ARSS) at the Natural Resources Conservation Service (NRCS). See the attached map of NRCS ARSS contacts for each region of the state. If NRCS determines the project site does not contain prime, unique, statewide or local important farmland, no further action is required. If the NRCS finds that the project site does contain prime or farmland of statewide or local importance, complete Part VI of the AD-1006 form, adding its point total to that of Part IV to achieve a cumulative point total for Part VII. If the cumulative point total does not exceed the 160-point threshold established by NRCS for the protection of farmland, no further action is required. If the cumulative point total exceeds 160 points, at least two alternative sites must be identified and considered for a project. If a suitable alternative site is found for a project and does not impact or has a reduced impact on prime, unique or statewide or local important farmland, the site must be seriously considered for the project. If alternative sites are determined unsuitable for the project, the LPA sponsor must identify why the sites are economically infeasible and/or logistically unreasonable. Once a site is chosen, record the recommended site or alternative site at the bottom of Part VII with justification for the selection. Submit the AD-1006 form to the NRCS for its records. Once the AD-1006 form and process are complete, upload the form to the RER for review by the environmental specialist.

Attachments:

✕ [Area Resource Soil Scientists NRCS_8-2021.pdf](#)

✕ [AD-1006_form.pdf](#)

☒ Farmland Impact Submitted - *Mark submitted when this review is ready to be sent to district staff.*

Last Updated: Mark Sowers - 6/8/2022 2:05:33 PM

►Floodplain/Regulatory Floodway

Status Information:

☐ N/A ☐ Pending ☒ Cleared

Clearance Date:

10/31/2022

Environmental
Response:

UPDATE 10/31/22: The floodplain development permit has been uploaded to the RER. INITIAL: According to the attached FEMA floodplain map, the project is in the 100-year floodplain. The project is not located in the regulatory floodway. Additionally, according to the attached page from FEMA's Community Status Book of National Flood Insurance Program (NFIP) memberships, Jackson County is a current member in the NFIP and has adopted a floodplain management ordinance including floodplain permitting requirements.

LPA Action:

COMPLETE: The county must issue a floodplain development permit for its project. Upload the approved permit once it is available.

Attachments:

✕ [NFIP_JacksonCo.pdf](#)

✕ [FIRMETTE_StoennerRoad.pdf](#)

☒ Floodplain/Regulatory Floodway Submitted - *Mark submitted when this review is ready to be sent to district staff.*

Last Updated: Mark Sowers - 10/31/2022 4:26:09 PM

►Land Disturbance / Stormwater

Status Information:

☒ N/A ☐ Possible Issues Noted

Clearance Date:

Environmental
Response:

If the project is in a regulated MS4 area, adhere to the MS4 requirements as defined in the MS4 permit specific to that municipality. Stormwater routed into MoDOT's drainage system (e.g., ditches and stormwater conveyance systems) must be treated for water quality and/or quantity before entering the system. Any project with land disturbance of 1-acre or more requires a NDPES land disturbance permit from MDNR.

LPA Action:

If the project will disturb 1-acre or more of land, obtain a NPDES land disturbance permit from DNR. The LPA must also implement best management practices in accordance with that permit and the Clean Water Act.

Attachments:

☒ Land Disturbance / Stormwater Submitted - *Mark submitted when this review is ready to be sent to district staff.*

Last Updated: Mark Sowers - 4/21/2022 8:48:39 AM

FEMA/SEMA Buyout

Status Information:

☒ N/A ☐ Pending ☐ Cleared

Clearance Date:

Environmental Response: According to the ArcMap GIS FEMA buyout layer, there are no flood buyout sites in the vicinity of the project area. The project will not result in development on any FEMA buyout properties.

LPA Action: None

Attachments:

☒ FEMA/SEMA Buyout Submitted - Mark submitted when this review is ready to be sent to district staff.

Last Updated: Mark Sowers - 4/21/2022 8:48:53 AM

Socioeconomic Impact

Status Information:

☐ N/A ☐ Pending ☒ Cleared

Clearance Date:

06/08/2022

Environmental Response: The project does not require commercial or residential displacements but does require temporary and permanent easements that are subject to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. Closure of the road and bridge for approximately 120 days will be required, using unsigned rural detour routes (4.5-mile detour going south of the closure, 4.6-mile detour going north of the closure). The ADT of the bridge/road is very low. The two property owners directly affected by the project will each have individual donation/acquisition meetings with the County. The LPA will notify the public in advance of project construction and traffic management plans. There are no significant impacts associated with this project. Impacts will be temporary and limited to traffic disruptions, construction noise, and fugitive dust and emissions in the area of project construction.

LPA Action: COMPLETE: 1. Provide information on how details of the project will be communicated to the public (press releases, social media posts, etc.) to fulfill the public involvement requirement. 2. Provide an estimate of the length of roadway/bridge closure in the RER form. 3. Notify the environmental specialist if it is determined that new right of way will be required.

Attachments:

☒ Socioeconomic Impact Submitted - Mark submitted when this review is ready to be sent to district staff.

Last Updated: Mark Sowers - 6/8/2022 2:13:58 PM

Threatened & Endangered Species

Status Information:

☒ No Effect ☐ Pending ☐ Cleared

Clearance Date:

06/08/2022

Environmental Response: MoDOT has completed a TE review for the project. A copy of MoDOT's effects determination document is attached. The USFWS IPaC lists the following species for the project area: gray bat, Indiana bat, and northern long-eared bat. There are no critical habitats located within the project limits. The MDC follow-up report indicated that there were no occurrences of state-listed species within the project limits. Occurrences of six state-ranked species of concern were identified near the project area. However, only species documented within 1 mile of the project were evaluated in this determination. Based on this distance criteria, impacts to the American badger were considered. MoDOT reviewed the TE materials provided by the consultant and agrees with their determinations related to federally listed species. As the designated non-federal representative of FHWA for USFWS Section 7 ESA requirements, MoDOT has determined the project will have No Effect on the gray bat, Indiana bat, and northern long-eared bat. Additionally, the project will not impact the state-ranked American badger. Please refer to the attached determination document for detailed explanations for each species. This completes the TE requirements for the project.

LPA Action: COMPLETE

Attachments:

✖ TE Complete - No Effect
BRO-B048(059) Jackson
Stoenner Road bridge
replacement.pdf

✖ BRO-B048(059)_MoDOT
Effects
Determination_Jackson_East
Stoenner Road_Tributary
Fire Prairie Creek_FINAL.pdf

☒ Threatened & Endangered Species Submitted - Mark submitted when this review is ready to be sent to district staff.

Last Updated: Kyleen Kelly - 6/8/2022 10:23:49 AM

► Migratory Birds

Status Information:

☒ N/A ☐ Pending ☐ Cleared

Clearance Date:

Environmental Response: The consultant completed an inspection of the existing box culvert on January 19, 2022 - no nests were observed. Based on this information, there are no concerns related to migratory birds and no conflicts with the MBTA.

LPA Action: None

Attachments:

☒ Migratory Birds Submitted - Mark submitted when this review is ready to be sent to district staff.

Last Updated: Mark Sowers - 4/21/2022 8:49:48 AM

► Hazardous Waste Impact

Status Information:

☒ N/A ☐ Pending ☐ Cleared

Clearance Date:

Environmental Response: According to the attached DNR E-START map, there are no Hazardous Substance Investigation and Cleanup Sites and no Regulated Petroleum and Hazardous Substance Storage Tank Facilities in the vicinity of the project area. There are no hazardous waste site concerns based on this information. However, the potential to encounter hazardous wastes from sites unknown to the LPA and MoDOT should always be a consideration. If there is any hydroblasting, grooving, milling or diamond grinding related to the project, residue and associated water must be prevented from being released to waterways or adjacent wetlands. According to the attached report, a lead-based paint and asbestos inspection was completed by a certified and licensed inspector on March 25, 2022. No lead-based paint or suspect asbestos containing material was found on the structure.

LPA Action: Any hazardous waste sites that are found during project construction will be addressed by the LPA sponsor in accordance with Federal and State Laws and Regulations. If any hazardous waste concerns arise, notify MoDOT's environmental specialist as soon as possible. Submit the asbestos report, notification, and demolition notice to DNR within 10 working days. The LPA/consultant is required to submit a request for asbestos and painted concrete inspection to a chemical laboratory. The information needed is outlined in Section 127.8.1.3.1 of the EPG. For demolition inspection, the LPA/consultant is required to notify DNR 10 days in advance of all bridge/building demolitions. It is recommended that Section 202.40.1.1 of the EPG - Notification of Demolition paragraph be included in contract documents to highlight this requirement. Refer to DNR's Asbestos Information page for more guidance: <http://dnr.mo.gov/env/apcp/asbestos/> Refer to DHSS Lead Licensing page for more guidance: <http://health.mo.gov/safety/leadlicensing/>

Attachments:

✕ ESTART_Stoenner
Road.JPG

☒ Hazardous Waste Impact Submitted - Mark submitted when this review is ready to be sent to district staff.

Last Updated: Mark Sowers - 4/21/2022 8:50:13 AM

► Wetland Impact (Section 404/401)

Status Information:

☐ N/A ☐ Pending ☒ Cleared

Clearance Date:

08/19/2022

Environmental Response: UPDATE 8/19/2022: The project sponsor submitted an NWP 14 PCN on 5/31/2022 to the USACE. The USACE responded on 8/17/2022, indicating that the project is authorized by NWP, provided that conditions listed in the NWP general conditions and KC regional NWP conditions are met. The USACE response has been uploaded as an attachment to the RER. Nothing further is required. INITIAL: According to the attached USFWS National Wetlands Inventory Mapper, there are wetlands or other waters of the U.S. in and/or around the project area. The bridge to be replaced crosses a tributary of Fire Prairie Creek. A review of Google Earth imagery also reveals the possible presence of wetlands/water bodies in the project area. The project may have impacts to wetlands or waters of the U.S.

LPA Action: Ensure that NWP general conditions, KC regional NWP conditions, and Section 401 Water Quality Certifications are met. Notify the USACE if project plans change.

Wetland Permit Information:	404 Permit Number	Permit Submitted	Permit Received
	NWK-2022-00424	5/31/2022	8/17/2022
	Permit Expiration	Compliance Certification Sent	Compliance Certification Received
	3/14/2026		

Attachments:

✕ NWI_StoennerRoad.pdf

☒ Wetland Impact Submitted - Mark submitted when this review is ready to be sent to district staff.

Last Updated: Kyleen Kelly - 8/19/2022 12:53:44 PM

► Noise Impact

Status Information: ☒ N/A ☐ Pending ☐ Cleared Clearance Date:

Environmental Response: This is a Type III project and a noise analysis is not required.

LPA Action: None

Attachments:

☒ Noise Impact Submitted - *Mark submitted when this review is ready to be sent to district staff.*

Last Updated: Mark Sowers - 4/21/2022 8:52:07 AM

► Cultural Resources Impact (Section 106/Historic 4f)

Status Information: ☐ Pending ☒ Cleared Clearance Date: 06/27/2022

Environmental Response: UPDATE 7/1/2022: On June 27, 2022, SHPO concurred with a determination of No Historic Properties Affected (SHPO Project No. 117-JA-22). Initial Response; The project requires a Section 106 Review in consultation with MoDOT, Jefferson County, and the State Historic Preservation Officer (SHPO) for identifying potential cultural resources that may be impacted by the project.

LPA Action: UPDATE 7/1/2022: Be advised that if changes are made to the project (including but not limited to the addition of new right of way or easements, or the changing of the scope) the project will need to be reevaluated and additional clearances may be required. Initial Response: Please update the draft SHPO submittal to include the following information: Bridge No. 1020002 is a reinforced concrete double box culvert constructed in 1965. As a typical example of a very common type, MoDOT recommends the bridge is not eligible for listing in the National Register of Historic Places. This project will include replacement of a culvert with a new bridge over Prairie Fire Creek Branch. No new right-of-way (ROW), but 0.34 acre of temporary easement and 0.42 acre of permanent easement are anticipated for the project. Additional ROW may be needed for the project but has not been determined yet. The project will involve less than 1 acre of land disturbance and 0.1 acres of tree clearing. The proposed project appears to be within existing disturbed or sloped land with a low potential for intact archaeological deposits. And, there are no prior archaeological surveys or previously recorded archaeological sites within or adjacent to the project area. Therefore, no archaeological survey is recommended for the project. Please upload a revised version of the form for final approval before submitting to SHPO. Upload SHPO's response when received.

Attachments:

✖ Jackson_Stoenner
Rd_BRO-B048(59)_Section
106_Admin_Record.pdf

☐ Adverse Effect or Conditional No Adverse Effect

☐ Based on the review of the project location and description noted above, there are no identified historic 4(f) resources affected that would preclude the setting of an A-date.

Checked by: on de minimis Approved on:

☒ Cultural Resources Impact Submitted - *Mark submitted when this review is ready to be sent to district staff.*

Last Updated: Alyssa Reynolds - 7/5/2022 10:08:22 AM

► Public Land Impact (Section 4f/6f)

Status Information: ☒ N/A ☐ Pending ☐ Cleared Clearance Date:

Environmental Response: According to Google Earth imagery and ArcMap GIS public lands layers, there are no Section 4(f) or Section 6(f) resources in the vicinity of the project area. The project will not result in a use to any Section 4(f) properties and no conversion of any Section 6(f) lands.

LPA Action: None

Attachments:

☒ Based on the review of the project location and description noted above, there are no identified 4(f) or 6(f) resources affected that would preclude the setting of an A-date.

Checked by: Mark Sowers on 04/11/2022

☒ Public Land Impact Submitted - *Mark submitted when this review is ready to be sent to district staff.*

Last Updated: Mark Sowers - 4/21/2022 8:56:10 AM

Other

Status Information:

☒ N/A ☐ Pending ☐ Cleared

Clearance Date:

Environmental Response: There are no additional resource impacts associated with this project.

LPA Action: None

Attachments:

☒ Other Screening Submitted - Mark submitted when this review is ready to be sent to district staff.

Last Updated: Mark Sowers - 4/21/2022 8:57:33 AM

NEPA Classification

NEPA Right-Of-Way Permission: Not Applicable as determined or approved by: KYLE.GRAYSON@MODOT.MO.GOV

NEPA Approval/Proceed to A-date Request: 07/01/2022 Re-evaluation Date:

NEPA Classification: PCE

This project qualifies for the programmatic categorical exclusion under Item#: 28 All Environmental Issues Cleared: 10/31/2022

Commitments and/or Comments to Sponsor: UPDATE 10/31/2022: All environmental issues cleared. UPDATE 7/1/2022: This project qualifies for a PCE NEPA classification. If there are any changes in the scope of the project, the Environmental Section should review those changes. The sponsor is ultimately responsible for complying with all applicable state and federal laws. The "All Environmental Issues Cleared" date will be provided when the floodplain development permit and Section 404 permit are uploaded to the RER. INITIAL: A Programmatic Categorical Exclusion (PCE) NEPA classification is anticipated for this proposed project. The NEPA approval date will be given once the Cultural Resources, Threatened & Endangered Species, and Public Lands sections are cleared and public involvement information is received. THE LPA/CONSULTANT SHOULD REVIEW ALL SECTIONS ABOVE INCLUDING THOSE MARKED AS CLEARED/GREEN.

Attachments:

✕PCE NEPA Concurrence_07.01.22.pdf

Last Submitted: 10/31/2022 by Mark Sowers



**Planning and Zoning Division
Public Works Department
Jackson County, Missouri
Application for Special Use Permit**

Date Printed:
10/31/2022

Application #: **SU20220084**

Application Date: **10/31/2022**

Project ID No.: **PR20220468**

Permission is hereby requested by

To perform the following described work on:

Type of Work: **Floodplain Dev Permit**

Work Sub Type: **Floodplain Dev Permit**

Street Address:

Lot:

Subdivision:

Stoenner RD

Section: Township:

Range:

General Location:

Permit Fee Received

Signature of Owner

Signature of Agent / Contractor

(This is an Application, NOT a Permit. Work cannot start until a Permit has been RECEIVED.)

Owner: JACKSON COUNTY PUB

Agent:

Contractor:

Public Works Jackson County

303 W WALNUT

INDEPENDENCE, MO 64050

Office

DO NOT START ANY CONSTRUCTION
UNTIL YOU RECEIVE YOUR PERMIT.

- 1: The permit will state the minimum allowable size culvert pipe to be used.
- 2: It will be mailed to address given on the application.
- 3: If a concrete drive is installed, inspection will need to be conducted prior to the concrete being poured.
- 4: Gravel and asphalt drive inspection will be conducted when drive is complete.

CULTURAL RESOURCE COMMENTS

Section 106 Review

CONTACT PERSON/ADDRESS:

Kurt Mester, PE, ENV SP
Anderson Engineering
941 W. 141st Terrace, Suite A
Kansas City, MO 64145

COPIED:

Raegan Ball, FHWA
Michael Meinkoth, MoDOT
Michael Meyer, MoDOT
Taylor Peters, FHWA

PROJECT:

Stoenner Road Bridge Replacement (BRO-B048(59)), Fort Osage Township, Buckner, Missouri

FEDERAL AGENCY:

FHWA

COUNTY:

Jackson

The Missouri State Historic Preservation Office (SHPO) has reviewed the information submitted on the above referenced project. Based on this review, we have made the following determination:

☒

Adequate documentation has been provided as outlined in 36 CFR Section 800.11. After review of the initial submission, the project area has no known historic properties present and a low potential for the occurrence of cultural resources. SHPO concurs with your determination of **No Historic Properties Affected**.

☐

An adequate cultural resource survey of the project area has been previously conducted; therefore, SHPO concurs with your determination of **No Historic Properties Affected**.

☐

An adequate cultural resource survey has been conducted for this project titled by . Based on this survey and its negative findings, SHPO concurs with your determination of **No Historic Properties Affected**.

PLEASE BE ADVISED THAT, IF THE CURRENT PROJECT AREA OR SCOPE OF WORK CHANGES, SUCH AS A BORROW AREA BEING ADDED, OR CULTURAL MATERIALS ARE ENCOUNTERED DURING CONSTRUCTION, APPROPRIATE INFORMATION MUST BE PROVIDED TO THIS OFFICE FOR FURTHER REVIEW AND COMMENT. Please retain this documentation as evidence of consultation with SHPO under Section 106 of the National Historic Preservation Act, as amended. SHPO concurrence does not complete the Section 106 process as federal agencies will need to conduct consultation with all interested parties.

By:

Toni M. Prawl

Toni M. Prawl, Ph.D., Deputy State Historic Preservation Officer

June 27, 2022

Date

MISSOURI DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
P.O. Box 176, Jefferson City, Missouri 65102

If you have any questions, please respond to Jeffrey.Alvey@dnr.mo.gov, or call (573) 751-7862.

Please be sure to refer to the project number: **117-JA-22**

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request			
Name of Project		Federal Agency Involved			
Proposed Land Use		County and State			
PART II (To be completed by NRCS)		Date Request Received By NRCS		Person Completing Form:	
Does the site contain Prime, Unique, Statewide or Local Important Farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)		YES <input type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %		Amount of Farmland As Defined in FPPA Acres: %		
Name of Land Evaluation System Used	Name of State or Local Site Assessment System		Date Land Evaluation Returned by NRCS		
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly					
B. Total Acres To Be Converted Indirectly					
C. Total Acres In Site					
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide Important or Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value					
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)					
PART VI (To be completed by Federal Agency) Site Assessment Criteria (Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)		Maximum Points	Site A	Site B	Site C
1. Area In Non-urban Use		(15)			
2. Perimeter In Non-urban Use		(10)			
3. Percent Of Site Being Farmed		(20)			
4. Protection Provided By State and Local Government		(20)			
5. Distance From Urban Built-up Area		(15)			
6. Distance To Urban Support Services		(15)			
7. Size Of Present Farm Unit Compared To Average		(10)			
8. Creation Of Non-farmable Farmland		(10)			
9. Availability Of Farm Support Services		(5)			
10. On-Farm Investments		(20)			
11. Effects Of Conversion On Farm Support Services		(10)			
12. Compatibility With Existing Agricultural Use		(10)			
TOTAL SITE ASSESSMENT POINTS		160			
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100			
Total Site Assessment (From Part VI above or local site assessment)		160			
TOTAL POINTS (Total of above 2 lines)		260			
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>			
Reason For Selection:					
Name of Federal agency representative completing this form:					Date:

(See Instructions on reverse side)

Form AD-1006 (03-02)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.



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Kansas City District

NWP 14 Linear Transportation Projects

14. Linear Transportation Projects. Activities required for crossings of waters of the United States associated with the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, driveways, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge of dredged or fill material cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge of dredged or fill material cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge of dredged or fill material in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Linear transportation projects must comply with 33 CFR 330.6(d).



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Note 2: Some discharges of dredged or fill material for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Note 3: For NWP 14 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b)(4) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, KANSAS CITY DISTRICT
601 E. 12TH STREET, 635 FEDERAL BUILDING
KANSAS CITY, MO 64106-2824

August 17, 2022

Regulatory Branch
NWK-2022-00424
Jackson, MO, NWP 14

Mr. Earl Newill
Jackson County Missouri
303 West Walnut
Independence, MO 64050

Dear Mr. Newill:

This letter pertains to an application received on May 31, 2022, for a Department of the Army permit. The proposed work concerns replacement of the East Stoenner Road crossing (#1020002) which will involve the placement of fill material within a tributary to Fire Prairie Creek. The project is located in Section 19, Township 50 North, Range 29 West, Jackson County, Missouri.

The Corps of Engineers has jurisdiction over all waters of the United States. Discharges of dredged or fill material in waters of the United States, including wetlands, require prior authorization from the Corps under Section 404 of the Clean Water Act (33 USC 1344). The implementing regulation for this Act is found at 33 CFR 320-332.

We have reviewed the information furnished and have determined that your project is authorized by nationwide permit (**NWP**) **14**, provided you ensure that the conditions listed in the enclosed copy of excerpts from the January 13, 2021, U.S. Army Corps of Engineers (Corps) (86 FR 2744), Reissuance and Modification of Nationwide Permits, are met. You must also comply with the Kansas City District Regional NWP Conditions posted at:
<http://www.nwk.usace.army.mil/Missions/RegulatoryBranch/NationWidePermits.aspx>.

The Missouri Department of Natural Resources has certified that this NWP will not violate existing state water quality standards provided you comply with the conditions included in the attached Missouri Section 401 Water Quality Certification (WQC) document. All conditions included in the WQC are conditions of the NWP authorization. Please review all conditions associated with this NWP. Per 40 CFR Part 121.11(c) the Corps is responsible for enforcing WQC conditions that are incorporated into this permit verification. If you have any questions concerning state WQC standards or compliance issues with the associated certification conditions, please contact the project manager at the phone number and/or email provided below.

General condition 30 requires you to sign and submit the enclosed "Compliance Certification" within 30 days of completing the authorized activity or the completion of the implementation of any required compensatory mitigation.

This NWP verification is valid until March 14, 2026. Should your project plans change or if your activity is not complete within the specified verification term, you must contact this office for another permit determination. Although the Corps has verified your project would meet the terms and conditions of a nationwide permit, other Federal, state and/or local permits may be required. You should verify this yourself.

Mr. Jesse Cochran, Project Manager, reviewed the information furnished and made this determination. If you have any questions concerning this matter, please feel free to contact Mr. Cochran at 816-389-3739 or by email at jesse.s.cochran@usace.army.mil. Please reference Permit No. NWK-2022-00424 in all comments and/or inquiries relating to this project. This letter is only being provided to you electronically at: ENewill@jacksongov.org.

Enclosures

cc (electronically w/o enclosures):

Environmental Protection Agency,
Watershed and Grants Branch
U.S. Fish and Wildlife Service, Columbia, Missouri
Missouri Department of Natural Resources,
Water Protection Program
State Historic Preservation Office
Missouri Department of Conservation

COMPLIANCE CERTIFICATION

General condition 30 of this Nationwide Permit requires that you submit a signed certification regarding the completed work and any required mitigation. This certification page satisfies this condition if it is provided to the Kansas City District at the address shown at the bottom of this page within 30 days of completing the authorized activity or the completion of the implementation of any required compensatory mitigation

APPLICATION NUMBER: NWK-2022-00424

APPLICANT: Jackson County Missouri
303 West Walnut
Independence, MO 64050

PROJECT LOCATION: Within a tributary to Fire Prairie Creek, located in Section 19, Township 50 North, Range 29 West, Jackson County, Missouri.

- a. I certify that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions.
- b. I certify that any required mitigation was completed in accordance with the permit conditions.
- c. Your signature below, as permittee, indicates that you have completed the authorized project as certified in paragraphs a and b above.

(PERMITTEE)

(DATE)

Return this certification to:

U.S. Army Corps of Engineers
Kansas City District, ODR
601 East 12th Street, Suite 402
Kansas City, MO 64106-2824
Email: Regulatory.KansasCity@usace.army.mil



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181



In Reply Refer To:

April 01, 2022

Project code: 2022-0026991

Project Name: Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement

Subject: Consistency letter for the 'Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement' project under the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat.

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated April 01, 2022 to verify that the **Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement** (Proposed Action) may rely on the revised February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action will have no effect on the endangered Indiana bat (*Myotis sodalis*) or the threatened Northern long-eared bat (*Myotis septentrionalis*). If the Proposed Action is not modified, **no consultation is required for these two species**. If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or Northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA Section 7(a)(2) may be required.

For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities: If your initial bridge/culvert or structure assessments failed to detect Indiana bats, but you later detect bats prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office within 2 working days of the incident. In these instances, potential incidental take of Indiana bats may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please advise the lead Federal action agency accordingly.

The following species may occur in your project area and **are not** covered by this determination:

- Gray Bat *Myotis grisescens* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate

Project Description

The following project name and description was collected in IPaC as part of the endangered species review process.

Name

Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement

Description

Bridge Replacement

Determination Key Result

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the threatened Northern long-eared bat. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for these two species.

Qualification Interview

1. Is the project within the range of the Indiana bat^[1]?

[1] See [Indiana bat species profile](#)

Automatically answered

Yes

2. Is the project within the range of the Northern long-eared bat^[1]?

[1] See [Northern long-eared bat species profile](#)

Automatically answered

Yes

3. Which Federal Agency is the lead for the action?

A) Federal Highway Administration (FHWA)

4. Are *all* project activities limited to non-construction^[1] activities only? (examples of non-construction activities include: bridge/abandoned structure assessments, surveys, planning and technical studies, property inspections, and property sales)

[1] Construction refers to activities involving ground disturbance, percussive noise, and/or lighting.

No

5. Does the project include *any* activities that are **greater than** 300 feet from existing road/rail surfaces^[1]?

[1] Road surface is defined as the actively used [e.g. motorized vehicles] driving surface and shoulders [may be pavement, gravel, etc.] and rail surface is defined as the edge of the actively used rail ballast.

No

6. Does the project include *any* activities **within** 0.5 miles of a known Indiana bat and/or NLEB hibernaculum^[1]?

[1] For the purpose of this consultation, a hibernaculum is a site, most often a cave or mine, where bats hibernate during the winter (see suitable habitat), but could also include bridges and structures if bats are found to be hibernating there during the winter.

No

7. Is the project located **within** a karst area?

No

8. Is there *any* suitable^[1] summer habitat for Indiana Bat or NLEB **within** the project action area^[2]? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

[1] See the Service's [summer survey guidance](#) for our current definitions of suitable habitat.

[2] The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR Section 402.02). Further clarification is provided by the [User's Guide for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat](#).

No

9. Does the project include wetland or stream protection activities associated with compensatory wetland mitigation?

No

10. Does the project include slash pile burning?

No

11. Does the project include *any* bridge removal, replacement, and/or maintenance activities (e.g., any bridge repair, retrofit, maintenance, and/or rehabilitation work)?

Yes

12. Is there *any* suitable habitat^[1] for Indiana bat or NLEB **within** 1,000 feet of the bridge? (includes any trees suitable for maternity, roosting, foraging, or travelling habitat)

[1] See the Service's current [summer survey guidance](#) for our current definitions of suitable habitat.

No

13. Does the project include the removal, replacement, and/or maintenance of *any* structure other than a bridge? (e.g., rest areas, offices, sheds, outbuildings, barns, parking garages, etc.)

No

14. Will the project involve the use of **temporary** lighting *during* the active season?

No

15. Will the project install new or replace existing **permanent** lighting?

No

16. Does the project include percussives or other activities (**not including tree removal/trimming or bridge/structure work**) that will increase noise levels above existing traffic/background levels?

No

17. Are *all* project activities that are **not associated with** habitat removal, tree removal/trimming, bridge and/or structure activities, temporary or permanent lighting, or use of percussives, limited to actions that DO NOT cause any additional stressors to the bat species?

Examples: lining roadways, unlighted signage, rail road crossing signals, signal lighting, and minor road repair such as asphalt fill of potholes, etc.

Yes

18. Will the project raise the road profile **above the tree canopy**?

No

19. Is the location of this project consistent with a No Effect determination in this key?

Automatically answered

Yes, because the project action area is not within suitable Indiana bat and/or NLEB summer habitat and is outside of 0.5 miles of a hibernaculum.

20. Is the bridge removal, replacement, or maintenance activities portion of this project consistent with a No Effect determination in this key?

Automatically answered

Yes, because the bridge is more than 1,000 feet from the nearest suitable habitat and is therefore considered unsuitable for use by bats

Determination Key Description: FHWA, FRA, FTA Programmatic Consultation For Transportation Projects Affecting NLEB Or Indiana Bat

This key was last updated in IPaC on March 22, 2022. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the threatened **Northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's [February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion for Transportation Projects](#). The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

IPaC User Contact Information

Agency: Anderson Engineering, Inc.

Name: Kurt Mester

Address: 941 W. 141st Terrace, Ste A

City: Kansas City

State: MO

Zip: 64145

Email: kmester@ae-inc.com

Phone: 8167770400

Lead Agency Contact Information

Lead Agency: Department of Transportation



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Missouri Ecological Services Field Office
101 Park Deville Drive
Suite A
Columbia, MO 65203-0057
Phone: (573) 234-2132 Fax: (573) 234-2181



In Reply Refer To:

April 01, 2022

Project Code: 2022-0026991

Project Name: Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. **Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days.** The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Refer to the Midwest Region [S7 Technical Assistance](#) website for step-by-step instructions for making species determinations and for specific guidance on the following types of projects:

projects in developed areas, HUD, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

Federally Listed Bat Species

Indiana bats, gray bats, and northern long-eared bats occur throughout Missouri and the information below may help in determining if your project may affect these species.

Gray bats - Gray bats roost in caves or mines year-round and use water features and forested riparian corridors for foraging and travel. If your project will impact caves, mines, associated riparian areas, or will involve tree removal around these features – particularly within stream corridors, riparian areas, or associated upland woodlots –gray bats could be affected.

Indiana and northern long-eared bats - These species hibernate in caves or mines only during the winter. In Missouri the hibernation season is considered to be November 1 to March 31. During the active season in Missouri (April 1 to October 31) they roost in forest and woodland habitats. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 5 inches diameter at breast height (dbh) for Indiana bat, and ≥ 3 inches dbh for northern long-eared bat, that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Tree species often include, but are not limited to, shellbark or shagbark hickory, white oak, cottonwood, and maple. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, Indiana bats or northern long-eared bats could be affected.

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas;
- Trees found in highly-developed urban areas (e.g., street trees, downtown areas);
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees; and
- A stand of eastern red cedar shrubby vegetation with no potential roost trees.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of “There are no listed species found within the vicinity of the project,” then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example ["No Effect" document](#) also can be found on the S7 Technical Assistance website.
-

2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see #3 below) – then project proponents can conclude the proposed activities **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain [Life History Information for Listed and Candidate Species](#) through the S7 Technical Assistance website.
3. If IPaC returns a result that one or more federally listed bat species (Indiana bat, northern long-eared bat, or gray bat) are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** these bat species **IF** one or more of the following activities are proposed:
 - a. Clearing or disturbing suitable roosting habitat, as defined above, at any time of year;
 - b. Any activity in or near the entrance to a cave or mine;
 - c. Mining, deep excavation, or underground work within 0.25 miles of a cave or mine;
 - d. Construction of one or more wind turbines; or
 - e. Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on listed bat species. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records. An example ["No Effect" document](#) also can be found on the S7 Technical Assistance website.

If any of the above activities are proposed in areas where one or more bat species may be present, project proponents can conclude the proposed activities **may affect** one or more bat species. We recommend coordinating with the Service as early as possible during project planning. If your project will involve removal of over 5 acres of suitable forest or woodland habitat, we recommend you complete a Summer Habitat Assessment prior to contacting our office to expedite the consultation process. The Summer Habitat Assessment Form is available in Appendix A of the most recent version of the [Range-wide Indiana Bat Summer Survey Guidelines](#).

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. Should bald or golden eagles occur within or near the project area please contact our office for further coordination. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA

to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of recommendations that minimize potential impacts to migratory birds. Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed [voluntary guidelines for minimizing impacts](#).

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to [guidelines](#) developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's [Wind Energy Guidelines](#). In addition, please refer to the Service's [Eagle Conservation Plan Guidance](#), which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

Next Steps

Should you determine that project activities **may affect** any federally listed species or trust resources described herein, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

If you have not already done so, please contact the Missouri Department of Conservation (Policy Coordination, P. O. Box 180, Jefferson City, MO 65102) for information concerning Missouri Natural Communities and Species of Conservation Concern.

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Karen Herrington

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Missouri Ecological Services Field Office

101 Park Deville Drive

Suite A

Columbia, MO 65203-0057

(573) 234-2132

Project Summary

Project Code: 2022-0026991

Event Code: None

Project Name: Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement

Project Type: Bridge - Replacement

Project Description: Bridge Replacement

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.12237605,-94.15611069919683,14z>



Counties: Jackson County, Missouri

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat <i>Myotis grisescens</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949 General project design guidelines: https://ipac.ecosphere.fws.gov/project/ONEG26RAIZGEZGSA7OUSX45WGQ/documents/generated/6868.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045 General project design guidelines: https://ipac.ecosphere.fws.gov/project/ONEG26RAIZGEZGSA7OUSX45WGQ/documents/generated/6868.pdf	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- [PFO1C](#)
-

IPaC User Contact Information

Agency: Anderson Engineering, Inc.

Name: Kurt Mester

Address: 941 W. 141st Terrace, Ste A

City: Kansas City

State: MO

Zip: 64145

Email: kmester@ae-inc.com

Phone: 8167770400

MEMO TO FILE

Request Number: 2022-04-00130; LPA Project Number: BRO-B048(059); County: Jackson; Sponsor: Jackson County

Review Completed by MoDOT Contractor: 6/1/2022

Project Code: 2022-0026991

Federal Species: Gray bat, Indiana bat, northern long-eared bat

State-Listed Species/State Species of Conservation Concern: American badger within 1.0 mile of project limits

Subject: East Stoenner Road Bridge Replacement over Branch of Fire Prairie Creek

MoDOT's environmental contractor reviewed all documentation generated and submitted by the sponsor (Jackson County) and consultant (Anderson Engineering) including the USFWS IPaC Official Species List, MDC Natural Heritage Review Level 2 follow-up report, RER project description, consultant threatened and endangered species determinations, and preliminary plans. The environmental contractor also reviewed the Missouri Natural Heritage Database (NHD 2022), and Missouri Speleological Survey Cave Database (MSS 2022) for additional resource information in and around the project area. The proposed project involves the replacement of an existing, structurally deficient box culvert with a new, single-span bridge along East Stoenner Road over a branch of Fire Prairie Creek.

The USFWS IPaC lists the following species for the project area: gray bat, Indiana bat, and northern long-eared bat. There are no critical habitats located within the project limits. The MDC follow-up report indicated that there were no occurrences of state-listed species within the project limits. Occurrences of six state-ranked species of concern were identified near the project area. However, only species documented within 1 mile of the project are evaluated in this determination. Based on this distance criteria, impacts to the American badger are considered in this evaluation.

NOTE: *The IPaC species list contains the monarch butterfly (candidate for listing under the ESA). However, candidate status does not provide species protection under the listing process, and neither consultation nor conference, formal or informal, is required on Federal-aid highway projects for candidate species under the ESA Section 7 requirements. Per guidance received from USFWS on 1/5/2021, conferencing for monarchs is not required unless MoDOT is receiving funding from the USFWS. Because there is no USFWS funding associated with this project, MoDOT has not made an effects determination for this species.*

Gray bat: Gray bats are cave obligate species which congregate in maternity or bachelor colonies in the summer, utilizing dome cave and mine habitat, and mixed colonies during winter hibernation in vertical or pit-type caves and mines. Gray bats utilize stream corridors for foraging spring through fall. Gray bats have been recorded statewide except for in northwest Missouri. According to a review of the NHD, the nearest gray bat record is over 50 miles from the project limits. A review of the MSS cave database indicated that the nearest cave is located more than 10 miles from the project limits; the cave is not associated with occurrences of listed bat species. The consultant provided photos of the existing culvert for MoDOT review, indicating that there was no evidence of bat roosting (guano; staining; live/dead bats) within the structure. Due to the lack of evidence of bat roosting on the existing structure, the consultant indicated that the project would have No Effect on the gray bat. MoDOT reviewed the photos of the existing culvert and agrees there is no evidence of bat roosting. Based on the distance to the nearest gray bat occurrence and cave, and because the existing structure is not being

used by bats for roosting, MoDOT agrees that the project will have no impact on caves and will result in No Effect to the gray bat.

Indiana and northern long-eared bat: Indiana and northern long-eared bats hibernate during winter in caves and spend the breeding season in forested areas of the state where they may utilize suitable summer roost trees. Roosting and maternity habitat consists primarily of live or dead hardwood trees which have shingle-like bark, providing space for bats to roost underneath. Summer habitat for the threatened northern long-eared bat overlaps greatly with Indiana bat habitat and includes additional use of trees with splits, crevices, hollow sections, and other damage. These two species could occur anywhere in Missouri where suitable habitat exists. According to the NHD, the nearest Indiana bat and northern long-eared bat occurrences are over 30 miles and 60 miles from the project limits, respectively.

The consultant indicated that approximately 0.1-acre of tree clearing will be required to complete project activities. All tree clearing will take place within 100 feet of the existing roadway. The consultant provided photos of the trees to be removed, indicating that none of the trees have characteristics of suitable summer roosting habitat. Based on the lack of impact to suitable summer roosting habitat, the consultant indicated that the project would have No Effect on the Indiana bat and northern long-eared bat. MoDOT reviewed the provided photos and agrees that the trees to be removed do not have characteristics of suitable summer roosting habitat and that the project will have No Effect on Indiana bat and northern long-eared bat.

American badger: The American badger is a state-ranked (S3) species of conservation concern in Missouri. This species is known to inhabit prairies, open grasslands, croplands, pastures, residential areas, and parkland. As the species has fairly general habitat requirements, MDC notes that population densities typically correspond to abundance of rodents (the badger's primary food source) rather than specific habitat. According to the NHD, the nearest documented occurrence of this species is just over 1 mile from the project area, a dead specimen recorded along Fire Prairie Creek. Due to the abundance of suitable habitat immediately adjacent to the project area, the conversion of habitat resulting from the project is a relatively minor amount. Based on the limited loss of suitable habitat relative to overall habitat availability, and because habitat type is not the most limiting factor for species distribution, MoDOT has determined that no impact to American badger is anticipated as a result of the project.

Migratory birds: The consultant provided a migratory bird assessment, with photos, of the existing culvert structure. No evidence of active or inactive bird nests was present within the culverts. MoDOT reviewed the provided photos and agreed that there is no evidence of bird nesting on the existing structure. Based on this information, there are no concerns related to migratory birds or conflicts with the MBTA.

As the designated non-federal representative of FHWA for USFWS Section 7 ESA requirements, MoDOT has determined the project will have No Effect on the gray bat, Indiana bat, and northern long-eared bat. There are no state-listed/protected species or MBTA concerns.

Kyleen Kelly
Environmental Contractor
(913) 748-2620
MoDOT-Design
601 West Main Street, PO Box 270
Jefferson City, MO



From: [Kyleen Kelly](#)
To: kmester@ae-inc.com
Cc: [Mark Sowers](#); enewill@jacksongov.org; [Rachel R. Thomas](#)
Subject: TE Complete - No Effect; BRO-B048(059); Jackson; Stoenner Road bridge replacement
Date: Wednesday, June 8, 2022 10:22:00 AM
Attachments: [BRO-B048\(059\) MoDOT Effects Determination Jackson East Stoenner Road Tributary Fire Prairie Creek FINAL.pdf](#)
[image001.png](#)

Hi Kurt,

MoDOT has completed a TE review for the Stoenner Road bridge replacement project, located in Jackson County. A copy of MoDOT's effects determination document is attached to this email and has also been uploaded to the TE section of the RER. The proposed project involves the replacement of an existing, structurally deficient box culvert with a new, single-span bridge along East Stoenner Road over a branch of Fire Prairie Creek. The project will require the removal of approximately 0.1-acre of trees, all located within 100-ft of a transportation surface.

The USFWS IPaC lists the following species for the project area: gray bat, Indiana bat, and northern long-eared bat. There are no critical habitats located within the project limits. The MDC follow-up report indicated that there were no occurrences of state-listed species within the project limits. Occurrences of six state-ranked species of concern were identified near the project area. However, only species documented within 1 mile of the project were evaluated in this determination. Based on this distance criteria, impacts to the American badger were also considered.

MoDOT reviewed the consultant's TE documentation and agrees with their assessments. As the designated non-federal representative of FHWA for USFWS Section 7 ESA requirements, MoDOT has determined the project will have **No Effect on the gray bat, Indiana bat, and northern long-eared bat**. Additionally, the project **will not impact the state-ranked American badger**. Please refer to the attached document for detailed determinations for each of these species.

This completes the TE requirements for the project. Please feel free to reach out with any questions. Thanks!

Kyleen Kelly
Environmental Contractor
(913) 748-2620
MoDOT-Design
601 West Main Street, PO Box 270
Jefferson City, MO





Missouri Department of Conservation

Missouri Department of Conservation's Mission is to protect and manage the forest, fish, and wildlife resources of the state and to facilitate and provide opportunities for all citizens to use, enjoy and learn about these resources.

Natural Heritage Review Level Two Report: State Listed Endangered Species and/or Missouri Species/Natural Communities of Conservation Concern

There are records of state-listed Endangered Species, or Missouri Species or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact Missouri Department of Conservation for further coordination.

Foreword: Thank you for accessing the Missouri Natural Heritage Review Website developed by the Missouri Department of Conservation with assistance from the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, Missouri Department of Transportation and NatureServe. The purpose of this website is to provide information to federal, state and local agencies, organizations, municipalities, corporations and consultants regarding sensitive fish, wildlife, plants, natural communities and habitats to assist in planning, designing and permitting stages of projects.

PROJECT INFORMATION

Project Name and ID Number: Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement #10737

User Project Number: BRO-B048(59)

Project Description: S19 T50 R29 W, Latitude 39.1224° / Longitude -94.1561° Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement, Jackson County, Missouri

Project Type: Transportation, Structures and Bridges, Bridge Replacement and/or Removal - on existing alignment (within 12 feet up/down stream), Span

Contact Person: Gary Strack

Contact Information: gstrack@andersonengineeringinc.com or 816-777-0400

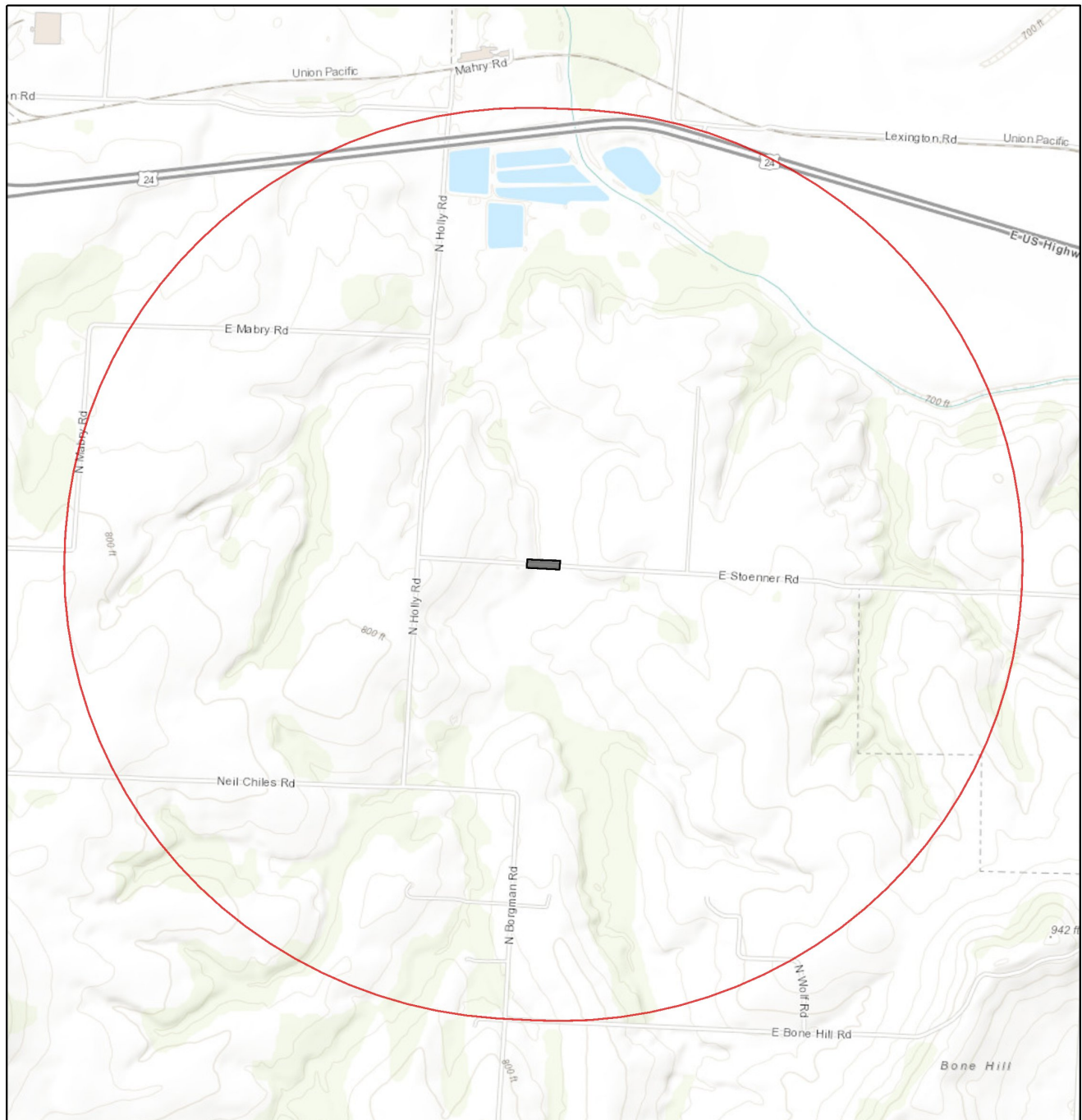
Disclaimer: The NATURAL HERITAGE REVIEW REPORT produced by this website identifies if a species tracked by the Natural Heritage Program is known to occur within or near the area submitted for your project, and shares suggested recommendations on ways to avoid or minimize project impacts to sensitive species or special habitats. If an occurrence record is present, or the proposed project might affect federally listed species, the user must contact the Department of Conservation or U.S. Fish and Wildlife Service for more information. The Natural Heritage Program tracks occurrences of sensitive species and natural communities where the species or natural community has been found. Lack of an occurrence record does not mean that a sensitive plant, animal or natural community is not present on or near the project area. Depending on the project, current habitat conditions, and geographic location in the state, surveys may be necessary. Additionally, because land use conditions change and animals move, the existence of an occurrence record does not mean the species/habitat is still present. Therefore, Reports include information about records near but not necessarily on the project site.

The Natural Heritage Report is not a site clearance letter for the project. It provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from the Natural Heritage Program into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive fish, forest and wildlife resources. However, the Natural Heritage Program is only one reference that should be used to evaluate potential adverse project impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information, and species' biological characteristics would additionally ensure that Missouri Species of Conservation Concern are appropriately identified and addressed in planning efforts.

U.S. Fish and Wildlife Service – Endangered Species Act (ESA) Coordination: Lack of a Natural Heritage Program occurrence record for federally listed species in your project area does not mean the species is not present, as the area may never have been surveyed. Presence of a Natural Heritage Program occurrence record does not mean the project will result in negative impacts. The information within this report is not intended to replace Endangered Species Act consultation with the U.S. Fish and Wildlife Service (USFWS) for listed species. Direct contact with the USFWS may be necessary to complete consultation and it is required for actions with a federal connection, such as federal funding or a federal permit; direct contact is also required if ESA concurrence is necessary. Visit the USFWS Information for Planning and Conservation (IPaC) website at <https://ecos.fws.gov/ipac/> for further information. This site was developed to help streamline the USFWS environmental review process and is a first step in ESA coordination. The Columbia Missouri Ecological Field Services Office may be reached at 573-234-2132, or by mail at 101 Park Deville Drive, Suite A, Columbia, MO 65203.

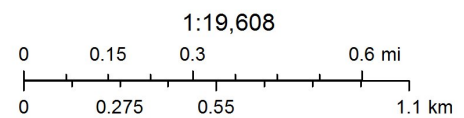
Transportation Projects: If the project involves the use of Federal Highway Administration transportation funds, these recommendations may not fulfill all contract requirements. Please contact the Missouri Department of Transportation at 573-526-4778 or visit <https://www.modot.org/> for additional information on recommendations.

Stoenner Road over Branch of Fire Prairie Creek Bridge Replacement



April 1, 2022

- Project Boundary
- Buffered Project Boundary



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Species or Communities of Conservation Concern within the Area:

There are records of state-listed Endangered Species, or Missouri Species or Natural Communities of Conservation Concern within or near the defined Project Area. Please contact the Missouri Department of Conservation for further coordination.

Email (preferred): NaturalHeritageReview@mdc.mo.gov

MDC Natural Heritage Review

Science Branch

P.O. Box 180

Jefferson City, MO

65102-0180

Phone: 573-522-4115 ext. 3182

Other Special Search Results:

Your project is near a designated Natural Area . Please contact Missouri Department of Conservation (NaturalHeritageReview@mdc.mo.gov) for further coordination.

Project Type Recommendations:

Streams in the area should be protected from soil erosion, water pollution and in-stream activities that modify or diminish aquatic habitats. See link regarding [Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers](#).

- Avoid disturbance to stream banks and riparian areas. Channel modification, flow interruption or bank modification should occur only in compliance with conditions established in permits required under the federal Clean Water Act.
- Grade and seed disturbed areas as soon as possible to minimize erosion. Native grasses and wildflowers are recommended for plantings compatible with the local native landscape and wildlife needs. Annuals like ryegrass may be combined with native perennials for quicker green-up. Avoid aggressive exotic perennials such as crown vetch and sericea lespedeza.
- All temporary in-channel fills that could impound water should be culverted. Culverts should (a) maintain at least six inches of water and (b) not create water velocities in excess of two feet per second during average annual discharges. A drop between the downstream end of the culverts and the downstream water surface should not occur at any time. Conditions provided within the USACE Clean Water Act Section 404 permit, if required (<http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/moregoffices.pdf>), should help minimize impacts to the aquatic organisms within the area.
- Avoid work in the channel from March 15 until June 15, a time when many fish are spawning and eggs need minimal disturbance.

Project Location and/or Species Recommendations:

Endangered Species Act Coordination - Indiana bats (*Myotis sodalis*, federal- and state-listed endangered) and **Northern long-eared bats** (*Myotis septentrionalis*, federal-listed threatened) may occur near the project area. Both of these species of bats hibernate during winter months in caves and mines. During the summer months, they roost and raise young under the bark of trees in wooded areas, often riparian forests and upland forests near perennial streams. During project activities, avoid degrading stream quality and where possible leave snags standing and preserve mature forest canopy. Do not enter caves known to harbor Indiana bats or Northern long-eared bats, especially from September to April. **If any trees need to be removed for your project, please contact the U.S. Fish and Wildlife Service (Ecological Services, 101 Park Deville Drive, Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132 ext. 100 for Ecological Services) for further coordination under the Endangered Species Act.**

Invasive exotic species are a significant issue for fish, wildlife and agriculture in Missouri. Seeds, eggs, and larvae may be moved to new sites on boats or construction equipment. Please inspect and clean equipment thoroughly before moving between project sites. See <https://mdc.mo.gov/community-conservation/managing-invasive-species-your-community> for more information.

- Remove any mud, soil, trash, plants or animals from equipment before leaving any water body or work area.
- Drain water from boats and machinery that have operated in water, checking motor cavities, live-well, bilge and transom wells, tracks, buckets, and any other water reservoirs.
- When possible, wash and rinse equipment thoroughly with hard spray or HOT water (>140° F, typically available at do-it-yourself car wash sites), and dry in the hot sun before using again.

Streams and Wetlands – Clean Water Act Permits: Streams and wetlands in the project area should be protected from activities that degrade habitat conditions. For example, soil erosion, water pollution, placement of fill, dredging, in-stream activities, and riparian corridor removal, can modify or diminish aquatic habitats. Streams and wetlands may be protected under the Clean Water Act and require a permit for any activities that result in fill or other modifications to the site. Conditions provided within the U.S. Army Corps of Engineers (USACE) Clean Water Act Section 404 permit (<http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx>) and the Missouri Department of Natural Resources (DNR) issued Clean Water Act Section 401 Water Quality Certification (<http://dnr.mo.gov/env/wpp/401/index.html>), if required, should help minimize impacts to the aquatic organisms and aquatic habitat within the area. Depending on your project type, additional permits may be required by the Missouri Department of Natural Resources, such as permits for stormwater, wastewater treatment facilities, and confined animal feeding operations. Visit <http://dnr.mo.gov/env/wpp/permits/index.html> for more information on DNR permits. Visit both the USACE and DNR for more information on Clean Water Act permitting.

For further coordination with the Missouri Department of Conservation and the U.S. Fish and Wildlife Services, please see the contact information below:

Email (preferred): NaturalHeritageReview@mdc.mo.gov
MDC Natural Heritage Review
Science Branch
P.O. Box 180
Jefferson City, MO
65102-0180
Phone: 573-522-4115 ext. 3182

U.S. Fish and Wildlife Service
Ecological Service
101 Park Deville Drive
Suite A
Columbia, MO
65203-0007
Phone: 573-234-2132

Miscellaneous Information

FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia, Missouri 65203-0007; Phone 573-234-2132; Fax 573-234-2181) for consultation.

STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and that are protected under the Wildlife Code of Missouri (RSMo 3 CSR 1 0). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR 10-4.111. Species tracked by the Natural Heritage Program have a "State Rank" which is a numeric rank of relative rarity. Species tracked by this program and all native Missouri wildlife are protected under rule 3CSR 10-4.110 General Provisions of the Wildlife Code.

See [Missouri Species and Communities of Conservation Concern Checklist \(mo.gov\)](#) for a complete list of species and communities of conservation concern. Detailed information about the animals and some plants mentioned may be accessed at [Missouri Fish and Wildlife Information System \(MOFWIS\)](#). Please contact the Missouri Department of Conservation to request printed copies of any materials linked in this document.

Mark Sowers

From: Kyle E. Grayson
Sent: Friday, July 1, 2022 10:06 AM
To: Mark Sowers
Subject: RE: Requested Action - NEPA Concurrence; RER#2022-04-00130, KC, B048059, EAST STOENNER RD null,JACKSON , Desired Date: 5/8/2022

Mark,

I concur with a PCE #28 NEPA Classification for the subject project. Have a great 4th of July.

Kyle Grayson, MoDOT
573-526-5648

From: Mark Sowers <Mark.Sowers@modot.mo.gov>
Sent: Friday, July 1, 2022 9:59 AM
To: Kyle E. Grayson <Kyle.Grayson@modot.mo.gov>
Subject: RE: Requested Action - NEPA Concurrence; RER#2022-04-00130, KC, B048059, EAST STOENNER RD null,JACKSON , Desired Date: 5/8/2022

Hi Kyle,

I am requesting concurrence with my NEPA classification of PCE for the project linked below. The project includes demolition and replacement of a structurally deficient box culvert with a new, single-span bridge over a branch of Fire Prairie Creek on East Stoenner Road (Jackson County). The project will require 0.42 acre of permanent easement and 0.34 acre temporary easement (no new right of way required). The TE Species, Cultural Resources, and Public Lands sections of the RER have been cleared and public involvement information has been provided. I am waiting to issue the All Env Issues Cleared date until the approved floodplain development permit and Section 404 permit are uploaded to the RER.

I believe the project applies for a PCE based on Criteria #28 of the PCE Agreement. Let me know if you agree. Thanks!

Mark Sowers
Environmental Contractor
913.485.7822
MoDOT-Design
601 West Main Street, PO Box 270
Jefferson City, MO



From: no-reply@modot.mo.gov <no-reply@modot.mo.gov>
Sent: Friday, April 8, 2022 12:56 PM
To: Aaron Ball <Aaron.Ball@modot.mo.gov>; Jo A. Dent <Jo.Dent@modot.mo.gov>; Charlotte Drinkard <Charlotte.Drinkard@modot.mo.gov>; Eric Fuselier <Eric.Fuselier@modot.mo.gov>; Kyle E. Grayson <Kyle.Grayson@modot.mo.gov>; Elizabeth Heavrin <Elizabeth.Heavrin@modot.mo.gov>; Amy Keigher <Amy.Keigher@modot.mo.gov>; Kyleen Kelly <Kyleen.Kelly@modot.mo.gov>; Andrew Martin <Andrew.Martin@modot.mo.gov>; Alyssa Reynolds <Alyssa.Reynolds@modot.mo.gov>; Melissa Scheperle <Melissa.Scheperle@modot.mo.gov>; Mark Sowers <Mark.Sowers@modot.mo.gov>; Rachel R. Thomas

<Rachel.Thomas@modot.mo.gov>

Subject: New RER#2022-04-00130, KC, B048059, EAST STOENNER RD null,JACKSON , Desired Date: 5/8/2022

kmester@andersonengineeringinc.com has created the following environmental request with a desired date of 5/8/2022, your attention is required for Request# [2022-04-00130 - Project Number: B048059](#)



March 30, 2022

Gary Strack, PE
Anderson Engineering
941 W. 141st St. Suite A
Kansas City, MO 64145

RE: Lead and Asbestos Inspection of Stoenner Road Bridge BRO-B048(49) Buckner, Jackson County, MO.

Dear Mr. Strack:

Mustardseed Cultural and Environmental Services, LLC (MCE) was contracted by Anderson Engineering to perform an asbestos inspection and lead based paint of the E. Stoenner Road Bridge in Jackson County, Missouri. The inspection took place March 25, 2022.

The purpose of the inspection was to identify and quantify asbestos-containing materials (ACM) and lead-based paint (LBP) that could be impacted during work on the subject structures. The asbestos survey of the subject property was performed utilizing the NESHAPS and ASTM assessment, sampling, and analytical protocol. The LBP inspection was conducted in accordance with all applicable local and State regulations. Radiation safety procedures as required by the U.S. Nuclear Regulatory Commission and applicable State and Local regulations were followed when using an XRF. This report letter should only be used for the purposes of interpreting the presence of lead-based (LBP) at the aforementioned structure and should not be used for any lead-related risk assessment purposes. **No lead-based paint or suspect asbestos containing material was found on the structure.** Appendix A contains inspector certification for Mr. Jake Nelson. A photographic log is located in Appendix B.

ASBESTOS INSPECTION

The asbestos inspection and sampling followed all applicable State of Missouri, USEPA and ASTM regulations and guidelines and was performed by a State of Missouri licensed asbestos inspector. Asbestos containing materials contain asbestos greater than 1 percent (>1%). ACM is characterized as friable or nonfriable asbestos. Friable asbestos is any material that can be crumbled, pulverized, or reduced to a powder by hand pressure when dry.

Common sources of ACM in bridges were inspected: coatings on concrete, mastic, transite pipe, felt/fiberboard bearing material, rail post isolator pads, coatings on wood and timber, and caulk. Suspect ACM was found on both bridges, one sample from each bridge was collected. One potential ACM sample, road surfacing tar, from each bridge was collected. The tar was analyzed by QuanTEM Laboratories a NVLAP accredited polarized light microscopy (PLM) laboratory. **No suspect asbestos containing material was observed.**

In the event that additional suspect asbestos containing materials (i.e., coatings on concrete, mastic, transite pipe, felt/fiberboard bearing material, rail post isolator pads, coatings on wood and timber, and caulk, etc.) are discovered in previously inaccessible areas during demolition/construction activities, bulk samples should be collected to determine the presence of asbestos.



LEAD BASED PAINT INSPECTION

Upon arriving on-site, the LBP inspector examined the bridge/culvert and **no painted surfaces were observed.**

Any painted surfaces, substrates, and components not specifically tested should be assumed to contain lead-based-paint unless tested and proven otherwise.

MCE also recommends that a copy of this report be provided to contractors that may conduct work on the bridges.

GENERAL COMMENTS

The results, findings, conclusions and recommendations expressed in this report are based on conditions observed during MCE's survey of the structure, E. Stoenner Road BRO-B048(49) culvert in Jackson County, MO. The information contained in this report is relevant to the date on which these surveys were performed, and should not be relied and upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by Anderson Engineering for specific application to their project as discussed. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. MCE does not warrant the work of regulatory agencies, laboratories or other third parties supplying information that may have been used in the preparation of this report. No warranty, expressed or implied is made.

Respectfully,

Timberlyn Smith, CHMM
Project Manager

Jake Nelson
Inspector



APPENDIX A
CERTIFICATES

CERTIFICATION NUMBER:

2MOMPR20338

THIS CERTIFIES

Jacob P Nelson

HAS COMPLETED THE CERTIFICATION

REQUIREMENTS FOR

Environment Planner



CERTIFICATION NUMBER:

7011021022MOIR20338

THIS CERTIFIES

Jacob P Nelson

HAS COMPLETED THE CERTIFICATION

REQUIREMENTS FOR

Inspector



02/10/2022

02/15/2023

TRAINING DATE: 02/10/2022

Director of Air Pollution Control Program

APPROVED: 02/15/2022

EXPIRES: 02/15/2023

TRAINING DATE: 02/10/2022

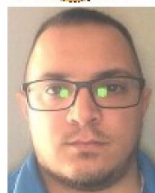
Director of Air Pollution Control Program



Missouri Department of Health
and Senior Services

Lead Occupation License - ID Badge

License Number: 190916-300005860



Lead Inspector

Jake
Nelson

Expiration Date: 9/16/2023



**APPENDIX B
PHOTOGRAPHS**

Stoenner Road West Culvert No. BRO-B048 (049)
Buckner, Missouri



DIRECTION: East	DESCRIPTION	This photo shows the guardrails and roadway over the top of the culvert.	1
	CLIENT	Anderson Engineering, Inc.	DATE: 3/25/2022
	PHOTOGRAPHER	Jake Nelson	



DIRECTION: East	DESCRIPTION	This photo shows the guardrails attached on the north side of the culvert.	2
	CLIENT	Anderson Engineering, Inc.	DATE: 3/25/2022
	PHOTOGRAPHER	Jake Nelson	

Stoenner Road West Culvert No. BRO-B048 (049)
Buckner, Missouri



DIRECTION: East	DESCRIPTION	This photo shows the water over the bottom of the culvert along with middle support and east-side wall.	3
	CLIENT	Anderson Engineering, Inc.	DATE: 3/25/2022
	PHOTOGRAPHER	Jake Nelson	



DIRECTION: South	DESCRIPTION	This photo shows the underside of the roadway.	4
	CLIENT	Anderson Engineering, Inc.	DATE: 3/25/2022
	PHOTOGRAPHER	Jake Nelson	

**SUBSURFACE EXPLORATION
AND
GEOTECHNICAL ENGINEERING REPORT**

**E STOENNER RD BRIDGE REPLACEMENT
0.3 MILE EAST OF N. HOLLY RD AND E. STOENNER RD
JACKSON COUNTY, MO**

**GARY STRACK, PE
ANDERSON ENGINEERING
941 W 141ST TERRACE, SUITE A
KANSAS CITY, MISSOURI 64145**

KCTE PROJECT NO. G20-21-215

5/2/2022



**SITE EXPLORATION
AND
GEOTECHNICAL ENGINEERING REPORT**

**E STOENNER RD BRIDGE REPLACEMENT
0.3 MILE EAST OF N. HOLLY RD AND E. STOENNER RD
JACKSON COUNTY, MO**

KCTE NO. G20-21-215

Submitted to: Gary Strack, PE
Anderson Engineering
941 W 141st Terrace
Suite A, Kansas City, MO 64145

Submitted by: Kansas City Testing and Engineering, LLC
1141 Southwest Blvd
Kansas City, KS 66103

Prepared by: 
Clay Rathbun
Geotechnical Service Manager

Reviewed by: 
Scott E. Martens, P.E.
Vice President



TABLE OF CONTENTS

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Appendices

Appendix A	Project and Boring Location Map
Appendix B	Boring Logs and Laboratory Data
Appendix C	General Notes and Soil Classification

1.0 INTRODUCTION

Kansas City Testing & Engineering, LLC (KCTE) has completed the subsurface exploration for the proposed construction of a new bridge located on E. Stoenner Road, 0.3 miles east of North Holly Road, Jackson County, Missouri.

The purpose of this geotechnical exploration was to identify the soil strata, on-site soil physical properties, and provide geotechnical recommendations for the proposed construction.

2.0 PROJECT AND SITE DESCRIPTION

KCTE understands that the project will consist of a new single span bridge, with minimal grading required on each abutment. The site is located as depicted in the Appendix A Site Location Map. The boring locations are depicted in Appendix A Boring Location Map.

3.0 FIELD EXPLORATION PROGRAM

The site subsurface conditions were explored with 4 borings located in proximity to the boring plan in Appendix A. The boring locations and numbers were selected by KCTE and approved by the client. Elevations of the boring were not provided.

The borings were drilled and sampled to depths of 30 feet to 63.5 feet. The borings were drilled using a CME 55 rotary drill rig. Soil samples were obtained from the borings during the drilling process using standard penetration, split-barrel sampling techniques (ASTM D 1586), or by Thin Wall Sampling techniques (Shelby Tube). Sample depths are indicated on the attached boring logs in Appendix B .

The drill crew prepared field logs of the materials encountered during drilling. The field logs represent the conditions observed at the time of the exploration. The field logs have been edited to incorporate the results of laboratory test data.

Field samples obtained from the borings were returned to our laboratory where they were visually classified and logged. The laboratory tests consisted of unconfined compressive strength, moisture, density and Atterberg limits testing, in substantial compliance with ASTM Procedures. The test results were utilized in the development of the geotechnical recommendations.

3.1 LABORATORY TESTING PROGRAM

Laboratory testing was performed on the soil samples to estimate pertinent engineering and index properties of the materials. Results of the laboratory tests are presented in Appendix B and on the boring logs. The laboratory testing program consisted of the following:

- Visual classification (ASTM D 2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*)
- Moisture content tests (ASTM D 2216, *Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass*)

- Atterberg limits tests (ASTM D 4318, *Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*)
- Unconfined compression tests on soil (ASTM Designation D 2166, *Standard Test Method for Unconfined Compressive Strength of Cohesive Soil*)
- Hand Held Penetrometer

4.0 SUBSURFACE CONDITIONS

KCTE has explored the subsurface conditions of the project site at selected boring locations that represent future bridge construction. The following sections describe the findings of our field exploration, laboratory testing and visual classification of the field samples.

This section presents a general summary of the materials encountered in the borings. Specific subsurface conditions encountered at the boring locations are presented on the respective boring logs in Appendix B. The stratification lines shown on the logs represent the approximate boundaries between material types; in many cases the transitions have been estimated.

4.1 SOIL STRATA

Stratum	Depth	Description	Comment
Stratum 1	0- 8"	Road Surface (2" Asphalt) with 6" of base	Present in all Boring
Stratum 2	8"-62 ft	Lean Brown Silty Clay Very Soft to Stiff	Present in all Boring

The soils that were sampled at the boring locations typically consisted of asphalt road surface with subbase extending to a depth of 8", overlying very soft to stiff lean clay. Moderately hard shale was encountered at a depth of 62 feet in boring B-4.

The blow counts or "n" number from the field split spoon testing indicate this material is of very soft to stiff nature and characteristics are clay like.

4.2 BEDROCK OBSERVATIONS

Moderately hard gray shale bedrock was encountered at 62 feet in boring B-4. Based on this boring it is estimated that the bedrock surface is nearly horizontal in the area,

4.3 GROUNDWATER OBSERVATIONS

Groundwater was observed in the borings at a depth of 20 feet to 35 feet at the time of drilling exploration. The borings were backfilled upon completion.

Our observations are based on the conditions encountered only at the actual boring locations at the time of drilling. Due to the low permeability of the clay soils encountered in the borings, a

relatively long period of time may be required for a groundwater level to develop and stabilize in a borehole. Long term observations in piezometers or observation wells may be required to define groundwater levels in these materials or at this site.

Also, it should be understood that the level of groundwater might fluctuate at other times of the year depending upon climatic and rainfall conditions, and river elevations. Groundwater levels may be different during construction or at other times during the life of the project.

5.0 ANALYSIS AND RECOMMENDATIONS – DEEP FOUNDATIONS

The site conditions indicate that the creek channel is flowing on a lean silty clay bedding. The elevation of the creek bottom at the existing bridge location is unknown. Originally the site was planned for RCB construction, but soft soils were encountered. It is anticipated that a new single span bridge will be constructed at this site.

KCTE recommends a deep foundation system of driven steel H-piles should be considered for the bridge abutments at this site. Deep foundations could draw their support from side friction in overburden soils or end bearing on the shale bedrock surface at a depth of 62 feet below the existing roadway elevation.

Deep foundations such as driven piles draw their axial capacity from the side friction between the overburden soil and the pile surface. Our borings indicate that the overburden soil consistency under each abutment of the proposed bridge is different. The subsurface soils on the east abutment are much softer and will not be able to provide adequate skin friction resistance for the piles to achieve desired capacities. The west abutment subsurface conditions are marginally better than the east abutment, however, in order to mitigate differential settlements between the two abutments, a similar and consistent foundation system be adopted for both the abutments. It is therefore recommended that a system of driven H-pile in end bearing on the shale bedrock be adopted for the foundations of this bridge. To penetrate bedrock without damage to the pile tip, the tips of the piles should be reinforced with driving shoes (driving points).

Deep foundations founded in end bearing in the shale bedrock should be designed for an allowable contact pressure of 10 ksf. For end bearing in rock, the pile capacities may be limited by the structural capacity of the steel section. Caution should be exercised during pile driving so that the maximum stress at the tip of the steel pile does not exceed 12 ksi. It is recommended that the tip of the deep foundations should penetrate at least 12 inches into the shale bedrock. Due to the soft nature of the overburden soils, for steel H-piles the bearing area should be the area of cross-section of the steel section.

Information regarding lateral loading on the abutment pile was not provided to us. The pile lengths will be on the order of 63 feet.

5.1 ESTIMATED SETTLEMENTS

For piles end bearing in bedrock designed in accordance with the above recommendations, the anticipated settlements (other than elastic shortening of the pile) will be negligible, less than 1/2 inch.

We understand the roadway grades will be kept the same as existing and there will be minimal fill depths placed for the approaches. With minimal approach fill depths we do not anticipate significant down drag on the abutment piles.

5.2 GROUP EFFECT

To minimize group effect of piles, the minimum pile spacing for end bearing piles should be 3 times the diameter of the pile.

5.3 SEISMIC DESIGN CONSIDERATIONS

The 2018 International Building Code requires a site class for the calculation of earthquake design forces. This class is a function of soil type (i.e., depth of soil and strata types). Based on the subsurface conditions of the site and the estimated shear strength properties of the materials in the upper 100 feet, Site Class “E” (i.e., Soft Clay Soil) is recommended for this project.

Due to the clayey nature of the soil deposits, confinement of the soft layers and low seismic hazard, the potential for liquefaction of the subsurface soils is very low.

We have not performed site-specific seismic hazard analysis or site-specific seismic design parameters analysis. If required these analyses can be provided by KCTE.

5.4 CONTROLLED FILL

As discussed earlier, we understand minimal fill depths will be required for the approaches. Fill material placed on site for grade adjustment and backfills should be lean clay material well compacted to at least 95% of the materials standard proctor density and a moisture content in the range of -2 to +3% of optimum moisture content. (ASTM D 698).

5.5 DRAINAGE AND MAINTENANCE

Pavements should be sloped to provide rapid drainage of surface water away from the structure. Water that is allowed to accumulate on or adjacent to foundations could saturate the subgrade and contribute to settlement or heave.

5.6 EXCAVATION AND TRENCHES

All temporary slopes and excavations should conform to Occupational Safety and Health Administration (OSHA) Standards for the Construction Industry (29 CFR Part 1026, Subpart P).

Excavations in the native soils should be possible with conventional excavation equipment. Excavation in shale bedrock for end-bearing for cast-in-place piers penetration should be possible with standard drilled pier rigs. The contractor should review the boring logs to determine the appropriate method(s) for excavation at this site.

All excavations should be kept dry during subgrade preparation. Storm water runoff should be controlled and removed to prevent severe erosion of the subgrade and eliminate free standing

water. Subgrade that has been rendered unsuitable from erosion or excessive wetting should be removed and replaced with controlled fill.

6.0 GENERAL COMMENTS

This report is presented in broad terms to provide an assessment of the subsurface conditions and their potential effect on the adequate design and economical construction of the proposed development. Any changes in the design or location of the proposed streets or utilities should be assumed to invalidate the conclusions and recommendations given in this report until we have had the opportunity to review the changes and, if necessary, modify our conclusions and recommendations accordingly. It is recommended that the geotechnical engineer be afforded the opportunity of a general review of the final design plans and specifications prior to construction in order to determine if they are consistent with the conclusions and recommendations given in this report. For this project, these geotechnical document review services will be provided as part of the geotechnical report cost. Particular details of foundation design, construction specifications or quality control may develop, and we would be pleased to respond to any questions that you may have regarding these details.

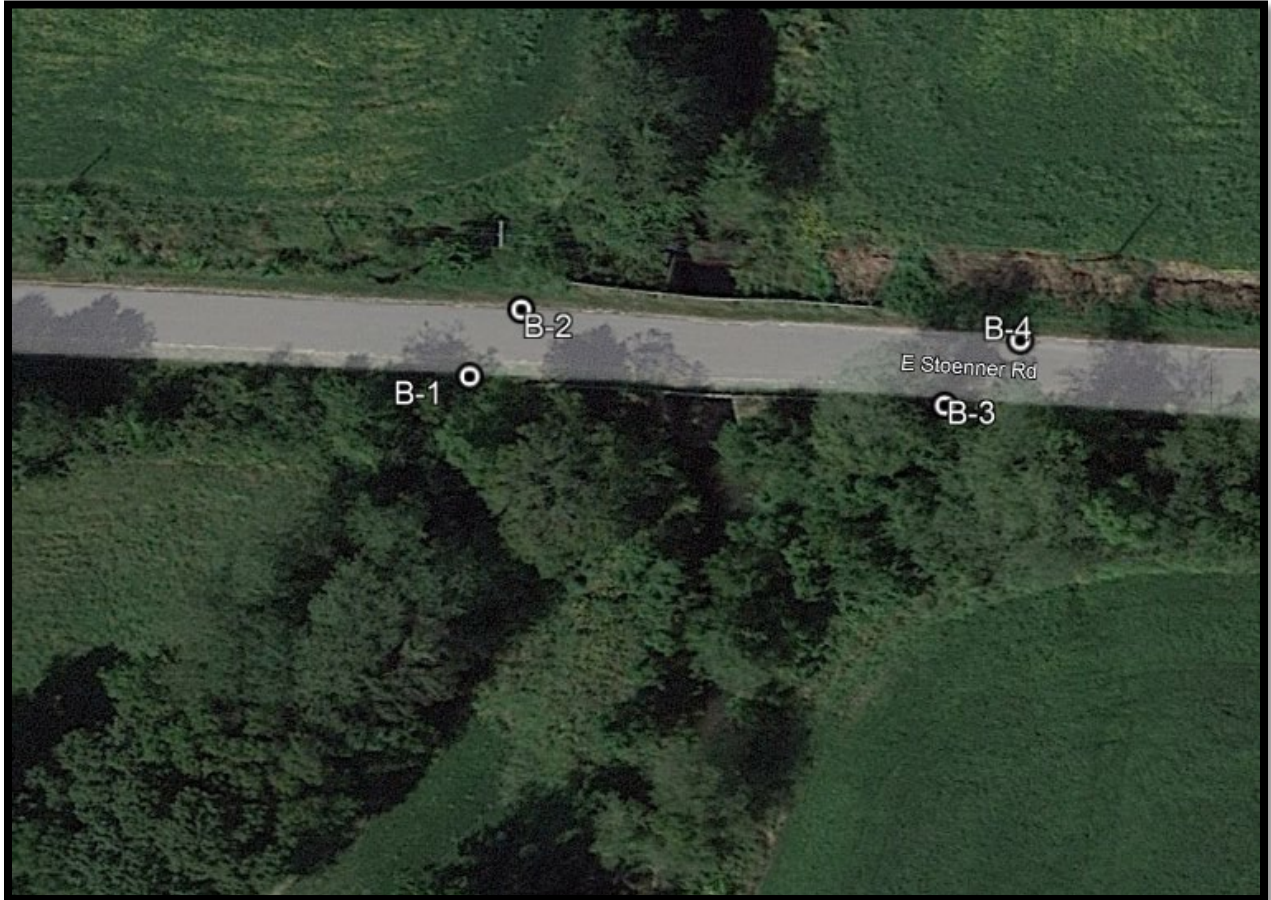
The scope of our services did not include any environmental assessment or investigation for the presence of hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site.

APPENDIX A

SITE AND BORING LOCATIONS MAPS



SITE LOCATION MAP



BORING LOCATION MAP



APPENDIX B

BORING LOGS AND LABORATORY DATA



Kansas City Testing and Engineering, LLC
1141 Southwest Blvd.
Kansas City, KS 66103
Tel: 913-321-8100
Fax: 913-321-8181

BORING NUMBER B-1

PAGE 1 OF 2

CLIENT <u>Anderson Engineering</u>	PROJECT NAME <u>E Stoenner Rd</u>
PROJECT NUMBER <u>G20-21-215</u>	PROJECT LOCATION <u>.3 Mile East of N Holly Road and E Stoenner Road, Jackson</u>
DATE STARTED <u>12/13/21</u> COMPLETED <u>12/13/21</u>	GROUND ELEVATION _____ HOLE SIZE <u>6 inches</u>
DRILLING CONTRACTOR _____	GROUND WATER LEVELS:
DRILLING METHOD <u>3.25 Inch Hollow Stem Auger</u>	<u>▽</u> AT TIME OF DRILLING <u>35.00 ft</u>
LOGGED BY _____ CHECKED BY _____	AT END OF DRILLING <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

Depth	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOWS (N COUNT)	RECOVERY % (RQD)	UNCONF. COMPR. (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			Pocket Pen. (tsf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALT 2"										
		CRUSHED LIMESTONE BASE										
		(CL) LEAN CLAY, MEDIUM STIFF TO VERY STIFF	SPT 1	3-5-7 (12)	67			24.0				
		Drk brown clay, stiff										
5		Drk brown clay, medium stiff	SPT 2	5-3-3 (6)	78			21.3				
		Brown clay, stiff	SPT 3	3-4-5 (9)	56			25.3				
10		Brown clay, medium stiff	SPT 4	3-3-4 (7)	61			25.6				
15		Grey and orange clay, medium stiff	SPT 5	3-4-4 (8)	100			21.1				
20		Grey and orange clay, medium stiff	SPT 6	0-3-4 (7)	78			23.8				
25		Grey clay, stiff	SPT 7	3-4-5 (9)	33			22.2				
30		Grey and orange clay with sand, very stiff	SPT 8	7-8-10 (18)	44			19.6				
35		Tan clay, stiff	SPT 9	6-7-8 (15)	89			24.9				

(Continued Next Page)

GEOTECH BH COLUMNS - GINT STD US LAB.GDT - 12/23/21 09:32 - C:\USERS\NATALIE SPANGLER\KANSAS CITY TESTING AND ENGINEERING LLC\KANSAS CITY TESTING & ENGINEERING - PROJECTS\2021\4.0 GEO PROJECTS\G20-21-



Kansas City Testing and Engineering, LLC
1141 Southwest Blvd.
Kansas City, KS 66103
Tel: 913-321-8100
Fax: 913-321-8181

BORING NUMBER B-1

PAGE 2 OF 2

CLIENT Anderson Engineering PROJECT NAME E Stoenner Rd
PROJECT NUMBER G20-21-215 PROJECT LOCATION .3 Mile East of N Holly Road and E Stoenner Road, Jackson

Depth	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOWS (N COUNT)	RECOVERY % (RQD)	UNCONF. COMPR. (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			Pocket Pen. (tsf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
35		(CL) LEAN CLAY, MEDIUM STIFF TO VERY STIFF (continued)										
40		Tan clay, stiff	SPT 10	7-5-6 (11)	100			30.0				
45		Grey-brown mottled clay, stiff	SPT 11	4-4-5 (9)	67			35.0				
50		Grey shaley clay @ 50ft, stiff	SPT 12	4-8-5 (13)	100			51.2				

Bottom of borehole at 50.0 feet.

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Fax: 913-321-8181

BORING NUMBER B-2

PAGE 1 OF 1

CLIENT Anderson Engineering
PROJECT NUMBER G20-21-215
DATE STARTED 12/13/21 **COMPLETED** 12/13/21
DRILLING CONTRACTOR
DRILLING METHOD 3.25 Inch Hollow Stem Auger
LOGGED BY **CHECKED BY**
NOTES

PROJECT NAME E Stoenner Rd
PROJECT LOCATION .3 Mile East of N Holly Road and E Stoenner Road, Jackson
GROUND ELEVATION **HOLE SIZE** 6 inches
GROUND WATER LEVELS:
AT TIME OF DRILLING --- 20ft
AT END OF DRILLING ---
AFTER DRILLING ---

Depth	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOWS (N COUNT)	RECOVERY % (RQD)	UNCONF. COMPR. (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			Pocket Pen. (tsf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALT 3"										
		CRUSHED LIMESTONE BASE										
		(CL) LEAN CLAY, STIFF to VERY STIFF Drk brown clay, stiff	SPT 1	4-5-7 (12)	67			21.2				
5		Drk grey clay, medium stiff	SPT 2	3-4-6 (10)	89			27.8				
		Grey clay, stiff	SPT 3	4-5-5 (10)	61			24.9				
10		Grey clay, stiff	SPT 4	5-5-7 (12)	72			25.0				
15		Grey and brown clay with iron staining, stiff	SPT 5	6-7-9 (16)	83			22.3				
20		Grey and orange clay with iron straining, stiff	SPT 6	8-7-7 (14)	33			20.2				
25			SPT 7	4-4-5 (9)	56			21.3				
30		Grey and orange clay with iron straining, stiff	SPT 8	8-9-9 (18)	78			21.3				

Bottom of borehole at 30.0 feet.

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BORING NUMBER B-3

PAGE 1 OF 1

CLIENT	Anderson Engineering	PROJECT NAME	E Stoenner Rd
PROJECT NUMBER	G20-21-215	PROJECT LOCATION	.3 Mile East of N Holly Road and E Stoenner Road, Jackson
DATE STARTED	12/14/21	COMPLETED	12/14/21
DRILLING CONTRACTOR		GROUND ELEVATION	
DRILLING METHOD	Wash Bore	HOLE SIZE	4 inches
LOGGED BY		CHECKED BY	
NOTES			
		GROUND WATER LEVELS:	
		▽ AT TIME OF DRILLING	20.00 ft
		AT END OF DRILLING	---
		AFTER DRILLING	---

Depth	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOWS (N COUNT)	RECOVERY % (RQD)	UNCONF. COMPR. (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			Pocket Pen. (tsf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALT 3"										
		CRUSHED LIMESTONE BASE										
		(CL) LEAN CLAY, VERY SOFT TO STIFF	SPT 1	4-5-7 (12)	67			22.0				
		Drk brown clay, stiff										
5		Grey clay, stiff	ST 2		83	2306	96	26.4	49	25	24	
10		Grey clay, stiff	SPT 3	5-3-5 (8)	78			21.7				
15		Grey clay, stiff	SPT 4	8-9-9 (18)	67			25.3				
20		Grey clay, very soft	SPT 5	2-1-1 (2)	44			29.0				
25		Grey clay, soft	SPT 6	2-1-3 (4)	33			32.0				
30		Grey and orange clay with iron straining, stiff	SPT 7	3-3-6 (9)	83			32.2				

Bottom of borehole at 30.0 feet.

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BORING NUMBER B-4

PAGE 1 OF 2

CLIENT Anderson Engineering **PROJECT NAME** E Stoenner Rd
PROJECT NUMBER G20-21-215 **PROJECT LOCATION** .3 Mile East of N Holly Road and E Stoenner Road, Jackson
DATE STARTED 12/15/21 **COMPLETED** 12/15/21 **GROUND ELEVATION** _____ **HOLE SIZE** 4 inches
DRILLING CONTRACTOR _____ **GROUND WATER LEVELS:**
DRILLING METHOD Wash Bore ☒ **AT TIME OF DRILLING** 20.00 ft
LOGGED BY _____ **CHECKED BY** _____ **AT END OF DRILLING** ---
NOTES _____ **AFTER DRILLING** ---

Depth	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOWS (N COUNT)	RECOVERY % (RQD)	UNCONF. COMPR. (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			Pocket Pen. (tsf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALT 2"										
		CRUSHED LIMESTONE BASE										
		(CL) LEAN CLAY, VERY SOFT TO STIFF	SPT 1	4-5-7 (12)	78			25.0				
		Drk brown clay, stiff										
5		Drk brown clay, stiff	SPT 2	2-3-8 (11)	89			27.2				
		Brown clay, stiff										
10		Brown clay, stiff	SPT 3	4-5-5 (10)	100			23.1				
15		Grey clay, stiff	SPT 4	7-7-9 (16)	67			23.6				
20		Grey clay, very soft (WOH)	SPT 5	0-0-0 (0)	44			29.7				
25		Grey clay, very soft (WOH)	SPT 6	0-0-1 (1)	33			28.5				
30		Grey clay, stiff	SPT 7	2-4-5 (9)	83			28.2				
35		Grey clay, soft	SPT 8	2-2-2 (4)	100			31.8				

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BORING NUMBER B-4

PAGE 2 OF 2

CLIENT Anderson Engineering PROJECT NAME E Stoenner Rd
PROJECT NUMBER G20-21-215 PROJECT LOCATION .3 Mile East of N Holly Road and E Stoenner Road, Jackson

Depth	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOWS (N COUNT)	RECOVERY % (RQD)	UNCONF COMPR. (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			Pocket Pen. (tsf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
35		(CL) LEAN CLAY, VERY SOFT TO STIFF (continued)										
40		Grey clay, soft	SPT 9	2-2-2 (4)	78			40.0				
45		Grey clay, medium stiff	SPT 10	3-4-4 (8)	100			26.1				
50		Grey clay, becoming shaley @ 50ft, soft	SPT 11	2-2-2 (4)	78			27.2				
55		Grey shaley clay, very stiff	SPT 12	5-8-15 (23)	33							
60												
65		SHALE, BLACK, MODERATELY HARD, SAMPLER REFUSAL AT 63.5	SPT 13	100	11							

Refusal at 63.5 feet.
Bottom of borehole at 65.0 feet.

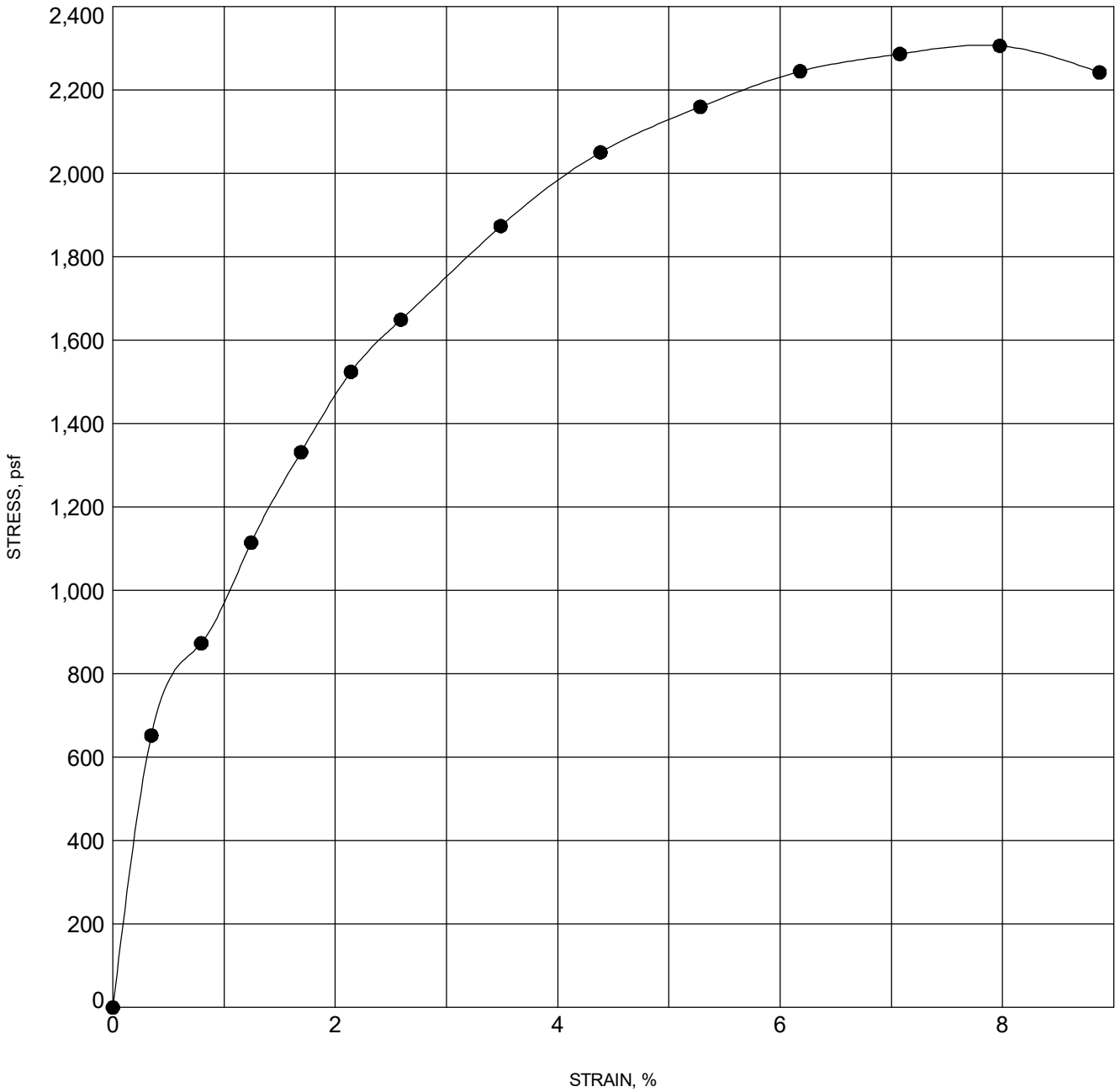
UNCONFINED - GINT STD US LAB.GDT - 12/23/21 09:33 - C:\USERS\NATALIE SPANGLER\KANSAS CITY TESTING AND ENGINEERING LLC\KANSAS CITY TESTING & ENGINEERING - PROJECTS\2.0 ACTIVE PROJECTS\2021\4.0 GEO PROJECTS\G20-21-215 E STOENNER RD



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UNCONFINED COMPRESSION TEST

CLIENT Anderson Engineering PROJECT NAME E Stoenner Rd
PROJECT NUMBER G20-21-215 PROJECT LOCATION .3 Mile East of N Holly Road and E Stoenner Road, Jackson Co.



BOREHOLE		DEPTH	Classification	γ_d	MC%
●	B-3	3.0	Stiff (CL) Lean Clay	96	26



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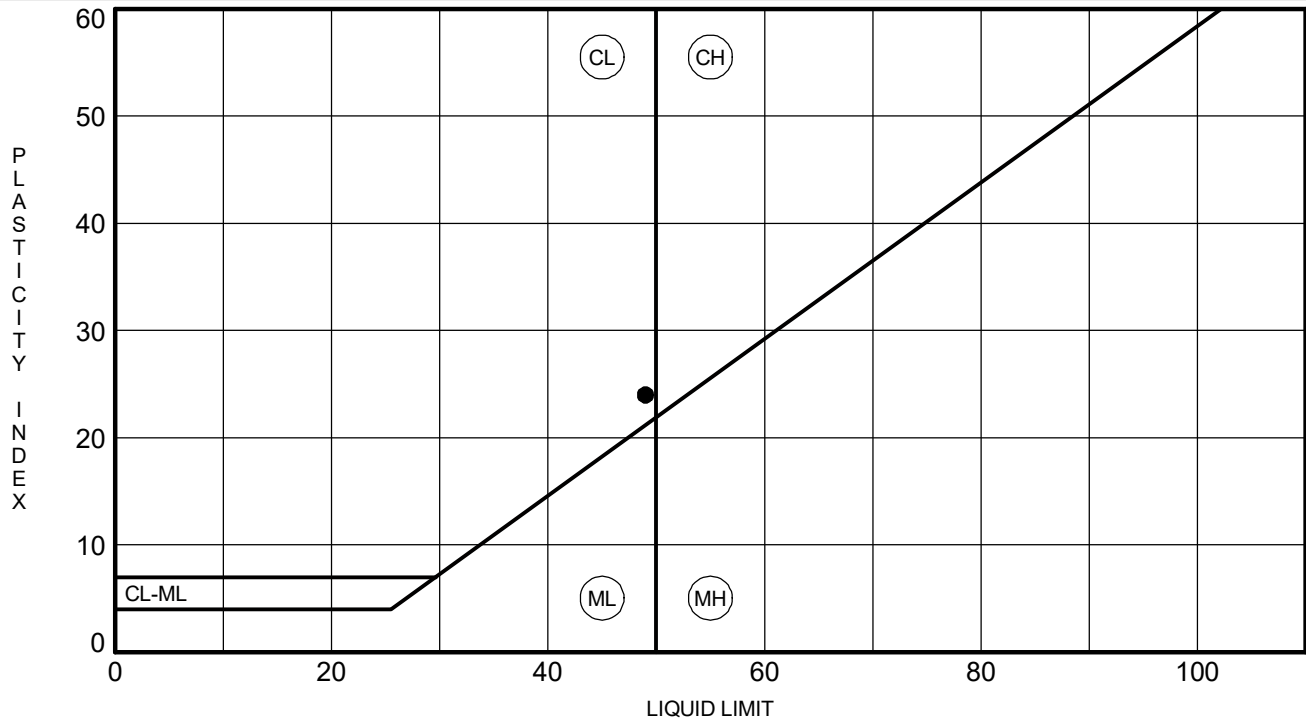
ATTERBERG LIMITS' RESULTS

CLIENT Anderson Engineering

PROJECT NAME E Stoenner Rd

PROJECT NUMBER G20-21-215

PROJECT LOCATION .3 Mile East of N Holly Road and E Stoenner Road, Jackson Co.

[illegible]



APPENDIX C

GENERAL NOTES AND SOIL CLASSIFICATIONS

DRILLING AND SAMPLING SYMBOLS

WATER LEVEL MEASUREMENTS

ATD	At Time of Drilling
EOD	End of Drilling
AD	After Drilling

TEXTURE

Soil descriptions are based on the Unified Soil Classification System (USCS) as outlined in ASTM D 2487 and D 2488. The USCS group symbol on the boring logs corresponds to the group names listed below. The descriptions include soil constituents, consistency or relative density, color and other appropriate descriptive terms. Geologic description of bedrock, when encountered, also is shown in the description column.

COHESIONLESS SOILS

CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH		PLASTICITY	RELATIVE DENSITY	N VALUE	
	(psf)	(kPa)				Liquid Limit, %
Very Soft	< 500	< 24	Lean	< 45	Very Loose	0 - 3
Soft	500-1000	24-48	Lean to Fat	45 - 49	Loose	4 - 9
Medium Stiff	1001-2000	49-96	Fat	> 50	Medium Dense	10 - 29
Stiff	2001-4000	97-192			Dense	30 - 49
Very Stiff	4001-8000	193-383			Very Dense	> 49
Hard	> 8001	> 384				

ROCK QUALITY DESIGNATION (RQD)**

**RQD is defined as the total length of sound core pieces, 4 inches (102 mm) or greater in length, expressed as a percentage of the total length cored. RQD provides an indication of the integrity of the rock mass and relative extent of seams and bedding planes.

DEGREE OF WEATHERING

Slightly Weathered	Slight decomposition of parent material.
Weathered	Well developed and decomposed.
Highly Weathered	Highly decomposed, may be extremely broken.

SOLUTION AND VOID CONDITIONS

Solid	Contains no voids.
Vuggy	Containing small cavities < 1/2 " (13mm)
Porous	Containing numerous voids, may be interconnected.
Cavernous	Containing cavities, sometime large.

When classification of bedrock materials has been estimated from disturbed samples, core samples and petrographic analysis may reveal other rock types.

HARDNESS & DEGREE OF CEMENTATION

LIMESTONE

Hard	Difficult to scratch with knife.
Moderately Hard	Scratch with knife but not fingernail.
Soft	Can be scratched with fingernail.

SHALE

Hard	Scratch with knife but not fingernail.
Moderately hard	Can be scratched with fingernail.
Soft	Can be molded easily with fingers.

SANDSTONE

Well Cemented	Capable of scratching with a knife.
Cemented	Can be scratched with knife.
Poorly Cemented	Can be broken easily with fingers.

BEDDING CHARACTERISTICS

<i>TERM</i>	<i>THICKNESS, INCHES (MM)</i>
Very Thick Bedded	> 36 (915)
Thick Bedded	12-36 (305-915)
Medium Bedded	4-12 (102-305)
Thin Bedded	1-4 (25-102)
Very Thin Bedded	0.4-1 (10-25)
Laminated	0.1-0.4 (2.5-10)
Thinly Laminated	< 0.1 (<2.5)

Bedding Planes - Planes dividing layers, beds or strata of rocks.

Joint - Fracture in rock, usually vertical or transverse to bedding.

Seam - Applies to bedding plane with unspecified weathering.

CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES

ASTM Designation: D 2487 – 11
(Based on Unified Soil Classification System)

MAJOR DIVISIONS				GROUP SYMBOL	GROUP NAME
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines	$Cu \geq 4$ and $1 \leq Cc \leq 3^E$	GW	Well graded gravel ^F
			$Cu < 4$ and/or $1 > Cc > 3^E$	GP	Poorly graded gravel ^F
		Gravels with Fines More than 12% fines	Fines classify as ML or MH	GM	Silty gravel ^{F GH}
			Fines classify as CL or CH	GC	Clayey gravel ^{F GH}
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines	$Cu \geq 6$ and $1 \leq Cc \leq 3^E$	SW	Well-graded sand ^I
			$Cu < 6$ and/or $1 > Cc > 3^E$	SP	Poorly graded sand ^I
		Sands with Fines More than 12% fines	Fines classify as ML or MH	SM	Silty Sand ^{G HI}
			Fines classify as CL or CH	SC	Clayey sand ^{G HI}
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic	$PI > 7$ and plots on or above "A" line	CL	Lean clay ^{K LM}
			$PI < 4$ or plots below "A" line	ML	Silt ^{K LM}
		Organic	<u>Liquid limit – oven dried</u> Liquid limit – not dried < 0.75	OL	Organic clay ^{K LMN} Organic silt ^{K LMO}
			PI plots on or above "A" line	CH	Fat clay ^{K LM}
	Silts and Clays Liquid limit 50 or more	Inorganic	PI plots below "A" line	MH	Elastic silt ^{K LM}
		Organic	<u>Liquid limit – oven dried</u> Liquid limit – not dried < 0.75	OH	Organic clay ^{K LMO} Organic silt ^{K LMO}
Highly organic soils	Primarily organic matter, dark in color, and organic odor			PT	Peat

^A Based on the material passing the 3-in. (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay

^D Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay

^E $Cu = D_{60}/D_{10}$ $Cc = (D_{30})^2 / (D_{10} \times D_{60})$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel", whichever is predominant.

^L If solid contains $\geq 30\%$ plus No. 200, predominantly sand, add "sandy" to group name.

^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



Public Water District No. 16 of Jackson County, Missouri

Standard Specifications for Water Main Construction

Construction Documents Project Manual

January 2020

HDR Project No. 10165028

HDR Engineering, Inc.
10450 Holmes Road, Suite 600
Kansas City, MO 64131
816-347-1100

MISSOURI CERTIFICATE OF AUTHORITY #: 000856



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1 **SECTION 01010**
2 **SUMMARY OF WORK**

3 **PART 1 - GENERAL**

4 **1.1 SUMMARY**

5 A. Work is as shown on the plans consisting of water main, fire hydrant, valves, meters and other
6 related appurtenances.

7 B. Related Sections include but are not necessarily limited to:

8 1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.

9 2. Division 01 - General Requirements.

10 **1.2 WORK TO BE PERFORMED**

11 A. Base Bid: This project includes the relocation of water main, valves, hydrants, and other water
12 main appurtenances as shown on the plans.

13 **1.3 WORK BY OWNER**

14 A. The Owner has not scheduled other construction activities for the duration of this project.

15 **1.4 OWNER OCCUPANCY**

16 A. Owner's personnel will continue to operate and maintain the existing facilities throughout the
17 Project work. Contractor shall coordinate his activities with the Owner and his representative in
18 such a manner as to assure minimum interference.

19 **1.5 OWNER-FURNISHED EQUIPMENT**

20 A. Not Applicable.

21 **1.6 SALVAGED MATERIALS**

22 A. Not Applicable.

23 **1.7 PROJECT UTILITY SOURCES**

24 A. Water: Owner.

25 B. Electricity: Evergy

26 C. Gas: Spire

27 **1.8 OWNER'S SALES TAX EXEMPTION NUMBER**

28 A. Will be provided.

29 **PART 2 - PRODUCTS – NOT APPLICABLE TO THIS SECTION**

30 **PART 3 - EXECUTION**

31 **3.1 WORK RESTRICTIONS**

32 A. See Section 01040 for detailed requirements.

33 **END OF SECTION**
34

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SECTION 01040
SEQUENCING

PART 1 - GENERAL

1.1 SUMMARY

- A. Related Sections include but are not necessarily limited to:
1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 2. Division 01 - General Requirements.

1.2 RELATED WORK AT SITE

- A. General: Include sequencing constraints specified herein as a part of progress schedule.

1.3 UTILITY NOTIFICATION AND COORDINATION

- A. Coordinate the Work with various utilities within Project limits.
- B. Notify applicable utilities prior to commencing Work, if damage occurs, or if conflicts or emergencies arise during Work.

1.4 PROJECT MILESTONES

- A. Include milestones specified herein as a part of the progress schedule.

1.5 FACILITY OPERATIONS

- A. Continuous operation of Owner's water mains and meeting all permit requirements at all times are of critical importance.
1. Schedule and conduct activities to enable existing water mains to operate continuously, unless otherwise specified.
 2. Limit shut down for tie ins to existing water mains to a single 4 HR period per tie in.
 3. Coordinate with the Owner for the water main shutdown, providing at least 72 HRS notice to both the Owner and Engineer.
 4. Shutdowns shall not be scheduled or permitted on Mondays or Fridays.
- B. Do not, under any circumstances, close lines, open or close valves, or take other action which would affect the operation of existing water mains and water tower, except as specifically required by the Contract Documents and only after authorization by the Owner. Such authorization will be considered within 72 HRS after receipt of Contractor's written request.
- C. Do not proceed with Work affecting a facility's operation without obtaining Owner's advanced approval of the need for and duration of such Work.

1.6 ADJACENT FACILITIES AND PROPERTIES

- A. Examination:
1. After Effective Date of the Agreement and before Work at site is started, Contractor, Engineer, and affected property owners and utility owners shall make a thorough examination of pre-existing conditions including existing buildings, structures, and other improvements in vicinity of Work, as applicable, which could be damaged by construction operations.
 - a. Pictures will be taken to document existing conditions.
 - b. Areas outside the vicinity of Work, such as access roads shall be inspected and photographed by the Contractor for record.
 - c. Any damages to these areas will be the responsibility of the Contractor.

- 1 2. Periodic reexamination shall be jointly performed to include, but not limited to, cracks in
- 2 structures, settlement, leakage, and similar conditions.
- 3 B. Documentation:
- 4 1. Record and submit documentation of observations made on examination inspections in
- 5 accordance with paragraph CONSTRUCTION PHOTOGRAPHS.
- 6 2. Upon receipt, Engineer will review, sign, and return one record copy of documentation to
- 7 Contractor to be kept on file in field office.
- 8 3. Such documentation shall be used as indisputable evidence in ascertaining whether and to
- 9 what extent damage occurred as a result of Contractor's operations, and is for the protection
- 10 of adjacent property owners, Contractor, and Owner.

11 **1.7 CONSTRUCTION PHOTOGRAPHS**

- 12 A. Photographically document the pre-construction conditions of the site.
- 13 B. Photography shall be by a photographer experienced in shooting interior/exterior construction
- 14 photos, in daylight and nighttime conditions, and in good and inclement weather.
- 15 C. Printing and/or Film handling and development shall be done by a commercial laboratory.
- 16 D. Engineer shall have the right to select the subject matter and vantage point from which
- 17 photographs are to be taken.
- 18 E. Pre-construction:
- 19 1. After Effective Date of the Agreement and before Work at site is started take sufficient
- 20 exposures of construction site and property adjacent to perimeter of construction site.
- 21 2. Particular emphasis shall be directed to structures both inside and outside the site.
- 22 3. Format: 35 mm or digital.
- 23 F. Color Prints:
- 24 1. Minimum Size: 3 IN by 5 IN.
- 25 2. Finish: Glossy.
- 26 3. Label Each Print:
- 27 a. Project Name.
- 28 b. Date and time photo was taken.
- 29 c. Photographer's name.
- 30 d. Caption (maximum 30 characters).
- 31 e. Location and area designation.
- 32 f. Schedule activity number, as appropriate.
- 33 4. Assemble in bound albums in clear plastic sleeves that facilitate viewing.
- 34 5. Assemble negatives or image data files in their corresponding album in clear plastic sleeves
- 35 made for the purpose.

36 **1.8 REFERENCE POINTS AND SURVEYS**

- 37 A. Construction staking shall be completed by the Contractor and include staking of benchmarks,
- 38 pipe tees, pipe bends, meter vault, blow off assembly, parking area corners, and access road
- 39 centerline with offsets.
- 40 B. Contractor's Responsibilities:
- 41 1. Provide survey and layout required to layout the Work.
- 42 2. Retain professional land surveyor registered in the state of Missouri who shall perform or
- 43 supervise surveying necessary for construction staking and layout.
- 44 3. Check and establish exact location of existing facilities prior to construction of new
- 45 facilities and any connections thereto.
- 46 4. In the event of discrepancy in existing facility locations, request clarification before
- 47 proceeding with Work.
- 48 5. Maintain complete accurate log of survey Work as it progresses as a Record Document.
- 49 6. On request of Owner, submit documentation.

PART 2 - PRODUCTS – NOT APPLICABLE TO THIS SECTION

PART 3 - EXECUTION

3.1 SALVAGE OF MATERIALS – NOT APPLICABLE

3.2 CUTTING, FITTING, AND PATCHING

- A. Obtain prior written authorization of Engineer before commencing Work to cut or otherwise alter:
 - 1. Structural or reinforcing steel, structural column or beam, elevated slab, trusses, or other structural member.
 - 2. Weather, or moisture resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
- B. Refinish surfaces to provide an even finish:
 - 1. Refinish continuous surfaces to nearest intersection.
 - 2. Refinish entire assemblies.
 - 3. Finish restored surfaces to such planes, shapes, and textures that no transition between existing work and Work is evident in finished surfaces.
- C. Restore existing work, Underground Facilities, and surfaces that are to remain in completed Work including concrete-embedded piping, conduit, and other utilities as specified and as shown.
- D. Make restorations with new materials and appropriate methods as specified for new Work of similar nature; if not specified, use recommended practice of manufacturer or appropriate trade association.
- E. Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces and fill voids.
- F. Remove specimens of installed Work for testing when requested by Engineer.

END OF SECTION

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SECTION 01060
SPECIAL CONDITIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Administrative and procedural requirements for:
 - a. Preconstruction Conference.
 - b. Drawings and Contract Documents for Contractor use.
 - c. Project photographs.
 - d. Testing.
 - e. Schedule of Values.
 - f. Project meetings.
 - g. Special considerations related to adjacent properties and facilities.
 - h. Historical and archaeological finds.
- B. Related Sections include but are not necessarily limited to:
1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 2. Division 01 - General Requirements.

1.2 PRECONSTRUCTION CONFERENCE

- A. A preconstruction conference shall be held at the Consolidated Public Water Supply District No. 1 office after award of Contract:
1. Engineer will notify the Contractor as to the date and time of the conference 2 weeks in advance of the proposed date.
 2. Contractor's Project Manager and Project Superintendent and Contractor's Subcontractor Representatives shall attend.

1.3 DRAWINGS AND CONTRACT DOCUMENTS FOR CONTRACTOR USE

- A. Refer to General Conditions.
- B. Contractor shall pick up all "no-charge" documents within 10 days from date of Notice to Proceed.
- C. Additional documents after "no-charge" documents will be furnished to Contractor at cost.

1.4 PROJECT PHOTOGRAPHS

- A. See Section 01040, Item 1.7.

1.5 TESTING

- A. Payment for Soil, Concrete and Other Testing:
1. Soils, concrete, and other testing: Required testing, testing procedures, reports, certificates, and costs associated with all phases of securing required satisfactory test information which may be required by individual Specification Sections or Drawings are the full responsibility of the Contractor.

1.6 SCHEDULE OF VALUES

- A. Where a Contract is awarded on a lump sum basis, the Contractor shall file with the Engineer a balanced price segregation of the lump sum bid into items similar to the various subdivisions of the general and detailed specifications, the sum of which shall equal the lump sum bid:

1. The cost of various materials shall be furnished upon request of the Engineer, and such data will then be used as a basis for making progress estimates.
 2. Breakdown costs, itemized by Specification Section and trade, and distribute cost to individual applicable units and structures.
 3. Where structures, units, equipment or other components are identified by a specific series or, identification number, utilize said designation throughout cost breakdown.
 4. Provide detailed breakdown for individual yard piping or conduit runs and identify approximate quantities involved to satisfaction of the Engineer.
 5. Provide separate breakdown for change order items requested.
 6. Provide an additional breakdown sheet, equivalent to EJCDC document C620, Page 4 of 4, showing the tabulation format for stored materials.
 7. Submit this sheet each month with Contractor's pay request breakdown.
 8. The detail and format of cost breakdown and stored materials tabulation sheet shall be fully approved by Engineer.
- B. A reasonable allocation of the Contract Price to the component parts of the Work will be approved if component parts of the Work have values assigned to them that are well-balanced with respect to relative values for similar work established by published estimating guides:
1. Unless otherwise agreed to at the Preconstruction Conference, Means Estimator Guide or other similar nationally recognized estimating guide shall be used for resolving differences between Engineer's and Contractor's opinions of allocation of values.
 2. Consent of Surety: If Contractor and Engineer cannot mutually agree on a Schedule of Values, Engineer will approve a Schedule of Values approved by the Surety providing the Performance Bond.
- C. Contractor's costs shall not govern the allocation of values when application of Contractor's costs to a component part of the Work results in any other component part or combination of component parts being under-valued in relation to conventional estimating guides.
- D. Schedule of Values shall be agreed upon prior to first Application for Payment.

1.7 PROJECT MEETINGS

- A. Construction Meetings:
1. The Engineer will conduct construction meetings involving:
 - a. Contractor's project manager.
 - b. Contractor's project superintendent.
 - c. Owner's designated representative(s).
 - d. Engineer's designated representative(s).
 - e. Contractor's subcontractors as appropriate to the Work in progress.
 - f. Owner's Construction Quality Control Consultant.
 2. Meetings will be conducted every month.
 3. The Engineer will take meeting minutes and submit copies of meeting minutes to participants and designated recipients identified at the Preconstruction Conference. Corrections, additions or deletions to the minutes shall be noted and addressed at the following meeting.
 4. The Engineer will schedule meetings for most convenient time frame.
 5. The Engineer will have available at each meeting full chronological files of all previous meeting minutes.
 6. The Contractor shall have available at each meeting up-to-date record drawings.

1.8 SPECIAL CONSIDERATIONS RELATED TO ADJACENT PROPERTIES AND FACILITIES

- A. Contractor shall be responsible for negotiations of any waivers or alternate arrangements required to enable transportation of materials to the site.

- 1 B. Maintain conditions of access road to site such that access is not hindered as the result of
2 construction related deterioration. Provide daily sweeping of hard-surface roadways to remove
3 soils tracked onto roadway.

4 **1.9 HISTORICAL AND ARCHAEOLOGICAL**

- 5 A. If during the course of construction, evidence of deposits of historical or archeological interest is
6 found, the Contractor shall cease operations affecting the find and shall notify Owner:
7 1. No further disturbance of the deposits shall ensue until the Contractor has been notified by
8 Owner that Contractor may proceed.
9 2. Owner will issue a notice to proceed after appropriate authorities have surveyed the find and
10 made a determination to Owner.
11 3. Compensation to the Contractor, if any, for lost time or changes in construction resulting
12 from the find, shall be determined in accordance with changed or extra work provisions of
13 the Contract Documents.
14 4. The site has been previously investigated and has no known history of historical or
15 archaeological finds.

16 **PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SECTION)**

17 **PART 3 - EXECUTION - (NOT APPLICABLE TO THIS SECTION)**

18 **END OF SECTION**
19

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SECTION 01270
MEASUREMENT FOR PAYMENT/UNIT PRICES

PART 1 - GENERAL

1.1 QUANTITIES AND UNIT PRICES

- A. The quantities as given in the Bid Form are not guaranteed to be the exact or total quantities required for the completion of the Work shown on the drawings and described in the specifications.
1. Increases or decreases may be made over or under the Bid Form estimated quantities to provide for needs that are determined by the Owner during the process of the Work.
 2. Contract unit prices shall apply to such increased or decreased quantities.
 3. The Bidder is warned against unbalancing his bid, since the unit prices will apply to deductions as well as additions.
 4. The Owner has the privilege of omitting or adding to the quantity of any unit items in the Bid Form.
- B. The Contractor agrees that he will make no claim for damages, anticipated profits, or otherwise, on account of any difference between the amounts of Work actually performed and materials actually furnished and the estimated amounts thereof. The Owner will not pay for or be responsible for unused materials which may have been ordered by the Contractor in accordance with the estimated quantities listed in the Bid Form.
- C. It is the intent of the Contract Documents that all costs in connection with the Work, including furnishing of all materials, equipment, supplies and appurtenances; providing all construction plant, equipment, and tools; and performing of all necessary labor to fully complete the Work, shall be included in the unit and lump sum prices named in the Bid Form.
1. No item of Work that is required by the Contract Documents for the proper and successful completion of the Contract will be paid for outside of or in addition to the prices submitted in the Bid Form.
 2. All Work not specifically set forth in the Bid Form as a pay item shall be considered a subsidiary obligation of the Contract, and all cost in connection therewith shall be included in the prices named in the Bid Form.
- D. Even though the details for measurement and payment of a particular item are outlined in the following articles, if said item does not appear in the Bid Form, or if said item is a part of another item listed in the Bid Form, it will not be measured for payment.
- E. Whenever in the Bid Form there is a discrepancy between unit prices and extensions or totals, the unit prices will govern, and the extensions or totals will be corrected accordingly.
- F. Items for payment will be measured in accordance with the stipulations of these specifications and as further shown on the drawings. Pay limits given are maximum, and where actual quantities of work items are less than as computed by said pay limits, the Contractor will be paid only for the actual quantities.
- G. Payment will be made as the sum of the following:
1. Final authorized quantity of each item in the Bid Form multiplied by the contract unit price therefore.
 2. Lump sum payment for each item so listed in the Bid Form, at the contract lump sum price therefore.
 3. Any special payment or adjustment, plus or minus, as provided for in the General Conditions.

1.2 PAY ITEMS

A. Pipe Lines:

1. Payment will be based on a Unit Price per linear foot. Measurement will be on top of the ground along the centerline of the pipe without deductions for space occupied by valves and fittings.
 - a. Pipe will be classified according to size and type as contained in the Bid Form.
 - b. Restoration of improved or unimproved surfaces shall be considered incidental.
 - c. No partial payment on installed line will be made until initial cleanup is completed.
 - d. Initial cleanup shall include rough grading, removing material unsuitable for backfill, and repairing fences sufficient for use by the property owner.
2. The Contractor shall be responsible for the cost of water associated with testing, flushing, and chlorinating.

B. Highway and Railroad Bores: Payment will be based on a Unit Price per lineal foot complete. Included shall be furnishing of casing, all excavation and backfill, tunneling, boring and jacking necessary to install the required casing, carrier pipe (i.e., water line), marking posts, and all incidental work required to complete the installation.

C. Horizontal Directional Drilling: Payment will be based on a Unit Price per lineal foot complete. Included shall be all excavation and backfill, tunneling, boring and jacking necessary to install that required water pipe, marking posts, and all incidental work required to complete the installation.

D. Pipe Fittings (Furnished and Installed):

1. No separate payment will be made for fittings.
2. They shall be included as part of the per lineal foot unit payment for pipe line installation.

E. Valves and Valve Boxes: Payment will be based on a Unit Price for each aggregate system consisting of valve, valve box and lid, classified according to type and size.

F. Fire Hydrant Assembly: Payment will be based on a unit price for each aggregate system consisting of tee, isolation valve, fire hydrant assembly, and associated fittings and restraint.

G. Main Line Connections:

1. Each main line connection shall be paid for on a Lump Sum basis.
2. It shall include all tees, reducers, couplings, fittings, specials and shall include all branch lines that are not part of the stationed main line.

H. Service Line Pipe:

1. Payment shall be based on a Unit Price per lineal foot measured along the top of the ground along the centerline of the pipe.
2. Connections including main line taps, meter connections, and connections to existing service lines shall be considered incidental.

I. Service Meter Assembly: Payment shall be based on a Unit Price for each assembly, complete.

J. Pavement Restoration:

1. Payment shall be paid by the lineal foot of pavement installed over a water main and each side of manhole excavation within pavement in the direction of the sewer main.
2. Width of pavement restoration is not to be measured, for payment, as width will vary by Contractor's means and methods.

K. Incidental Items:

1. Dewatering pumping, trenching, backfilling, general construction, shoring, sheeting, rock excavation, barricades, lights, protection of private and public property, road resurfacing, etc., all work of the nature of the above enumerated items as specified herein will not be measured directly for payment.
2. This work shall be considered incidental to installation of bid items, and the cost of such work shall be included in the prices bid for bid items.

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SECTION 01340
SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Mechanics and administration of the submittal process for:
 - a. Shop Drawings.
 - b. Samples.
 - c. Miscellaneous submittals.
 - 2. General content requirements for Shop Drawings.
- B. Related Sections include but are not necessarily limited to:
 - 1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 - 2. Division 01 - General Requirements.
 - 3. Sections in Division 02 through 16 identifying required submittals.

1.2 DEFINITIONS

- A. Shop Drawings:
 - 1. See General Conditions.
 - 2. Product data and samples are Shop Drawing information.
- B. Miscellaneous Submittals:
 - 1. Representative types of miscellaneous submittal items include but are not limited to:
 - a. Construction schedule.
 - b. Concrete, soil compaction, and pressure test reports.
 - c. HVAC test and balance reports.
 - d. Installed equipment and systems performance test reports.
 - e. Manufacturer's installation certification letters.
 - f. Instrumentation and control commissioning reports.
 - g. Warranties.
 - h. Service agreements.
 - i. Construction photographs.
 - j. Survey data.
 - k. Cost breakdown (Schedule of Values).

1.3 SUBMITTAL SCHEDULE

- A. Schedule of Shop Drawings:
 - 1. Submittal schedule submitted and approved within 20 days of receipt of Notice to Proceed.
 - 2. Account for multiple transmittals under any Specification Section where partial submittals will be transmitted.
- B. Shop Drawings: Submittal and approval prior to 5 percent completion.

1.4 PREPARATION OF SUBMITTALS

- A. General:
 - 1. All submittals and all pages of all copies of a submittal shall be completely legible.
 - 2. Submittals which, in the Engineer's sole opinion, are illegible will be returned without review.
- B. Shop Drawings:
 - 1. Scope of any submittal and letter of transmittal:
 - a. Limited to 1 Specification Section.

- b. Do not submit under any Specification Section entitled (in part) "Basic Requirements" unless the product or material submitted is specified, in total, in a "Basic Requirements" Section.
 2. Numbering letter of transmittal:
 - a. Include as prefix the Specification Section number followed by a series number, "-xx", beginning with "01" and increasing sequentially with each additional transmittal.
 - b. If more than 1 submittal under any Specification Section, assign consecutive series numbers to subsequent transmittal letters.
 3. Describing transmittal contents:
 - a. Provide listing of each component or item in submittal capable of receiving an independent review action.
 - b. Identify for each item:
 - 1) Manufacturer and Manufacturer's Drawing or data number.
 - 2) Contract Document tag number(s).
 - 3) Unique page numbers for each page of each separate item.
 - c. When submitting "or-equal" items that are not the products of named manufacturers, include the words "or-equal" in the item description.
 4. Contractor stamping:
 - a. General:
 - 1) Contractor's review and approval stamp shall be applied either to the letter of transmittal or a separate sheet preceding each independent item in the submittal.
 - a) Contractor's signature and date shall be wet ink signature.
 - b) Shop Drawing submittal stamp shall read "(Contractor's Name) has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval as stipulated under General Conditions Paragraph 6.17C."
 - c) Letters of transmittal may be stamped only when the scope of the submittal is 1 item.
 - 2) Submittals containing multiple independent items shall be prepared with an index sheet for each item listing the discrete page numbers for each page of that item, which shall be stamped with the Contractor's review and approval stamp. Individual pages or sheets of independent items shall be numbered in a manner that permits Contractor's review and approval stamp to be associated with the entire contents of a particular item.
 - b. Electronic stamps:
 - 1) Contractor may electronically embed Contractor's review and approval stamp to either the letter of transmittal or a separate index sheet preceding each independent item in the submittal.
 - 2) Contractor's signature and date on electronically applied stamps shall be wet ink signature.
 5. Resubmittals:
 - a. Number with original root number and a suffix letter starting with "A" on a (new) duplicate transmittal form.
 - b. Do not increase the scope of any prior transmittal.
 - c. Account for all components of prior transmittal.
 - 1) If items in prior transmittal received "A" or "B" Action code, list them and indicate "A" or "B" as appropriate. Do not include submittal information for items listed with prior "A" or "B" Action in resubmittal.
 - 2) Indicate "Outstanding-To Be Resubmitted At a Later Date" for any prior "C" or "D" Action item not included in resubmittal. Obtain Engineer's approval to exclude items.
 6. For 8-1/2 x 11 IN, 8-1/2 x 14 IN, and 11 x 17 IN size sheets, provide 3 copies of each page for Engineer plus the number required by the Contractor.
 - a. The number of copies required by the Contractor will be defined at the Preconstruction Conference, but shall not exceed 3.
 - b. All other size sheets:

- 1) Submit 1 reproducible transparency or high resolution print and 1 additional print of each Drawing until approval is obtained.
 - 2) Utilize mailing tube; do not fold.
 - 3) The Engineer will mark and return the reproducible to the Contractor for his reproduction and distribution.
7. Provide clear space (3 IN SQ) for Engineer stamping of each component defined in PREPARATION OF SUBMITTALS – Contractor Stamping.
 8. Contractor shall not use red color for marks on transmittals.
 - a. Duplicate all marks on all copies transmitted, and ensure marks are photocopy reproducible.
 - b. Outline Contractor marks on reproducible transparencies with a rectangular box.
 9. Transmittal contents:
 - a. Coordinate and identify Shop Drawing contents so that all items can be easily verified by the Engineer.
 - b. Identify equipment or material use, tag number, Drawing detail reference, weight, and other Project specific information.
 - c. Provide sufficient information together with technical cuts and technical data to allow an evaluation to be made to determine that the item submitted is in compliance with the Contract Documents.
 - d. Submit items such as equipment brochures, cuts of fixtures, product data sheets or catalog sheets on 8-1/2 x 11 IN pages. Indicate exact item or model and all options proposed.
 - e. When a Shop Drawing submittal is called for in any Specification Section, include as appropriate, scaled details, sizes, dimensions, performance characteristics, capacities, test data, anchoring details, installation instructions, storage and handling instructions, color charts, layout Drawings, rough-in diagrams, wiring diagrams, controls, weights and other pertinent data in addition to information specifically stipulated in the Specification Section.
 - 1) Arrange data and performance information in format similar to that provided in Contract Documents.
 - 2) Provide, at minimum, the detail specified in the Contract Documents.
 - f. If proposed equipment or materials deviate from the Contract Drawings or Specifications in any way, clearly note the deviation and justify the said deviation in detail in a separate letter immediately following transmittal sheet.
 10. Samples:
 - a. Identification:
 - 1) Identify sample as to transmittal number, manufacturer, item, use, type, project designation, tag number, standard Specification Section or Drawing detail reference, color, range, texture, finish and other pertinent data.
 - 2) If identifying information cannot be marked directly on sample without defacing or adversely altering samples, provide a durable tag with identifying information securely attached to the sample.
 - b. Include application specific brochures, and installation instructions.
 - c. Provide Contractor's stamp of approval on samples or transmittal form as indication of Contractor's checking and verification of dimensions and coordination with interrelated work.
 - d. Resubmit samples of rejected items.
 - C. Miscellaneous Submittals: Prepare in the format and detail specified in Specification requiring the miscellaneous submittal.

1.5 TRANSMITTAL OF SUBMITTALS

- A. Shop Drawings, Samples and Operation and Maintenance Manuals:
 1. Transmit all submittals to:

HDR Engineering, Inc.
10450 Holmes Road, Suite 600
Kansas City, MO 64131
Attn: Scott Fleming, PE

- 1 2. Utilize 2 copies of attached Exhibit "A" to transmit all Shop Drawings and samples.
- 2 3. Utilize 2 copies of attached Exhibit "B" to transmit all Operation and Maintenance Manuals.
- 3 4. All submittals must be from Contractor.
- 4 a. Submittals will not be received from or returned to subcontractors.
- 5 b. Operation and Maintenance Manual submittal stamp may be Contractor's standard
- 6 approval stamp.
- 7 5. Provide submittal information defining specific equipment or materials utilized on the
- 8 Project. Generalized product information, not clearly defining specific equipment or
- 9 materials to be provided, will be rejected.

10 B. Miscellaneous Submittals:

- 11 1. Transmit under Contractor's standard letter of transmittal or letterhead.
- 12 2. Submit in triplicate or as specified in individual Specification Section.
- 13 3. Transmit to:

HDR Engineering, Inc.
10450 Holmes Road, Suite 600
Kansas City, MO 64131
Attn: Scott Fleming, PE

- 14 4. Provide copy of letter of transmittal without attachments to Owner's Resident Project
- 15 Representative.
- 16 a. Exception for concrete, soils compaction and pressure test reports.
- 17 1) Transmit 1 copy of test reports to Resident Project Engineer.
- 18 2) Transmit 1 copy of test reports to location and individual indicated above for other
- 19 miscellaneous submittals.

20 C. Expedited Return Delivery:

- 21 1. Include prepaid express envelope or airbill in submittal transmittal package for any
- 22 submittals Contractor expects or requires express return mail.
- 23 2. Inclusion of prepaid express envelope or airbill does not obligate Engineer to conduct
- 24 expedited review of submittal.

25 D. Electronic submittals will not be accepted except for approved Operation and Maintenance

26 Manuals as required by this Specification.

27 E. Fax Transmittals:

- 28 1. Permitted on a case-by-case basis to expedite review when approved by Engineer.
- 29 2. Requires hard copy transmittal to immediately follow.
- 30 a. Engineer will proceed with review of fax transmittal.
- 31 b. Engineer's approval or rejection comments will be recorded and returned on hard copy
- 32 transmittal.
- 33 3. Provisions apply to both:
- 34 a. Initial transmittal contents.
- 35 b. Supplemental information required to make initial transmittal contents complete.

36 **1.6 ENGINEER'S REVIEW ACTION**

37 A. Shop Drawings and Samples:

- 38 1. Items within transmittals will be reviewed for overall design intent and will receive one of
- 39 the following actions:
- 40 a. A - FURNISH AS SUBMITTED.
- 41 b. B - FURNISH AS NOTED (BY ENGINEER).
- 42 c. C - REVISE AND RESUBMIT.
- 43 d. D - REJECTED.

- 1 e. E - ENGINEER'S REVIEW NOT REQUIRED.
- 2 2. Submittals received will be initially reviewed to ascertain inclusion of Contractor's approval
- 3 stamp. Submittals not stamped by the Contractor or stamped with a stamp containing
- 4 language other than that specified herein will not be reviewed for technical content and will
- 5 be returned without any action.
- 6 3. In relying on the representation on the Contractor's review and approval stamp, Owner and
- 7 Engineer reserve the right to review and process poorly organized and poorly described
- 8 submittals as follows:
- 9 a. Submittals transmitted with a description identifying a single item and found to contain
- 10 multiple independent items:
- 11 1) Review and approval will be limited to the single item described on the transmittal
- 12 letter.
- 13 2) Other items identified in the submittal will:
- 14 a) Not be logged as received by the Engineer.
- 15 b) Be removed from the submittal package and returned without review and
- 16 comment to the Contractor for coordination, description and stamping.
- 17 c) Be submitted by the Contractor as a new series number, not as a re-submittal
- 18 number.
- 19 b. Engineer, at Engineer's discretion, may revise the transmittal letter item list and
- 20 descriptions, and conduct review. Unless Contractor notifies Engineer in writing that
- 21 the Engineer's revision of the transmittal letter item list and descriptions was in error,
- 22 Contractor's review and approval stamp will be deemed to have applied to the entire
- 23 contents of the submittal package.
- 24 4. Submittals returned with Action "A" or "B" are considered ready for fabrication and
- 25 installation.
- 26 a. If for any reason a submittal that has an "A" or "B" Action is resubmitted, it must be
- 27 accompanied by a letter defining the changes that have been made and the reason for
- 28 the resubmittal.
- 29 b. Destroy or conspicuously mark "SUPERSEDED" all documents having previously
- 30 received "A" or "B" Action that are superseded by a resubmittal.
- 31 5. Submittals with Action "A" or "B" combined with Action "C" (Revise and Resubmit) or
- 32 "D" (Rejected) will be individually analyzed giving consideration as follows:
- 33 a. The portion of the submittal given "C" or "D" will not be distributed (unless previously
- 34 agreed to otherwise at the Preconstruction Conference).
- 35 1) One copy or the 1 transparency of the "C" or "D" Drawings will be marked up and
- 36 returned to the Contractor. Correct and resubmit items so marked.
- 37 b. Items marked "A" or "B" will be fully distributed.
- 38 c. If a portion of the items or system proposed are acceptable, however, the major part of
- 39 the individual Drawings or documents are incomplete or require revision, the entire
- 40 submittal may be given "C" or "D" Action.
- 41 1) This is at the sole discretion of the Engineer.
- 42 2) In this case, some Drawings may contain relatively few or no comments or the
- 43 statement, "Resubmit to maintain a complete package."
- 44 3) Distribution to the Owner and field will not be made (unless previously agreed to
- 45 otherwise).
- 46 6. Failure to include any specific information specified under the submittal paragraphs of the
- 47 Specifications will result in the submittal being returned to the Contractor with "C" or "D"
- 48 Action.
- 49 7. Calculations required in individual Specification Sections will be received for information
- 50 purposes only, as evidence calculations have been performed by individuals meeting
- 51 specified qualifications, and will be returned stamped "E. Engineer's Review Not Required"
- 52 to acknowledge receipt.

8. Transmittals of submittals which the Engineer considers as "Not Required" submittal information, which is supplemental to but not essential to prior submitted information, or items of information in a transmittal which have been reviewed and received "A" or "B" Action in a prior submittal, will be returned with Action "E. Engineer's Review Not Required."
 9. Samples may be retained for comparison purposes.
 - a. Remove samples when directed.
 - b. Include in bid all costs of furnishing and removing samples.
 10. Approved samples submitted or constructed, constitute criteria for judging completed work. Finished work or items not equal to samples will be rejected.
- B. Operation and Maintenance Manuals:
1. Engineer will review and indicate one of the following review actions:
 - a. A - ACCEPTABLE.
 - b. B - ~~FURNISH AS NOTED~~ - Not Used.
 - c. C - REVISE AND RESUBMIT.
 - d. D - ~~REJECTED~~ - Not Used.
 2. Acceptable paper copy submittals will be retained with the transmittal form returned with a request for 1 additional paper copy and 2 electronic copies on CD-ROM.
 3. Deficient submittals (paper copy and/or electronic copy) will be returned along with the transmittal form which will be marked to indicate deficient areas.

PART 2 - PRODUCTS – (NOT APPLICABLE TO THIS SECTION)

PART 3 - EXECUTION – (NOT APPLICABLE TO THIS SECTION)

END OF SECTION



EXHIBIT A

Shop Drawing Transmittal

No. _____ - _____
(Spec Section) (Series)

Project Name:		Date Received:	
Project Owner:		Checked By:	
Contractor:	HDR Engineering, Inc.	Log Page:	
Address:	Address:	HDR No.:	
		Spec Section:	
		Drawing/Detail No.:	
Attn:	Attn:	1st. Sub	ReSub.
Date Transmitted:		Previous Transmittal Date:	

Item No.	No. Copies	Description	Manufacturer	Mfr/Vendor Dwg or Data No.	Action Taken*

Remarks:

* The Action designated above is in accordance with the following legend:

A - Furnish as Submitted

B - Furnish as Noted

C - Revise and Submit

1. Not enough information for review.
2. No reproducibles submitted.
3. Copies illegible.
4. Not enough copies submitted.
5. Wrong sequence number.
6. Wrong resubmittal number.
7. Wrong spec. section.
8. Wrong form used.
9. See comments.

D - Rejected

E - Engineer's review not required

1. Submittal not required.
2. Supplemental Information. Submittal retained for informational purposes only.
3. Information reviewed and approved on prior submittal.
4. See comments.
5. Delegated Design - Submittal received as requested by the Contract Documents. The Engineer did not review the engineering or technical content of the submittal.

Engineer's review and approval is limited to determine whether items covered by this submittal will, after installation or incorporation in the Work, conform in general to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole. Any deviation from plans or specifications not depicted in the submittal or included but not clearly noted by the Contractor may not have been reviewed. Review by the Engineer shall not serve to relieve the Contractor of the contractual responsibility for any error or deviation from contract requirements.

Comments:

		By		Date	
Distribution:	Contractor	File	Field	Owner	Other

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10165028

Public Water Supply District No. 16 of Jackson County, Missouri
Standard Specifications for Water Main Construction
SUBMITTALS
01340 - 1

January 2020



Contractor's Submittal Certification

Shop Drawing Transmittal No.:

Contract/Project Name:

Company Name:

has

1. reviewed and coordinated this Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
2. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
3. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
4. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

☐ This Submittal **does not** contain any variations from the requirements of the Contract Documents.

☐ This Submittal **does** contain variations from the requirements of the Contract Documents. A separate description of said variations and a justification for them is provided in an attachment hereto identified as:

"Shop Drawing Transmittal No. _____ Variation and Justification Documentation"

Insert picture file or electronic signature of Authorized Representative

Authorized Representative

Date

SECTION 01400
QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. General:
1. Required inspection and testing services are intended to assist in the determination of probable compliance of the Work with requirements specified or indicated.
 2. These required services do not relieve the Contractor of responsibility for compliance with these requirements or for compliance with requirements of the contract documents.
- B. Related Sections include but are not necessarily limited to:
1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 2. Division 01 - General Requirements.

1.2 QUALITY ASSURANCE

- A. Qualifications for Service Agencies: Except as otherwise indicated, engage inspection and test service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories and which are recognized in the industry as specialized in the types of inspections and tests to be performed.

1.3 DEFINITIONS

- A. The requirements of this Specification Section relate primarily to customized fabrication and installation procedures, not to the production of standard products.
- B. Quality control services include inspections and tests and related actions including reports, performed by independent agencies and governing authorities, as well as directly by the Contractor.
- C. These services do not include Contract enforcement activities performed directly by the Engineer:
1. Specific quality control requirements for individual units of Work are specified in the Sections of these Specifications that specify the individual element of the Work.
 - a. These requirements, including inspections and tests, cover both production of standard products and fabrication of customized Work.
 - b. These requirements also cover quality control of the installation procedures.
 2. Inspections, tests and related actions specified in this Specification Section and elsewhere in the Contract Documents are not intended to limit the Contractor's own quality control procedures which facilitate overall compliance with requirements of the Contract Documents.
 3. Requirements for the Contractor to provide quality control services as required by the Engineer, the Owner, governing authorities or other authorized entities are not limited by the provisions of this Specification Section.

1.4 RESPONSIBILITIES

- A. Contractor Responsibilities:
1. Except where they are specifically indicated as being the Owner's responsibility, or where they are to be provided by another identified entity, inspections, tests and similar quality control services are the Contractor's responsibility; these services also include those specified to be performed by an independent agency and not directly by the Contractor.
 2. Costs for these services shall be included in the Contract Price.

3. The Contractor shall employ and pay an independent agency, testing laboratory, or other qualified firm to perform quality control services specified.
- B. Owner Responsibilities:
 1. Certain inspections, tests, and similar quality control services are specified as the Owner's responsibility.
 2. Costs for these services are not included in the Contract Price.
 3. The Owner will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform services which are the Owner's responsibility.
- C. Retest Responsibility:
 1. Where results of required inspections, tests of similar services prove unsatisfactory and do not indicate compliance of related Work with the requirements of the Contract Documents, then retests are the responsibility of the Contractor, regardless of whether the original test was the Contractor's responsibility.
 2. Retesting of Work revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on the original Work.
- D. Responsibility for Associated Services:
 1. The Contractor is required to cooperate with the independent agencies performing required inspections, tests, and similar services.
 2. Provide such auxiliary services as are reasonably requested.
 3. Notify the testing agency sufficiently in advance of operations to permit assignment of personnel.
 4. These auxiliary services include but are not necessarily limited to the following:
 - a. Providing access to the Work.
 - b. Taking samples or assistance with taking samples.
 - c. Delivery of samples to test laboratories.
 - d. Security and protection of samples and test equipment at the Project site.
- E. Coordination:
 1. The Contractor and each independent agency engaged to perform inspections, tests and similar services for the project shall coordinate the sequence of their activities so as to accommodate required services with a minimum of delay in the progress of the Work.
 2. In addition, the Contractor and each independent testing agency shall coordinate their work so as to avoid the necessity of removing and replacing work to accommodate inspections and tests.
 3. The Contractor is responsible for scheduling times for inspections, tests, taking of samples and similar activities.

1.5 SUBMITTALS

- A. General:
 1. Submit a certified written report of each inspection, test, or similar service, directly to the Engineer in triplicate.
 2. If Contractor is responsible for the service, submit a certified written report of each inspection, test, or similar service through the Contractor, in duplicate:
 - a. Report Data:
 - 1) Written reports of each inspection, test or similar service shall include, but not be limited to, the following:
 - a) Name of testing agency or test laboratory.
 - b) Dates and locations of samples and tests or inspections.
 - c) Names of individuals making the inspection or test.
 - d) Designation of the Work and test method.
 - e) Complete inspection or test data.
 - f) Test results.
 - g) Interpretations of test results.

- 1 h) Notation of significant ambient conditions at the time of sample-taking and
- 2 testing.
- 3 i) Comments or professional opinion as to whether inspected or tested Work
- 4 complies with requirements of the Contract Documents.
- 5 j) Recommendations on retesting, if applicable.

6 **1.6 SERVICES WITH EQUIPMENT AND MATERIALS FURNISHED UNDER THIS**

7 **CONTRACT**

- 8 A. Contractor shall furnish the services of qualified field personnel from the manufacturers and
- 9 suppliers of equipment and materials furnished and installed under this Contract, as required to
- 10 perform all manufacturer's field services called for in the Specifications.
- 11 B. He shall perform no Work related to the installation or operation of equipment or materials
- 12 furnished and installed under this Contract without direct observation and guidance of the
- 13 supplier's or manufacturer's field personnel (where such service is specified) unless Engineer
- 14 concurs otherwise.
- 15 C. The supplier's or manufacturer's field personnel shall perform the following:
- 16 1. Observe the erection, installation, start-up, and testing of equipment.
- 17 2. Instruct and guide Contractor in proper procedures.

18 **1.7 PLACING EQUIPMENT IN OPERATION**

- 19 A. Contractor shall place all equipment and materials installed under this Contract into successful
- 20 operation according to instructions of the supplier or manufacturer, including making of all
- 21 required adjustments, tests, operation checks, and the following:
- 22 1. Cleaning, sounding, blowing-out, flushing of water systems and other pipelines.
- 23 2. Final alignment checks and measurements made under observation of Engineer and Owner.

24 **1.8 PERFORMANCE TESTS**

- 25 A. Equipment and Materials Furnished under this Contract:
- 26 1. Refer to technical Specification Sections for acceptance testing requirements.
- 27 2. The tests will be made as set forth in the Specifications unless the interested parties
- 28 mutually agree upon some other manner of testing.

29 **PART 2 - PRODUCTS (NOT APPLICABLE TO THIS SECTION)**

30 **PART 3 - EXECUTION**

31 **3.1 REPAIR AND PROTECTION**

- 32 A. General:
- 33 1. Upon completion of inspection, testing, sample-taking, and similar services performed on
- 34 the Work, repair damaged Work.
- 35 2. Protect Work exposed by or for quality control service activities, and protect repaired Work.
- 36 3. Repair and protection is the Contractor's responsibility, regardless of the assignment of
- 37 responsibility for inspection, testing or similar services.
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39 **END OF SECTION**

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SECTION 01600
PRODUCT DELIVERY, STORAGE, AND HANDLING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Scheduling of product delivery.
 - 2. Packaging of products for delivery.
 - 3. Protection of products against damage from:
 - a. Handling.
 - b. Exposure to elements or harsh environments.
- B. Related Sections include but are not necessarily limited to:
 - 1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 - 2. Division 01 - General Requirements.
- C. Payment:
 - 1. No payment will be made to Contractor for equipment or materials not properly stored and insured or without approved Shop Drawings.
 - 2. Previous payments for items will be deducted from subsequent progress estimate(s) if proper storage procedures are not observed.

1.2 DELIVERY

- A. Scheduling: Schedule delivery of products or equipment as required to allow timely installation and to avoid prolonged storage.
- B. Packaging: Deliver products or equipment in manufacturer's original unbroken cartons or other containers designed and constructed to protect the contents from physical or environmental damage.
- C. Identification: Clearly and fully mark and identify as to manufacturer, item, and installation location.
- D. Protection and Handling: Provide manufacturer's instructions for storage and handling.

PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SECTION)

PART 3 - EXECUTION

3.1 PROTECTION, STORAGE AND HANDLING

- A. Manufacturer's Instruction:
 - 1. Protect all products or equipment in accordance with manufacturer's written directions:
 - a. Store products or equipment in location to avoid physical damage to items while in storage.
 - b. Handle products or equipment in accordance with manufacturer's recommendations and instructions.
 - 2. Protect equipment from exposure to elements and keep thoroughly dry.
 - 3. When space heaters are provided in equipment, connect and operate heaters during storage until equipment is placed in service.

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SECTION 01640
PRODUCT SUBSTITUTIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. The procedure for requesting the approval of substitution of a product that is not equivalent to a product which is specified by descriptive or performance criteria or defined by reference to one or more of the following:
 - a. Name of manufacturer.
 - b. Name of vendor.
 - c. Trade name.
 - d. Catalog number.
 2. Substitutions are not "or-equals."
 3. This Specification Section does not address substitutions for major equipment.
 - a. See "INSTRUCTIONS TO BIDDERS."
- B. Related Sections include but are not necessarily limited to:
1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 2. Division 01 - General Requirements.
- C. Request for Substitution - General:
1. Base all bids on materials, equipment, and procedures specified.
 2. Certain types of equipment and kinds of material are described in specifications by means of references to names of manufacturers and vendors, trade names, or catalog numbers. When this method of specifying is used, it is not intended to exclude from consideration other products bearing other manufacturer's or vendor's names, trade names, or catalog numbers, provided said products are "or-equals," as determined by Engineer.
 3. Other types of equipment and kinds of material may be acceptable substitutions under the following conditions:
 - a. Or-equals are unavailable due to strike, discontinued production of products meeting specified requirements, or other factors beyond control of Contractor; or,
 - b. Contractor proposes a cost and/or time reduction incentive to the Owner.

1.2 QUALITY ASSURANCE

- A. In making request for substitution or in using an approved product, Contractor represents Contractor:
1. Has investigated proposed product, and has determined that it is adequate or superior in all respects to that specified, and that it will perform function for which it is intended.
 2. Will provide same guarantee for substitute item as for product specified.
 3. Will coordinate installation of accepted substitution into Work, to include building modifications if necessary, making such changes as may be required for Work to be complete in all respects.
 4. Waives all claims for additional costs related to substitution which subsequently arise.

1.3 DEFINITIONS

- A. Product: Manufactured material or equipment.

1.4 PROCEDURE FOR REQUESTING SUBSTITUTION

- A. Substitution shall be considered only:
1. After Award of Contract.

- 1 2. Under the conditions stated herein.
- 2 B. Written request through Contractor only.
- 3 C. Transmittal Mechanics:
- 4 1. Follow the transmittal mechanics prescribed for Shop Drawings in Section 01340:
- 5 a. Product substitution will be treated in a manner similar to "deviations," as described in
- 6 Section 01340.
- 7 b. List the letter describing the deviation and justifications on the transmittal form in the
- 8 space provided under the column with the heading DESCRIPTION. Include in the
- 9 transmittal letter, either directly or as a clearly marked attachment, the items listed in
- 10 Paragraph D below.
- 11 D. Transmittal Contents:
- 12 1. Product identification:
- 13 a. Manufacturer's name.
- 14 b. Telephone number and representative contact name.
- 15 c. Specification Section or Drawing reference of originally specified product, including
- 16 discrete name or tag number assigned to original product in the Contract Documents.
- 17 2. Manufacturer's literature clearly marked to show compliance of proposed product with
- 18 Contract Documents.
- 19 3. Itemized comparison of original and proposed product addressing product characteristics
- 20 including but not necessarily limited to:
- 21 a. Size.
- 22 b. Composition or materials of construction.
- 23 c. Weight.
- 24 d. Electrical or mechanical requirements.
- 25 4. Product experience:
- 26 a. Location of past projects utilizing product.
- 27 b. Name and telephone number of persons associated with referenced projects
- 28 knowledgeable concerning proposed product.
- 29 c. Available field data and reports associated with proposed product.
- 30 5. Data relating to changes in construction schedule.
- 31 6. Data relating to changes in cost.
- 32 7. Samples:
- 33 a. At request of Engineer.
- 34 b. Full size if requested by Engineer.
- 35 c. Held until substantial completion.
- 36 d. Engineer not responsible for loss or damage to samples.

37 1.5 APPROVAL OR REJECTION

- 38 A. Written approval or rejection of substitution given by the Engineer.
- 39 B. Engineer reserves the right to require proposed product to comply with color and pattern of
- 40 specified product if necessary to secure design intent.
- 41 C. In the event the substitution is approved, the resulting cost and/or time reduction will be
- 42 documented by Change Order in accordance with the General Conditions.
- 43 D. Substitution will be rejected if:
- 44 1. Submittal is not through the Contractor with his stamp of approval.
- 45 2. Request is not made in accordance with this Specification Section.
- 46 3. In the Engineer's opinion, acceptance will require substantial revision of the original design.
- 47 4. In the Engineer's opinion, substitution will not perform adequately the function consistent
- 48 with the design intent.
- 49 E. Contractor shall reimburse Owner for the cost of Engineer's evaluation whether or not
- 50 substitution is approved.

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1 **SECTION 01710**
2 **CLEANING**

3 **PART 1 - GENERAL**

4 **1.1 SUMMARY**

5 A. Section Includes:

- 6 1. Intermediate and final cleaning of Work not including special cleaning of closed systems
7 specified elsewhere.

8 B. Related Sections include but are not necessarily limited to:

- 9 1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
10 2. Division 01 - General Requirements.

11 **1.2 STORAGE AND HANDLING**

- 12 A. Store cleaning products and cleaning wastes in containers specifically designed for those
13 materials.

14 **1.3 SCHEDULING**

- 15 A. Schedule cleaning operations so that dust and other contaminants disturbed by cleaning process
16 will not fall on newly painted surfaces.

17 **PART 2 - PRODUCTS**

18 **2.1 MATERIALS**

19 A. Cleaning Agents:

- 20 1. Compatible with surface being cleaned.
21 2. New and uncontaminated.
22 3. For Manufactured Surfaces: Material recommended by manufacturer.

23 **PART 3 - EXECUTION**

24 **3.1 CLEANING - GENERAL**

- 25 A. Prevent accumulation of wastes that create hazardous conditions.
26 B. Conduct cleaning and disposal operations to comply with laws and safety orders of governing
27 authorities.
28 C. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary
29 drains or sewers.
30 D. Dispose of degradable debris at an approved solid waste disposal site.
31 E. Dispose of nondegradable debris at an approved solid waste disposal site or in an alternate
32 manner approved by Engineer and regulatory agencies.
33 F. Handle materials in a controlled manner with as few handlings as possible.
34 G. Do not drop or throw materials from heights greater than 4 FT or less than 4 FT if conditions
35 warrant greater care.
36 H. On completion of work, leave area in a clean, natural looking condition. Remove all signs of
37 temporary construction and activities incidental to construction of required permanent Work.

I. Do not burn on-site.

3.2 INTERIOR CLEANING

A. Cleaning During Construction:

1. Keep work areas clean so as not to hinder health, safety or convenience of personnel in existing facility operations.
2. At maximum weekly intervals, dispose of waste materials, debris, and rubbish.
3. Vacuum clean interior areas when ready to receive finish painting. Continue vacuum cleaning on an as-needed basis, until substantial completion.

B. Final Cleaning:

1. Complete immediately prior to Demonstration Period.
2. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed surfaces.
3. Wipe all lighting fixture reflectors, lenses, lamps and trims clean.
4. Wash and shine glazing and mirrors.
5. Polish glossy surfaces to a clear shine.
6. Ventilating systems:
 - a. Clean permanent filters and replace disposable filters if units were operated during construction.
 - b. Clean ducts, blowers and coils if units were operated without filters during construction.
7. Replace all burned out lamps.
8. Broom clean process area floors.
9. Mop office and control room floors.

3.3 EXTERIOR (SITE) CLEANING

A. Cleaning During Construction:

1. Construction debris:
 - a. Confine in strategically located container(s):
 - 1) Cover to prevent blowing by wind.
 - 2) Haul from site minimum once a week.
 - b. Remove from work area to container daily.
2. Vegetation: Keep weeds and other vegetation trimmed to 3 IN maximum height.
3. Soils, sand, and gravel deposited on paved areas and walks:
 - a. Remove as required to prevent muddy or dusty conditions.
 - b. Do not flush into storm sewer system.

B. Final Cleaning:

1. Remove trash and debris containers from site: Re-seed areas disturbed by location of trash and debris containers.
2. Clean paved roadways.

3.4 FIELD QUALITY CONTROL

- A. Immediately prior to Demonstration Period, conduct an inspection with Engineer to verify condition of all work areas.

END OF SECTION

SECTION 02110
SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Specification Section Includes:

1. Site clearing, tree protection, stripping topsoil and demolition. Related Specification Sections include but are not necessarily limited to:
2. Division 01 - General Requirements.
3. Specification Section 02200 - Earthwork.
4. Specification Section 02260 - Topsoiling and Finished Grading.
5. Specification Section 02270 - Soil Erosion and Sediment Control.

PART 2 - PRODUCTS - (NOT APPLICABLE TO THIS SPECIFICATION SECTION)

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect existing trees and other vegetation to remain against damage:

1. Do not smother trees by stockpiling construction materials or excavated materials within drip line.
2. Avoid foot or vehicular traffic or parking of vehicles within drip line.
3. Provide temporary protection as required.

B. Repair or replace trees and vegetation damaged by construction operations:

1. Repair to be performed by a qualified tree surgeon.
2. Remove trees which cannot be repaired and restored to full-growth status.
3. Replace with new trees of minimum 4 IN caliper.

C. Owner will obtain authority for removal and alteration work on adjoining property.

3.2 SITE CLEARING

A. Topsoil Removal:

1. Strip topsoil to depths encountered:
 - a. Remove heavy growths of grass before stripping.
 - b. Stop topsoil stripping sufficient distance from such trees to prevent damage to maintain root system.
 - c. Separate from underlying subsoil or objectionable material.
2. Stockpile topsoil where directed by Engineer:
 - a. Construct storage piles to freely drain surface water.
 - b. Seed or cover storage piles to prevent erosion.
3. Do not strip topsoil in wooded areas where no change in grade occurs.
4. Borrow topsoil:
 - a. Reasonably free of subsoil, objects over 2 IN DIA, weeds, and roots.

B. Clearing and Grubbing:

1. Clear from within limits of construction all trees not marked to remain:
 - a. Include shrubs, brush, downed timber, rotten wood, heavy growth of grass and weeds, vines, rubbish, structures, and debris.
2. Grub (remove) from within limits of construction all stumps, roots, root mats, logs, and debris encountered:
 - a. Totally grub under areas to be paved.

SECTION 02224
PIPELINE UNDERCROSSINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Construction of pipe undercrossings.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Casing Pipe:
 - 1. Structural grade steel:
 - a. Minimum yield strength of 35,000 psi or greater as required by the permits.
 - 2. Wall thickness:
 - a. Minimum 0.250 IN or greater as required by the permits.
 - 3. Diameter:
 - a. Minimum of 4 IN larger than outside diameter of carrier pipe's jointing system.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General:
 - 1. Install undercrossing to meet requirements of authority or agency having jurisdiction over undercrossing.
 - 2. Observe work requirements stipulated in any permit condition.
 - 3. Consult Contract Drawings for limitation of construction right-of-way.
- B. If installation of crossing is by jacking or dry boring, the following will be required unless more rigid requirements are specified by the authority or agency having jurisdiction over the crossing:
 - 1. Diameter of the hole:
 - a. Not exceeding diameter of casing by more than 1-1/2 IN.
 - 2. Pressure grout all voids outside of casing, including abandoned or misaligned holes.
 - 3. Fill void between carrier pipe and casing wall with blow sand:
 - a. Install watertight grouted plug minimum of 1 FT deep at both ends.
 - 4. Undercrossing casing:
 - a. Full lengths.
 - b. Weld pressure tight.
 - 5. After casing is installed, band wood blocks 120 degrees apart to each length of carrier pipe to prevent displacement and pull pipe into place:
 - a. Pipe must be straight and centered in casing when in place.
 - 6. Coordinate connections to system with authority or agency having jurisdiction over the crossing.

END OF SECTION

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SECTION 02260
TOPSOILING AND FINISHED GRADING

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Topsoiling and finished grading.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.
 - 2. Specification Section 02110 - Site Clearing.
 - 3. Specification Section 02200 - Earthwork.
 - 4. Specification Section 02270 - Soil Erosion and Sediment Control.
 - 5. Specification Section 02930 - Seeding, Sodding and Landscaping.
- C. Location of Work:
 - 1. All areas within limits of grading and all areas outside limits of grading which are disturbed in the course of the work.

1.2 SITE CONDITIONS

- A. Verify amount of topsoil stockpiled and determine amount of additional topsoil, if necessary to complete work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Topsoil:
 - 1. Original surface soil typical of the area.
 - 2. Existing topsoil stockpiled under Specification Section 02110.
 - 3. Capable of supporting native plant growth.

2.2 TOLERANCES

- A. Finish Grading Tolerance: 0.1 FT plus/minus from required elevations.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Correct, adjust and/or repair rough graded areas:
 - 1. Cut off mounds and ridges.
 - 2. Fill gullies and depressions.
 - 3. Perform other necessary repairs.
 - 4. Bring all sub-grades to specified contours, even and properly compacted.
- B. Loosen surface to depth of 2 IN, minimum.
- C. Remove all stones and debris over 2 IN in any dimension.

3.2 ROUGH GRADE REVIEW

- A. Reviewed by Engineer in Specification Section 02110.

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- ACCEPTANCE**
- A. Upon completion of topsoiling, obtain Engineer's acceptance of grade and surface.
- B. Make test holes where directed to verify proper placement and thickness of topsoil.

END OF SECTION

SECTION 02270
SOIL EROSION AND SEDIMENT CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Soil erosion and sediment control.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. Erosion control standards: Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas by the United States Department of Agriculture (USDA), Soil Conservation Service, College Park, Maryland.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Straw bales, twine tied.
- B. Pipe Riser and Barrel: 16 GA corrugated metal pipe (CMP) of size indicated.
- C. Stone for Stone Filter: 2 IN graded gravel or crushed stone.
- D. Grass Seed: Annual ryegrass.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prior to General Stripping Topsoil and Excavating:
 - 1. Install perimeter dikes and swales.
 - 2. Excavate and shape sediment basins and traps.
 - 3. Construct pipe spillways and install stone filter where required.
 - 4. Machine compact all berms, dikes and embankments for basins and traps.
 - 5. Install straw bales where indicated:
 - a. Provide 2 stakes per bale.
 - b. First stake angled toward previously installed bale to keep ends tight against each other.
- B. Construct sediment traps where indicated on Drawings during rough grading as grading progresses.
- C. Temporarily seed basin slopes and topsoil stockpiles:
 - 1. Rate: 1/2 LB/1,000 SF.
 - 2. Reseed as required until good stand of grass is achieved.

3.2 DURING CONSTRUCTION PERIOD

- A. Maintain Basins, Dikes, Traps, Stone Filters, Straw Bales, etc.:
 - 1. Inspect regularly especially after rainstorms.
 - 2. Repair or replace damaged or missing items.

- 1 B. After rough grading, sow temporary grass cover over all exposed earth areas not draining into
- 2 sediment basin or trap.
- 3 C. Construct inlets as soon as possible: Excavate and tightly secure straw bales completely around
- 4 inlets as detailed on Drawings.
- 5 D. Provide necessary swales and dikes to direct all water towards and into sediment basins and
- 6 traps.
- 7 E. Do not disturb existing vegetation (grass and trees).
- 8 F. Excavate sediment out of basins and traps when capacity has been reduced by 50 percent:
- 9 Remove sediment from behind bales to prevent overtopping.
- 10 G. Topsoil and Fine Grade Slopes and Swales, etc.: Seed and mulch as soon as areas become
- 11 ready.

12 **3.3 NEAR COMPLETION OF CONSTRUCTION**

- 13 A. Eliminate basins, dikes, traps, etc.
- 14 B. Grade to finished or existing grades.
- 15 C. Fine grade all remaining earth areas, then seed and mulch.

16 **END OF SECTION**

SECTION 02502
CONCRETE PAVEMENT, SIDEWALK, AND STEPS

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
1. Concrete pavement, curb, sidewalk, and steps.
- B. Related Specification Sections include but are not necessarily limited to:
1. Division 01 - General Requirements.
 2. Specification Section 03002 - Concrete

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
1. American Association of State Highway and Transportation Officials (AASHTO):
 - a. M153, Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction (ASTM D1752).
 - b. M171, Sheet Materials for Curing Concrete (ASTM C1271).
 - c. M182, Burlap Cloth Made from Jute or Kenaf.
 - d. M213, Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types) (ASTM D1751).
 - e. M224, Use of Protective Sealers for Portland Cement Concrete.
 - f. M233, Boiled Linseed Oil Mixture for Treatment of Portland Cement Concrete.
 2. American Concrete Institute (ACI):
 - a. 305R, Hot Weather Concreting.
 - b. 306R, Cold Weather Concreting.
 3. ASTM International (ASTM):
 - a. A185, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
 - b. A615, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - c. A1064, Standard Specification for Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
 - d. C33, Standard Specification for Concrete Aggregates.
 - e. C150, Standard Specification for Portland Cement.
 - f. C174, Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores.
 - g. C309, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
 - h. D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³).
 - i. D1751, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 - j. D1752, Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.
 - k. D4253, Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
 - l. D4254, Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
 4. Federal Specification (FS):

- a. SS-S-1614, Sealants, Joint, Jet-Fuel-Resistant, Hot-Applied for Portland Cement and Tar Concrete Pavements.
- b. TT-S 00227 E, Sealing Compound: Elastomeric Type, Multi-Component (for Calking, Sealing, and Glazing in Buildings and Other Structures).

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portland Cement: ASTM C150, Type I or II.
- B. Aggregates:
 - 1. ASTM C33, gradation size #67, 3/4 IN to #4.
 - 2. Clean, crushed gravel.
- C. Water: Potable quality.
- D. Admixtures: Comply with Specification Section 03002.
- E. Reinforcing Bars: All bars shall be ASTM A615, Grade 60 except bent bars shall be ASTM A615 Grade 40.
- F. Welded Wire Reinforcement:
 - 1. ASTM A185 or ASTM A1064.
 - 2. Flat.
 - 3. Clean, free from dirt, scale, rust.
- G. Preformed Joint Filler:
 - 1. Nonextruding cork, self-expanding cork, sponge rubber or cork rubber.
 - 2. AASHTO M153 or AASHTO M213.
- H. Hot-Poured Joint Sealing Material: FS SS-S-1614.
- I. Sidewalk Joint Sealant:
 - 1. 2 compound polyurethane.
 - 2. Class A, Type 1.
 - 3. Self-leveling.
 - 4. Nontracking.
 - 5. FS TT-S 00227 E(3).
- J. Membrane Curing Compound: ASTM C309.
- K. Cover Materials for Curing:
 - 1. Burlap:
 - a. AASHTO M182.
 - b. Minimum Class 2, 8 OZ material (1 YD x 42 IN).
 - 2. Polyethylene film, AASHTO M171.
- L. Paper Subgrade Cover: Polyethylene film, AASHTO M171.
- M. Forms:
 - 1. Steel or wood.
 - 2. Size and strength to resist movement during concrete placement and able to retain horizontal and vertical alignment.
 - 3. Free of distortion and defects.
 - 4. Full depth.
 - 5. Metal side forms:
 - a. Minimum 7/32 IN thick.
 - b. Depth equal to edge thickness of concrete.
 - c. Flat or rounded top minimum 1-3/4 IN wide.
 - d. Base 8 IN wide or equal to height, whichever is less.

- 1 e. Maximum deflection 1/8 IN under center load of 1,700 LBS.
- 2 f. Use flexible spring steel forms or laminated boards to form radius bends.

3 2.2 MIXES

- 4 A. Mix design to provide 4,000 psi 28-day compressive strength, 1-1/2 IN plus 1 IN slump, 6
- 5 percent air.
- 6 B. Comply with Specification Section 03002.

7 PART 3 - EXECUTION

8 3.1 PREPARATION

- 9 A. Subgrade Preparation:
 - 10 1. Prepare using methods, procedures, and equipment necessary to attain required compaction
 - 11 densities, elevation and section.
 - 12 2. Scarify and recompact top 6 IN of fills and embankments which will be under paved areas.
 - 13 3. Remove soft or spongy areas.
 - 14 4. Replace with aggregate material.
 - 15 5. Compact to the following densities:
 - 16 a. Cohesive soils: 95 percent per ASTM D698.
 - 17 b. Noncohesive soils: 75 percent relative per ASTM D4253 and ASTM D4254.
 - 18 6. Assure moisture content is within limits prescribed to achieve required compaction density.
 - 19 7. Following compaction, trim and roll to exact cross section: Check with approved grading
 - 20 template.
 - 21 8. Perform density tests on subgrade to determine that subgrade complies with the
 - 22 specification.
- 23 B. Aggregate Course:
 - 24 1. Place material in not more than 6 IN thick layers.
 - 25 2. Spread, shape, and compact all material deposited on the subgrade during the same day.
 - 26 3. Compact to 75 percent relative per ASTM D4253 and ASTM D4254.
- 27 C. Loose and Foreign Material: Remove loose and foreign material immediately before application
- 28 of paving.
- 29 D. Appurtenance Preparation:
 - 30 1. Block out or box out curb inlets and curb returns.
 - 31 2. Provide for joint construction as detailed and dimensioned on Drawings.
 - 32 3. Adjust manholes, inlets, valve boxes and any other utility appurtenances to design grade:
 - 33 a. Secure to elevation with concrete.
 - 34 b. Place concrete up to 5 IN below design grade.
 - 35 4. Headers:
 - 36 a. Construct at open ends of pavements.
 - 37 b. Use same concrete to construct headers as that used in the abutting structure.
 - 38 c. Extend header full width of pavement and crown same as pavement.
 - 39 5. Clean and oil forms.

40 3.2 INSTALLATION

- 41 A. Concrete Production: Comply with Specification Section 03002.
- 42 B. Forms:
 - 43 1. Form support:
 - 44 a. Compact soil foundation and cut to grade to support forms and superimposed machine
 - 45 loads.
 - 46 b. Use bearing stakes driven flush with bottom of form to supplement support as
 - 47 necessary.

- 1 c. Do not use earth pedestals.
- 2 2. Staking forms:
- 3 a. Joint forms neatly and tightly.
- 4 b. Stake and pin securely with at least 3 pins for each 10 FT section.
- 5 3. Clean and oil forms prior to placement of concrete.
- 6 4. Set forms sufficiently in advance of work (minimum of 2 HRS) to permit proper inspection.
- 7 5. Previously finished concrete pavement, curb or sidewalk contiguous with new work may
- 8 serve as side form when specifically approved.
- 9 C. Reinforcing:
- 10 1. Locate longitudinal edge bars between 3 and 6 IN from edge of slab.
- 11 2. Lap mats 1 full space.
- 12 3. Tie end transverse member of upper mat securely to prevent curving.
- 13 4. Lap nonwelded bars 12 IN minimum.
- 14 5. Support:
- 15 a. Place bars and heavy mats securely on chairs at called-for height.
- 16 b. Place other fabric on the first of a two-course pour and cover promptly with final pour,
- 17 or place fabric by a fabric-placer if procedure is reviewed and approved by Engineer.
- 18 D. Joints:
- 19 1. Hold joint location and alignment to within + 1/4 IN.
- 20 2. Finish concrete surface adjacent to previously placed slab to within + 1/8 IN, with tooled
- 21 radius of 1/4 IN.
- 22 3. Metal keyway joints:
- 23 a. Form by installing metal joint strip left in place.
- 24 b. Stake and support like side form.
- 25 c. Provide dowels or tie bars.
- 26 4. Weakened plane joints:
- 27 a. Tooled joints:
- 28 1) Form groove in freshly placed concrete with tooling device.
- 29 2) Groove dimensions shall be 3/8 IN at surface and 1/4 IN at root.
- 30 b. Sawed joints:
- 31 1) Saw 1/4 IN groove in green concrete.
- 32 2) Commence sawing as soon as concrete is hard enough to withstand operation
- 33 without chipping, spalling or tearing, regardless of nighttime or weather.
- 34 3) Thoroughly wet surface to protect membrane cure and recoat afterward.
- 35 4) Complete saw cutting before shrinkage stresses cause cracking.
- 36 c. Construction joints at 4 FT intervals in sidewalk.
- 37 5. Expansion joints:
- 38 a. Stake in place load transfer device for expansion joints consisting of dowels:
- 39 1) Supporting and spacing means and premolded joint filler as per Drawing details.
- 40 2) Located at 48 FT intervals and at all intersection curb returns.
- 41 3) Provide preformed joint filler at all junctions with existing curb, sidewalk, steps, or
- 42 other structures.
- 43 6. Construction joints:
- 44 a. Install construction joints at end of day's work or wherever concreting must be
- 45 interrupted for 30 minutes or more.
- 46 b. Locate to coincide with contraction or expansion joints.
- 47 c. When concrete placement is interrupted between joint locations for a sufficient time for
- 48 concrete to take its initial set, remove concrete to the nearest joint location before
- 49 resuming placement.
- 50 7. Thoroughly clean and fill joints with joint sealing material as specified.
- 51 8. Fill joints without overflowing onto pavement surface.
- 52 9. Upper surface of filled joint to be flush to 1/8 IN below finish surface.
- 53 E. Place Concrete:
- 54 1. Comply with Specification Section 03002.

2. Construct driveway openings, ramps, and other features as per Drawing details.
- F. Cold and Hot Weather Concreting:
 1. Cold weather:
 - a. Cease concrete placing when descending air temperature in shade falls below 40 DegF.
 - b. Do not resume until ambient temperature rises to minimum 40 DegF.
 - c. If placing below 40 DegF is authorized by Engineer, maintain temperature of mix between 60 and 80 DegF.
 - d. Heat aggregates or water or both.
 - e. Water temperature may not exceed 175 DegF.
 - f. Aggregate temperature may not exceed 150 DegF.
 - g. Remove and replace frost damaged concrete.
 - h. Salt or other antifreeze is not permitted.
 - i. Comply with ACI 306R.
 2. Hot weather:
 - a. Cease concrete placing when plastic mix temperature cannot be maintained under 90 DegF.
 - b. Aggregates or water or both may be cooled.
 - c. Cool water with crushed ice.
 - d. Cool aggregates by evaporation of water spray.
 - e. Never batch cement hotter than 160 DegF.
 - f. Comply with ACI 305R.
- G. Finishing:
 1. As soon as placed, strike off and screed to crown and cross section, slightly above grade, so that consolidation and finishing will bring to final Drawing elevations.
 2. Maintain uniform ridge full width with first pass of first screed.
 3. Pavement and similar surfaces:
 - a. Float by longitudinally reciprocating float, passing gradually from edge to edge.
 - b. Assure successive advances do not exceed half the length of the float.
 - c. Test level of slab with minimum 10 FT straightedge.
 - d. Fill depressions with fresh material, consolidate and refinish.
 - e. Cut down high areas and retest.
 - f. Belt surface with two-ply canvas belt, using transverse strokes while advancing along center line.
 - g. Provide final finish by full width burlap or carpet drag, drawn longitudinally.
 - h. Keep drag clean to avoid build up and consequent scarring.
 - i. Tool pavement edges with suitable edger.
 - j. Retest with straightedge and if pavement shows deviation of more than 1/8 IN in 10 FT, remove and replace.
 4. Curb and similar surfaces:
 - a. Bring curb to grade by running straightedge over steel templates with sawing motion.
 - b. Float surface with a wood float to draw cement to surface.
 - c. Broom finish after floating.
 - d. Tool edges with suitable edger.
 - e. Upon removal of forms, fill honeycombed or unevenly filled sections immediately with cement mortar.
 - f. Assure that expansion joints are cleared of concrete.
 5. Sidewalk, steps, ramps, and similar surfaces:
 - a. Test with 6 FT straightedges equipped with long handles and operated from off the sidewalk.
 - b. Draw excess water and laitance off from surface.
 - c. Float finish so as to leave no disfiguring marks but to produce a uniform granular or sandy texture.
 - d. Broom finish after floating.
 - e. Tool pavement edges with suitable edger.
 - f. Provide exposed aggregate surfaces in areas indicated on the Drawings.

- 1 g. Provide method such as abrasive blasting, bush hammering, or surface retarder
2 acceptable to the Engineer.
- 3 H. Curing:
- 4 1. Apply membrane curing compound complying with ASTM C309, and in accordance with
5 manufacturer's directions but at a minimum rate of 200 SF per gallon.
- 6 2. Apply curing compound within 4 HRS after finishing or as soon as surface moisture has
7 dissipated.
- 8 3. Cure for minimum of 7 days.
- 9 4. When average daily temperature is below 50 DegF, provide insulative protection of 12 IN
10 minimum thickness loose dry straw, or equivalent, for 10 days.
- 11 I. Protection of Concrete:
- 12 1. Protect concrete surfaces and appurtenances from traffic for minimum of 14 days.
- 13 2. Erect and maintain warning signs, lights, watchmen to direct traffic.
- 14 3. Repair or replace parts of concrete surfaces damaged by traffic, or other causes, occurring
15 prior to final acceptance.
- 16 4. Protect concrete pavement against public traffic, construction traffic and traffic caused by
17 employees and agents.
- 18 5. No equipment shall be driven or moved across concrete surfaces unless such equipment is
19 rubber-tired and only if concrete is designed for and capable of sustaining loads to be
20 imposed by the equipment.
- 21 6. Do not drive over new or existing concrete with tracked vehicles and equipment.
- 22 J. Opening to Traffic:
- 23 1. After 14 days, pavement may, at Owner's discretion, be opened to traffic if job cured test
24 cylinders have attained a compressive strength of 3,000 LBS per square inch when tested in
25 accordance with ASTM standard methods.
- 26 2. Prior to opening to traffic, clean and refill joints as required with the specified filler
27 material.
- 28 K. Clean Up:
- 29 1. Assure clean up work is completed within 2 weeks after pavement has been opened to
30 traffic.
- 31 2. No new work will begin until clean up work has been completed, or is maintained within 2
32 weeks after pavement has been opened to traffic.
- 33 L. Pavement Patching:
- 34 1. Comply with material and density requirements as mentioned elsewhere in this
35 Specification except provide minimum 6 IN aggregate immediately below the patch.
- 36 2. Place pavement patch providing a thickened edge.
- 37 3. Assure that patch in plane of "cold" joint has a thickness 6 IN greater than that of the
38 existing pavement.
- 39 4. Extend patch under existing pavement for a distance of 6 IN minimum.
- 40 5. Fill void under existing pavement with concrete.
- 41 6. Undercut existing pavement 6 IN all around patch and to a depth of 6 IN.
- 42 7. Prior to placing patch, sawcut edge of existing concrete to 1/4 depth and remove to provide
43 a vertical face for a straight and true joint.

44 3.3 FIELD QUALITY CONTROL

- 45 A. Provide test cylinders in accordance with Specification Section 03002 for the first pour of the
46 day and each additional 100 CY of concrete placed.

47 **END OF SECTION**

SECTION 02513
ASPHALTIC CONCRETE VEHICULAR PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Asphaltic concrete vehicular paving.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. Federal Specifications (FS):
 - a. TT-P-115F, Paint, Traffic (Highway, White and Yellow).
 - 2. Material and construction standards:
 - a. Latest edition of the American Public Works Association's "Standard Specifications and Design Manual", Section 2200. Hereafter referred to as the "APWA Standard Specifications".
- B. Miscellaneous: Should conflicts arise between standard specifications of government agencies mentioned herein and Contract Documents, Contract Documents shall govern.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Asphaltic Concrete:
 - 1. Asphaltic concrete material shall conform to the APWA Standard Specifications, Section 2205, except as modified or supplemented herein.
 - a. Tack Coat: Tack coat shall be SS-1 or RC-70 liquid asphalt in conformance with 2204 of the APWA Standard Specifications.
 - b. Asphalt Cement: Bituminous material for asphalt pavement shall be penetration grade 60-70 or 85-100 in conformance with Section 2205 of APWA Standard Specifications.
 - c. Composition of Mix: All mixing and proportioning shall conform to Section 2205.3 of the APWA Standard Specifications.
 - 1) Base course: The base course shall be Type 2.
 - 2) Surface course: The surface course shall be Type 3.
- B. Line Paint:
 - 1. Nonreflective.
 - 2. White.
 - 3. FS TT-P-115F.
- C. Equipment: Equipment for asphalt construction shall be in conformance with APWA Standard Specifications, Section 2205.

1 **PART 3 - EXECUTION**

2 **3.1 INSTALLATION**

- 3 A. Construct to line, grade and section as shown on Drawings and in accordance with referenced
4 State Specifications.
- 5 B. Construct base and surface course thickness as indicated on the Drawings.
- 6 C. Construction Requirements: Construction Requirements shall conform to Section 2205.8 of the
7 APWA Standard Specifications.
- 8 D. Tolerance of Finished Grade: + 0.10 FT from required elevations.
- 9 E. Line Painting, where indicated on Plans:
- 10 1. Thoroughly clean surfaces which are to receive paint.
- 11 2. Make completely dry before paint is applied.
- 12 3. Do not paint until minimum of 5 days has elapsed from time surface is completed:
- 13 a. A longer period may be required if directed by Engineer.
- 14 4. Do not apply paint over wet surfaces, during wet or damp weather, or when temperature is
15 below 40 DegF.
- 16 5. Lay out markings and striping in accordance with Drawings:
- 17 a. Width of painted lines: 4 IN.

18 **END OF SECTION**

SECTION 02660
WATER MAIN CONSTRUCTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Coordination and interface with existing facilities and utilities.
 - 2. Connections to existing water mains.
 - 3. Testing, flushing and disinfection.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.
 - 2. Specification Section 02260 - Topsoiling and Finished Grading.
 - 3. Specification Section 15060 - Pipe and Pipe Fittings: Basic Requirements.
 - 4. Specification Section 15100 - Valves: Basic Requirements.
 - 5. Specification Section 15101 - Gate Valves.
 - 6. Specification Section 15510 - Fire Hydrant.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Water Work Association (AWWA):
 - a. B300, Standard for Hypochlorites.
 - b. B301, Standard for Liquid Chlorine.
 - c. C651, Standard for Disinfecting Water Mains.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Pipe: Refer to Specification Section 15060.
- B. In-Line Valves:
 - 1. Refer to Specification Section 15101.
 - 2. Provide adjustable valve boxes: Include price of valve boxes in price of valve installed complete.
- C. Fire Hydrants: Refer to Specification Section 15510.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install water main to the line and grade on the Drawings: Water mains to be staked at a minimum 100 FT interval with depth of cuts monitored.
- B. Field verify depth of utilities that will be crossed:
 - 1. Adjust water main elevation as required during construction.
 - 2. No separate payment will be made for field verification or adjustment of main depths as required.
- C. Contractor will restore all existing structures or services damaged by Contractor's operations at no cost to Owner.

1 **3.2 INTERRUPTION OF SERVICE**

- 2 A. Interruption of service to water users shall not exceed 4 HRS: Notify property owners of
3 interruption a minimum of 24 HRS in advance.

4 **3.3 UNDERGROUND SERVICES**

- 5 A. Notify utility representative prior to construction to obtain available information on location of
6 existing utilities: Contractor shall be responsible for locating all utilities.
- 7 B. Existing water services are to be connected to the new water mains: Damage to existing water
8 service to be repaired, using copper pipe and union the same size as existing service.

9 **3.4 DRIVEWAY REMOVAL AND REPLACEMENT**

- 10 A. All Portland cement concrete and asphalt noted for removal and replacement shall be cut prior to
11 removal:
12 1. Cut by sawing, vertical cut to be 1 IN minimum.
13 2. The remaining depth of section may be broken out in a manner subject to Engineers
14 approval.
15 3. Width of section removed to be either a width not greater than the outside diameter of the
16 water main plus 4 FT-0 IN or broken out to the nearest joint.
- 17 B. Replace Portland cement concrete and asphalt equal to or better than original paving plus 2 IN.
- 18 C. Debris resulting from the above operations shall be removed and hauled as directed by the
19 Engineer.

20 **3.5 GRAVEL SURFACED DRIVES AND ROADWAYS**

- 21 A. Contractor shall restore all damaged gravel surfaced drives and roadways to a condition equal to
22 or better than original:
23 1. Payment to be at bid unit price for this item.
24 2. Replacement gravel gradation.

25 **3.6 PROTECTION OF EXISTING UTILITIES**

- 26 A. Contractor to verify the location of all underground utilities: Omission from, or the inclusion of
27 utility locations on the plans is not to be considered as the nonexistence of or a definite location
28 of existing underground utilities.
- 29 B. A representative of the underground utilities shall be notified 24 HRS in advance of crossings.

30 **3.7 CONNECTIONS TO EXISTING WATER MAINS**

- 31 A. Make connections to existing water mains as shown on Drawings, by attaching to existing or
32 changed fitting: Cost for making connections shall include cost of all fittings including flexible
33 couplings, and shall be included in the bid unit price of the water main.
- 34 B. Where the connection is made to an existing water main which can be adequately isolated from
35 the distribution system, it shall be termed a "dry connection."
- 36 C. Contractor is responsible for controlling and disposing of water in the trench at no additional
37 cost to the Owner.

38 **3.8 SEPERATION OF WATER MAINS FROM SANITARY SEWERS, STORM SEWERS AND**
39 **OTHER NON-POTABLE FLUIDS**

- 40 A. Parallel installation:
41 1. The water main shall be located at least ten feet horizontally from any existing or proposed
42 line carrying non-potable fluids such as, but not limited to drains, storm sewers, sanitary
43 sewers, combined sewers, sewer service connections, and process waste or product lines.
44 The distance shall be measured edge to edge.

- 1 2. In areas where the recommended separations cannot be obtained, either the waterline or the
2 non-potable line shall be constructed of mechanical or manufactured restrained joint pipe,
3 fusion welded pipe, or cased in a continuous casing. Casing pipe must be a material that is
4 approved for use as water main. Conventional poured concrete is not an acceptable
5 encasement.

6 B. Crossings:

- 7 1. Water mains crossing sewers, or any other lines carrying non-potable fluids shall be laid to
8 provide a minimum vertical clear distance of 18 inches between the outside of the water
9 main and the outside of the non-potable pipeline. This shall be the case where the water
10 main is either above or below the non-potable pipeline. 18-inch separation is a structural
11 protection measure to prevent the sewer or water main from settling and breaking the other
12 pipe. At crossings, the full length of water pipe shall be located so both joints will be as far
13 from the non-potable pipeline as possible but in no case less than ten feet or centered on a
14 20-foot pipe. In areas where the recommended separations cannot be obtained either the
15 waterline or the non-potable pipeline shall be constructed of mechanical or manufactured
16 restrained joint pipe, fusion welded pipe, or cased in a continuous casing that extends no
17 less than ten feet on both sides of the crossing. Special structural support for the water and
18 sewer pipes may be required. Casing pipe must be a material that is approved for use as
19 water main. Conventional poured concrete is not an acceptable encasement.

20 C. Force mains:

- 21 1. There shall be at least a ten-foot horizontal separation between water mains and sanitary
22 sewer force mains or other force mains carrying non-potable fluids and they shall be in
23 separate trenches. In areas where the recommended separations cannot be obtained, either
24 the waterline or the non-potable line shall be constructed of mechanical joint pipe or cased
25 in a continuous casing, be constructed of mechanical joint pipe, or be jointless or fusion -
26 welded pipe. Where possible, the waterline shall also be at such an elevation that the bottom
27 of the water main is at least 18 inches above the top of the non-potable line. Casing pipe
28 must be a material that is approved for use as water main. Conventional poured concrete is
29 not an acceptable encasement.

30 D. Sewer Manholes:

- 31 1. No waterline shall be located closer than ten feet to any part of a sanitary or combined sewer
32 manhole. Where the separation cannot be obtained, the waterline shall be constructed of
33 mechanical or manufactured restrained joint pipe, fusion welded pipe, or cased in a
34 continuous casing. Casing pipe must be a material that is approved for use as water main.
35 The full length of water pipe shall be located so both joints will be as far from the manhole
36 as possible, but in no case less than ten feet or centered on a 20-foot pipe. No water pipe
37 shall pass through or come into contact with any part of a sanitary or combined sewer
38 manhole.

39 E. Disposal Facilities:

- 40 1. No water main shall be located closer than 25 feet to any wastewater disposal facility,
41 agricultural waste disposal facility, or landfill. Water mains shall be separated by a
42 minimum of 25 feet from septic tanks and wastewater disposal areas such as cesspools,
43 subsurface disposal fields, pit privies, land application fields, and seepage beds.

44 F. Payment for crossings shall be included in the bid unit price of the water main.

45 **3.9 TREES**

- 46 A. Do not remove trees without written instructions from the Engineer unless tree removal is shown
47 on drawings: No separate payment will be made for tree removal and the cost shall be included
48 in the bid.

49 **3.10 FENCES, SIGNS, MAILBOXES, ETC.**

- 50 A. Restore all damaged fences, signs, mailboxes, etc., to their original conditions: No separate
51 payment will be made for these items.

3.11 FIELD QUALITY CONTROL

A. Sealing, Flushing, and Disinfection of Potable Water Systems:

1. Maintain interior of all pipes, fittings and other accessories free from dirt and foreign material at all times:
 - a. If, in the opinion of the Engineer, the pipe contains dirt that will not be removed by flushing, the pipe interior shall be cleaned and swabbed with bactericidal solution.
 - b. At close of day's work or whenever workmen are absent from jobsite, plug, cap or otherwise provide watertight seal from open ends of pipe to prevent ingress of foreign material.
 - c. If water is in trench, seal shall remain in place until trench is pumped dry.
2. After favorable performance of pressure test and prior to final acceptance, thoroughly flush the entire potable water piping system and perform disinfection as prescribed:
 - a. Perform all work including preventative measures during construction in full compliance to AWWA C651.
3. Flush each segment of the system to provide a flushing velocity of not less than 2.5 FT per second.
4. Drain flushing water to location approved by the Owner.
5. Perform disinfection using one of the following forms:
 - a. Application of chlorine gas-water mixture by means of solution-feed chlorinating device. Liquid chlorine shall comply with AWWA B301.
 - b. Application of calcium hypochlorite, or sodium hypochlorite. Chlorine compounds shall comply with AWWA B300.
6. Disinfect pipe with chlorinated water as per AWWA C651.
 - a. Method of application of chlorine shall be by continuous feed method or slug method.
 - b. During disinfection procedure, ensure that initial and residual chlorine concentrations meet AWWA C651 requirements by testing by an approved method as directed by the Owner.
 - c. Cost of testing shall be included in the Bid Unit Price for water mains and no separate payment will be made for this item.
7. Tag the system during the disinfection procedure.
8. Following disinfection for required contact period, neutralize chlorine residual in water by treating with reducing agent:
 - a. Refer to AWWA C651.
 - b. Flush all treated water from pipeline at its extremities until replacement water throughout pipe, upon test is proved comparable in quality to water in existing system.
 - c. Take 2 samples to test for bacteriological quality as directed by Engineer.
 - d. Repeat disinfection procedure until 2 satisfactory results are obtained.
 - e. Quality of water delivered by the new water main to remain satisfactory for a minimum period of 2 days.
9. Secure satisfactory bacteriological reports on samples from the system.
 - a. Ensure all sampling and testing procedures are in full compliance to AWWA C651, and applicable requirements of the State of Missouri:
 - 1) No separate payment will be made for this item.
10. The Owner will provide the water required to fill the main initially and will pay for the water required to flush the main once:
 - a. Filling and flushing shall be performed during periods of low usage, between the hours of midnight and 4:00 AM.
 - b. Flushing water will be based on a maximum of 8 HRS total.
 - c. Any additional refilling or reflushing to be at the Contractor's expense at the City's commercial water rates.

END OF SECTION

SECTION 02730
GRANULAR PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
1. Crushed rock base and surface course.
- B. Related Specification Sections included but are not necessarily limited to:
1. Division 01 - General Requirements.
 2. Specification Section 02200 - Earthwork.

1.2 QUALITY ASSURANCE

- A. Reference Standards:
1. American Society for Testing and Materials (ASTM):
 - a. C117, Material Finer than 76-um (No. 200) Sieve in Mineral Aggregates by Washing.
 - b. C131, Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - c. C136, Sieve or Screen Analysis of Fine and Coarse Aggregates.
 - d. D423, Liquid Limit of Soils.
 - e. D424, Plastic Limit and Plasticity Index of Soils.
 2. American Association of State Highway and Transportation Officials (AASHTO):
 - a. T99, The Moisture Density Relations of Soils Using a 5.5-LB (2.5 kg) Rammer and a 12-IN (305 mm) Drop.

PART 2 - PRODUCTS

2.1 CRUSHED ROCK BASE AND SURFACE COURSE

- A. Material shall be crushed stone or crushed gravel, free from lumps or balls of clay or other objectionable matter, and reasonably free from thin and elongated pieces of dirt:
1. Material shall consist of angular fragments, durable and sound, and shall be reasonably uniform in density and quality.
- B. Percentage of wear shall not exceed 50 after 500 revolutions as determined by ASTM C131.
- C. Material shall contain 75 percent by weight of pieces with two or more fractured surfaces.
- D. Portion of aggregate passing No. 40 sieve shall be as follows:
1. Liquid Limit: Not more than 25 determined by ASTM D423.
 2. Plastic Index: Not more than 6 determined by ASTM D424.
- E. Gradation shall not vary from low limit on one sieve to high limit on adjacent sieve or vice versa. Test by ASTM C136 and C117, and conform to the following table:

Sieve Designation	Percent by Weight Passing Square-Mesh Sieve	
	Surface Course	Base Course
1 IN	100	100
1/2 IN	--	60-90
3/8 IN	65*	--
No. 4	--	40-60

*Indicates Maximum

2.2 EQUIPMENT FOR GRANULAR PAVING PLACEMENT

A. General Requirements:

1. Maintain all equipment, tools, machines used in the performance of the work required by this Specification Section in a satisfactory working condition at all times.
2. Equipment shall be subject to the approval of the Engineer.

B. Power Rollers:

1. Rollers shall be self-propelled, three-wheel, or tandem-type with wheels equipped with adjustable scrapers.
2. Weight shall not be less than 8 tons.

C. Tamping Rollers:

1. Rollers shall consist of one or more units arranged to adapt to uneven ground surfaces.
2. Rolling units of multiple types shall be pivoted on the main frame.
3. When fully loaded, rollers shall exert at least 300 psi on the combined areas of tamping feet in contact with the ground.
4. Each unit shall be equipped with a watertight cylindrical drum with length 48 IN or greater.
5. Tamping feet shall project not less than 7 IN from drum surface, with feet spaced not less than 10 IN, nor more than 10 IN measured diagonally from center to center.

D. Rubber-Tired Rollers:

1. Rollers shall consist of two axles on which are mounted not less than nine pneumatic-tired wheels, mounted so the rear group of tires do not follow in the tracks of the forward wheels but will be centered between the forward wheels.
2. The axles shall be mounted in a rigid frame provided with a loading platform or body suitable for ballast loading.
3. Inflate tires uniformly.
4. May be self-propelled.
5. Tow with pneumatic-tired tractors or other pneumatic-tired equipment.

E. Blade Graders shall be self-propelled with a wheelbase of not less than 15 FT, and a blade of not less than 10 FT.

F. Sprinkling equipment shall consist of tank trucks, pressure distributors, or other similar equipment designed to apply water uniformly and in controlled quantities to variable width of surface.

G. Hauling equipment shall consist of pneumatic-tired vehicles and dump bodies suitable for dumping materials in windrows or layers on the subgrade.

H. Tampers shall be mechanical (of an approved type) and hand-operated, weight not less than 50 LBS, and have a face area of not more than 100 SQ IN.

I. Miscellaneous equipment shall consist of scarifiers, tractors, spring-tooth or spike-tooth harrows, windrow equalizers, spreaders, and other equipment suitable for construction of select material.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

A. Stockpiles:

1. Clear and level storage sites prior to stockpiling.
2. Place in the manner and at locations designated by Engineer, providing separate stockpiles for materials from separate sources.

- B. Cold-Weather Limitations:
 - 1. Construction shall be prohibited when atmospheric temperature is below 35 DegF.
 - 2. Do not place base course on frozen subgrade, or surface course on frozen base.
 - 3. Protect base course, surface course and subgrade in freezing weather and repair areas damaged by freezing by reshaping and recompacting.
- C. Preparation of Subgrade:
 - 1. Prepare subgrade as specified in Specification Section 02200.
- D. Grade Control:
 - 1. Establish and maintain by means of grade stakes placed in lanes parallel to the centerline of the area to be paved and spaced so string lines may be stretched between stakes.

3.2 MIXING AND PLACING OF MATERIALS

- A. Deposit and spread material in a uniform layer and compact to the thickness indicated on the plans and as specified below:
 - 1. Spread material uniformly on the prepared subgrade from moving vehicles or spreader boxes:
 - a. Level material to the required contour and grades with blade graders.
 - b. Remove those portions of the layer which become segregated in spreading and replace with satisfactory mixture or remix as requested by Engineer.
 - c. Add water to the extent necessary to prevent segregation during mixing operations.
 - d. Add material to the mixture in such amounts and sizes as requested by the Engineer.
- B. Shaping and Compacting Mixed Materials:
 - 1. Compact in layers no less than 3 IN nor more than 7 IN thick.
 - 2. Roll to specified compaction requirements throughout full depth of layer with tamping rollers, power rollers, rubber-tired rollers or combination.
 - 3. Shape and smooth by blading and rolling with power roller or rubber-tired roller, or both.
 - 4. Hand-tamp in places not accessible to rolling equipment.
 - 5. Aerate by blade graders, harrows, or other approved equipment when mixture is moistened by rain.
- C. Degree of Compaction:
 - 1. Base compaction on weight per cubic foot of material passing 3/4 IN sieve and compact to at least 100 percent of density at optimum moisture.
 - 2. Determine and control compaction in accordance with AASHTO T99.
- D. Smoothness Test:
 - 1. Surface shall show no deviation in excess of 3/8 IN, in any 10 FT when tested with a 10 FT straightedge applied parallel with and at right angles to the centerlines of the paved area.
 - 2. Correct any deviation in excess of this amount by loosening, adding or removing material, reshaping, watering, and compacting as requested by the Engineer.
- E. Material Thickness:
 - 1. Excavate completed paving at locations indicated by Engineer and demonstrate that compacted thickness is no less than required.
 - 2. Perform no less than one thickness excavation for each 1,000 SF of paved area.
 - 3. Recompact excavated material.

3.3 MAINTENANCE

- A. Maintain finished base course in a condition satisfactory to the Engineer until job completion or until surface is placed upon it.

3.4 WAYBILLS AND DELIVERY TICKETS

- A. Submit daily to the Engineer during progress of work.

END OF SECTION

SECTION 02930
SEEDING, SODDING AND LANDSCAPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Seeding, sodding and landscape planting: Soil preparation.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.
 - 2. Specification Section 02260 - Topsoiling and Finished Grading.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Nursery and Landscape Association/American National Standards Institute (ANLA/ANSI):
 - a. Z60.1, American Standard for Nursery Stock.
 - 2. AOAC International (AOAC).
 - 3. ASTM International (ASTM):
 - a. D2028, Standard Specification for Cutback Asphalt (Rapid-Curing Type).
 - b. D5276, Standard Test Method for Drop Test of Loaded Containers by Free Fall.
- B. Quality Control:
 - 1. Fertilizer:
 - a. If Engineer determines fertilizer requires sampling and testing to verify quality, testing will be done at Contractor's expense, in accordance with current methods of the AOAC.
 - b. Upon completion of Project, a final check of total quantities of fertilizer used will be made against total area seeded.
 - c. If minimum rates of application have not been met, Contractor will be required to distribute additional quantities to make up minimum application specified.

1.3 SEQUENCING AND SCHEDULING

- A. Installation Schedule:
 - 1. Provide schedule showing when trees, shrubs, groundcovers and other plant materials are anticipated to be planted.
 - 2. Show schedule of when lawn type and other grass areas are anticipated to be planted.
 - 3. Indicate planting schedules in relation to schedule for irrigation system installation, finish grading and topsoiling.
 - 4. Indicate anticipated dates Engineer will be required to review installation for initial acceptance and final acceptance.
- B. Pre-installation Meeting:
 - 1. Meet with Engineer and other parties as necessary to discuss schedule and methods, unless otherwise indicated by Engineer.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS AND SUPPLIERS

- A. Subject to compliance with the Contract Documents, the manufacturers and suppliers listed in the applicable Articles below are acceptable.

2.2 MATERIALS

- A. Native Grass Seeding: Certified seed of locally adapted strains.
- B. Soil Amendments.
- C. Asphalt Binder: Emulsified asphalt per State specifications.
- D. Water:
 - 1. Water free from substances harmful to grass or sod growth.
 - 2. Provide water from source approved prior to use.
- E. Plants:
 - 1. See plant list on Drawings per notes on plan sheets.
 - 2. Sound, healthy, vigorous, with normal top and root systems, free from disease, insect pests or their eggs, grown in same or colder climatic zone as project:
 - a. Nursery grown stock, freshly dug: No heeled-in, cold storage or collected stock.
 - b. Species and size as indicated on Drawings.

PART 3 - EXECUTION

3.1 SOIL PREPARATION

- A. General:
 - 1. Limit preparation to areas which will be planted soon after.
 - 2. Provide facilities to protect and safeguard all persons on or about premises.
 - 3. Protect existing trees designated to remain.
 - 4. Verify location and existence of all underground utilities:
 - a. Take necessary precaution to protect existing utilities from damage due to construction activity.
 - b. Repair all damages to utility items at sole expense.
 - 5. Provide facilities such as protective fences and/or watchmen to protect work from vandalism:
 - a. Contractor to be responsible for vandalism until acceptance of work in whole or in part.
- B. Preparation for Lawn-Type Seeding, Sprigging, Plugging or Sodding:
 - 1. Loosen surface to minimum depth of 4 IN.
 - 2. Remove stones over 1 IN in any dimension and sticks, roots, rubbish, and other extraneous matter.
 - 3. Prior to applying fertilizer, loosen areas to be seeded with a double disc or other suitable device if the soil has become hard or compacted.
 - 4. Correct any surface irregularities in order to prevent pocket or low areas which will allow water to stand.
 - 5. Distribute fertilizer uniformly over areas to be seeded:
 - a. For lawn-type seeding: 30 LBS per 1,000 SF.
 - b. For pasture seeding: 200 LBS per acre.
 - 6. Incorporate fertilizer into soil to a depth of at least 2 IN by disking, harrowing, or other approved methods.
 - 7. Remove stones or other substances from surface which will interfere with turf development or subsequent mowing operations.
 - 8. Grade lawn areas to a smooth, even surface with a loose, uniformly fine texture:
 - a. Roll and rake, remove ridges and fill depressions, as required to meet finish grades.
 - b. Limit fine grading to areas which can be planted soon after preparation.
 - 9. Restore lawn areas to specified condition if eroded or otherwise disturbed after fine grading and before planting.
- C. Native Grass Seeding:
 - 1. Leave surface (seedbed) hard to discourage weed growth and erosion.

2. Ground should be undisturbed and uncultivated.

3.2 INSTALLATION

A. Lawn-Type and Pasture Seeding:

1. Do not use seed which is wet, moldy, or otherwise damaged.
2. Perform seeding work from April 20 to May 15 for spring planting, and August 1 to September 15 for fall planting, unless otherwise approved by Engineer.
3. Employ satisfactory methods of sowing using mechanical power-driven drills or seeders, or mechanical hand seeders, or other approved equipment.
4. Distribute seed evenly over entire area at rate of application not less than 4 LBS (PLS) of seed per 1,000 SF, 50 percent sown in one direction, remainder at right angles to first sowing.
5. Stop work when work extends beyond most favorable planting season for species designated, or when satisfactory results cannot be obtained because of drought, high winds excessive moisture, or other factors:
 - a. Resume work only when favorable conditions develop.
6. Lightly rake seed into soil followed by light rolling or cultipacking.
7. Immediately protect seeded areas against erosion by mulching:
 - a. Spread mulch in continuous blanket using 1-1/2 tons per acre to a depth of 4 or 5 straws.
8. Protect seeded slopes against erosion with erosion netting or other methods approved by Engineer:
 - a. Protect seeded areas against traffic or other use by erecting barricades and placing warning signs.
9. Immediately following spreading mulch, anchor mulch using a rolling coulter or a wheatland land packer having wheels with V-shaped edges to force mulch into soil surface, or apply evenly distributed emulsified asphalt at rate of 10-13 GAL/1,000 SF:
 - a. SS-1 emulsion in accordance with ASTM D5276 or RC-1 cutback asphalt in accordance with ASTM D2028 are acceptable.
 - b. If mulch and asphalt are applied in one treatment, use SS-1 emulsion with penetration test range between 150 to 200.
 - c. Use appropriate shields to protect adjacent site improvements.

3.3 PLANTING TREES, SHRUBS, AND GROUND COVERS

A. Notification:

1. Notify Engineer of source of plants and plant materials at least 30 days prior to planting to permit Engineer's inspection of source qualifications.

B. Preparation:

1. Handle plants so that roots or balls are adequately protected from breakage of balls, from sun or drying winds: Ensure tops or roots of plants are not permitted to dry out.
2. During transportation, protect materials from wind and sun to prevent tops and roots from drying out.
3. Protect tops of plants from damage: Plants with damaged tops will be rejected.
4. For purpose of inspection and planting identification, attach durable, legible labels to bundle or container of plant material delivered at the planting site: State correct plant name and size of each plant in weather-resistant ink on labels.
5. Do not prune trees and shrubs at nursery.

C. Planting Season:

1. Plant deciduous shade trees and shrubs any time the ground is suitable between October 15 and June 1.
2. Plant evergreen material between September 1 and June 1.
3. Plant ground covers between March 15 to June 1.

D. Planting Procedure:

1. Indicate locations of plants for approval by Engineer before excavating plant locations.
2. In event underground construction, utilities, obstructions, or rock are encountered in excavation of plantings, secure alternate locations from Engineer:
 - a. Make said changes without additional compensation.
 - b. Where tree locations fall under existing overhead wires, or crowd existing trees, adjust locations as directed by Engineer.
3. Excavate pits and beds as necessary and in accordance with ANLA/ANSI Z60.1:
 - a. Loosen bottom of pits prior to planting.
 - b. Excavation is unclassified, excavate all materials without additional cost.
4. Tree and shrub pits to be circular in shape with vertical sides at least 1 FT greater in diameter than ball diameter:
 - a. Pit to be of sufficient depth to provide 6 IN of planting soil under ball when set to natural grade.
5. Shrub and ground cover beds:
 - a. Plant shrubs used in mass plantings in individual holes of required size.
 - b. Strip all sod from among mass planting.
 - c. For ground cover beds, remove sod from within limits of bed.
 - d. Add soil amendments as specified and mix or rototill with existing topsoil to a depth of 6 IN.
6. Set plants straight or plumb, in locations when indicated and at such level that after settlement they bear same relationship to finished grade as they did in their former setting:
 - a. Carefully tamp planting soil under and around base of balls to prevent voids.
 - b. Remove burlap, rope and wires from top of balls.
 - c. Do not remove burlap from sides and bottom of balls.
7. Backfill plants with planting soil:
 - a. Tamp to 1/2 depth of pit and thoroughly water and puddle before bringing backfill to proper grade.
 - b. After planting has been completed, flood pit again so that backfill is thoroughly saturated and settled.
8. After planting is complete, form a level saucer 3 IN high around each tree extending to limit of plant pit for watering purposes.
9. Mulch plant pit after saucer has been shaped:
 - a. Mulch to limits of pit and uniformly over ground cover beds to a depth of 3 IN.
 - b. In mass plantings of shrubs, mulch entire area uniformly among shrubs to a depth of 3 IN.
 - c. If mulching is delayed and soil has dried out, water plants thoroughly before spreading mulch.
10. Staking:
 - a. Stake trees immediately after planting as detailed on Drawings or in accordance with Nursery Standards.
11. Wrap deciduous trees 2 IN or more in caliper by neatly overlapping wrapping material between ground line and second branch:
 - a. Place ties at top and bottom of wrapping material and not more than 12 IN apart between top and bottom ties.
12. Remove dead or damaged branches:
 - a. Thin deciduous material to about two-thirds of initial branching.
 - b. Remove only dead or damaged branches from evergreens.
13. Water plants during planting operations:
 - a. Water each plant a minimum of once each week until final acceptance.
 - b. Apply sufficient water to moisten backfill about each plant so that moisture will extend into the surrounding soil.

3.4 MAINTENANCE AND REPLACEMENT

A. General:

1. Begin maintenance of planted areas immediately after each portion is planted and continue until final acceptance or for a specific time period as stated below, whichever is the longer.
2. Provide and maintain temporary piping, hoses, and watering equipment as required to convey water from water sources and to keep planted areas uniformly moist as required for proper growth.
3. Protection of new materials:
 - a. Provide barricades, coverings or other types of protection necessary to prevent damage to existing improvements indicated to remain.
 - b. Repair and pay for all damaged items.
4. Replace unacceptable materials with materials and methods identical to the original specifications unless otherwise approved by the Engineer.

B. Seeded or Sodded Lawns:

1. Maintain seeded lawns:
 - a. 90 days, minimum, after installation and review of entire project area to be planted.
2. Maintenance period begins at completion of planting or installation of entire area to be seeded or sodded.
3. Engineer will review seeded or sodded lawn area after installation for initial acceptance.
4. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading, and replanting as required to establish a smooth, uniform lawn, free of weeds and eroded or bare areas.
5. Lay out temporary lawn watering system and arrange watering schedule to avoid walking over muddy and newly seeded areas:
 - a. Use equipment and water to prevent puddling and water erosion and displacement of seed or mulch.
6. Mow lawns as soon as there is enough top growth to cut with mower set at recommended height for principal species planted:
 - a. Repeat mowing as required to maintain height.
 - b. Do not delay mowing until grass blades bend over and become matted.
 - c. Do not mow when grass is wet.
 - d. Time initial and subsequent mowings as required to maintain a height of 1-1/2 to 2 IN.
 - e. Do not mow lower than 1-1/2 IN.
7. Remulch with new mulch in areas where mulch has been disturbed by wind or maintenance operations sufficiently to nullify its purpose:
 - a. Anchor as required to prevent displacement.
8. Unacceptable plantings are those areas that do not meet the quality of the specified material, produce the specified results, or were not installed to the specified methods.
9. Replant bare areas using same materials specified.
10. Engineer will review final acceptability of installed areas at end of maintenance period.
11. Maintain repaired areas until remainder of maintenance period or approved by Engineer, whichever is the longer period.

END OF SECTION

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SECTION 03002
CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Cast-in-place concrete and grout.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Concrete Institute (ACI):
 - a. 116R, Cement and Concrete Terminology.
 - b. 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight and Mass Concrete.
 - c. 212.3R, Chemical Admixtures for Concrete.
 - d. 304R, Guide for Measuring, Mixing, Transporting, and Placing Concrete.
 - e. 304.2R, Placing Concrete by Pumping Methods.
 - f. 305R, Hot Weather Concreting.
 - g. 306R, Cold Weather Concreting.
 - h. 318, Building Code Requirements for Structural Concrete.
 - i. 347, Guide to Formwork for Concrete.
 - 2. ASTM International (ASTM):
 - a. A82, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - b. A185, Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
 - c. A615, Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
 - d. A775, Standard Specification for Epoxy-Coated Steel Reinforcing Bars.
 - e. A1064, Standard Specification for Steel Wire and Welded Wire Replacement, Plain and Deformed, for Concrete.
 - f. C31, Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - g. C33, Standard Specification for Concrete Aggregates.
 - h. C39, Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - i. C94/C94M, Standard Specification for Ready-Mixed Concrete.
 - j. C138, Standard Method of Test for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.
 - k. C143, Standard Test Method for Slump of Hydraulic Cement Concrete.
 - l. C150, Standard Specification for Portland Cement.
 - m. C157, Standard Test Method for Length Change of Hardened Hydraulic-Cement, Mortar, and Concrete.
 - n. C172, Standard Practice for Sampling Freshly Mixed Concrete.
 - o. C173, Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
 - p. C231, Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - q. C260, Standard Specification for Air-Entraining Admixtures for Concrete.
 - r. C289, Standard Test Method for Potential Alkali-Silica Reactivity of Aggregates (Chemical Method).

- s. C309, Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
 - t. C494, Standard Specification for Chemical Admixtures for Concrete.
 - u. C618, Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - v. C1315, Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
 - w. D882, Standard Test Method for Tensile Properties of Thin Plastic Sheet.
 - x. D994, Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).
 - y. D1056, Standard Specification for Flexible Cellular Materials-Sponge or Expanded Rubber.
 - z. D1709, Standard Test Methods for Impact Resistance of Plastic Film by the Free-Falling Dart Method.
 - aa. D1751, Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 - bb. E96, Standard Test Methods for Water Vapor Transmission of Materials.
 - cc. E329, Standard Specification for Agencies Engaged in Construction Inspection and/or Testing.
 - dd. E1745, Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
3. Corps of Engineers (COE):
 - a. CRD-C572, Specifications for Polyvinylchloride Waterstop.
 - b. CRD-C621, Standard Specification for Packaged, Dry, Hydraulic-Cement Grout (Nonshrink).
 4. National Ready Mixed Concrete Association (NRMCA).
- B. Quality Control:
1. Concrete testing agency:
 - a. Contractor to employ and pay for services of a testing laboratory to:
 - 1) Perform materials evaluation.
 - 2) Design concrete mixes.
 - 3) Perform testing of concrete placed during construction.
 - b. Concrete testing agency to meet requirements of ASTM E329.
 2. Do not begin concrete production until proposed concrete mix design has been approved by Engineer:
 - a. Approval of concrete mix design by Engineer does not relieve Contractor of his responsibility to provide concrete that meets the requirements of this Specification.
 3. Adjust concrete mix designs when material characteristics, job conditions, weather, strength test results or other circumstances warrant:
 - a. Do not use revised concrete mixes until submitted to and approved by Engineer.
 4. Perform structural calculations as required to prove that all portions of the structure in combination with remaining forming and shoring system has sufficient strength to safely support its own weight plus the loads placed thereon.
- C. Qualifications:
1. Ready mixed concrete batch plant certified by NRMCA.
 2. Formwork, shoring and reshoring for slabs and beams except where cast on ground to be designed by a professional engineer currently registered in the state where the Project is located.

1.3 DEFINITIONS

- A. Per ACI 116R except as modified herein:
1. Concrete fill: Non-structural concrete.
 2. Concrete Testing Agency: Testing agency employed to perform materials evaluation, design of concrete mixes and testing of concrete placed during construction.
 3. Exposed concrete: Exposed to view after construction is complete.

- 4. Indicated: Indicated by Contract Documents.
- 5. Lean concrete: Concrete with low cement content.
- 6. Nonexposed concrete: Not exposed to view after construction is complete.
- 7. Required: Required by Contract Documents.
- 8. Specified strength: Specified compressive strength at 28 days.
- 9. Submitted: Submitted to Engineer.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Storage of Material:

- 1. Cement and fly ash:
 - a. Store in moisture proof, weathertight enclosures.
 - b. Do not use if caked or lumpy.
- 2. Aggregate:
 - a. Store to prevent segregation and contamination with other sizes or foreign materials.
 - b. Obtain samples for testing from aggregates at point of batching.
 - c. Do not use frozen or partially frozen aggregates.
 - d. Do not use bottom 6 IN of stockpiles in contact with ground.
 - e. Allow sand to drain until moisture content is uniform prior to use.
- 3. Admixtures:
 - a. Protect from contamination, evaporation, freezing, or damage.
 - b. Maintain within temperature range recommended by manufacturer.
 - c. Completely mix solutions and suspensions prior to use.
- 4. Reinforcing steel:
 - a. Support and store all rebars above ground.

B. Delivery:

- 1. Concrete:
 - a. Prepare a delivery ticket for each load for ready-mixed concrete.
 - b. Truck operator shall hand ticket to Owner's Representative at the time of delivery.
 - c. Ticket to show:
 - 1) Mix identification mark.
 - 2) Quantity delivered.
 - 3) Amount of each material in batch.
 - 4) Outdoor temp in the shade.
 - 5) Time at which cement was added.
 - 6) Numerical sequence of the delivery.
 - 7) Amount of water added.
- 2. Reinforcing steel:
 - a. Ship to jobsite with attached plastic or metal tags with permanent mark numbers.
 - b. Mark numbers to match Shop Drawing mark number.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following products and manufacturers are acceptable:
 - 1. Nonshrink, nonmetallic grout:
 - a. Sika "SikaGrout 212."
 - b. Euclid Chemical "NS Grout."
 - c. BASF Admixtures, Inc. "Masterflow 713."
 - 2. Epoxy grout:
 - a. BASF Admixtures, Inc. "Brutem MPG."
 - b. Euclid Chemical Company, "E3-G."
 - c. Fosroc, "Conbextra EPHF".
 - 3. Expansion joint fillers:

- 1 a. Permaglaze Co.
- 2 b. Rubatex Corp.
- 3 c. Williams Products, Inc.
- 4 4. Waterstops, PVC:
- 5 a. Greenstreak Plastic Products, Inc.
- 6 b. Burke Company.
- 7 c. Vinylex Corporation.
- 8 5. Form coating:
- 9 a. Richmond "Rich Cote."
- 10 b. Industrial Lubricants "Nox-Crete Form Coating."
- 11 c. Euclid Chemical "Eucoslip VOX."
- 12 6. Prefabricated forms:
- 13 a. Simplex "Industrial Steel Frame Forms."
- 14 b. Symons "Steel Ply."
- 15 c. Universal "Uniform."
- 16 7. Chemical sealer:
- 17 a. L&M Construction Chemicals, Inc.
- 18 b. Euclid Chemical Company.
- 19 c. Dayton Superior.
- 20 8. Bonding agent:
- 21 a. Euclid Chemical Co.
- 22 b. BASF Admixtures, Inc.
- 23 c. L&M Construction Chemicals Inc.
- 24 B. Submit request for substitution in accordance with Specification Section 01640.

25 2.2 MATERIALS

- 26 A. Portland Cement:
- 27 1. Conform to ASTM C150 Type I or Type II.
- 28 B. Fly Ash:
- 29 1. ASTM C618, Class F or Class C.
- 30 2. Nonstaining: Hardened concrete containing fly ash to be uniform light gray color.
- 31 3. Maximum loss on ignition: 4 percent.
- 32 4. Compatible with other concrete ingredients.
- 33 5. Obtain proposed fly ash from a source approved by the State Highway Department in the
- 34 state where the Project is located for use in concrete for bridges.
- 35 C. Admixtures:
- 36 1. Air entraining admixtures: ASTM C260.
- 37 2. Water reducing, retarding, and accelerating admixtures:
- 38 a. ASTM C494 Type A through E.
- 39 b. Conform to provisions of ACI 212.3R.
- 40 c. Do not use retarding or accelerating admixtures unless specifically approved in writing
- 41 by Engineer and at no cost to Owner.
- 42 d. Follow manufacturer's instructions.
- 43 e. Use chloride free admixtures only.
- 44 3. Maximum total water soluble chloride ion content contributed from all ingredients of
- 45 concrete including water, aggregates, cementitious materials and admixtures by weight
- 46 percent of cement: 0.10 all concrete.
- 47 4. Do not use calcium chloride.
- 48 5. Pozzolanic admixtures: ASTM C618.
- 49 6. Provide admixtures of same type, manufacturer and quantity as used in establishing required
- 50 concrete proportions in the mix design.
- 51 D. Water: Potable, clean, free of oils, acids and organic matter.
- 52 E. Aggregates:

1. Normal weight concrete: ASTM C33, except as modified below.
 2. Fine aggregate:
 - a. Clean natural sand.
 - b. No manufactured or artificial sand.
 3. Coarse aggregate:
 - a. Crushed rock, natural gravel, or other inert granular material.
 - b. Maximum amount of clay or shale particles: 1 percent.
 4. Gradation of coarse aggregate:
 - a. Lean concrete and concrete topping: Size #7.
 - b. All other concrete: Size #57 or #67.
- F. Concrete Grout:
1. Nonshrink, nonmetallic grout:
 - a. Nonmetallic, noncorrosive, nonstaining, premixed with only water to be added.
 - b. Grout to produce a positive but controlled expansion.
 - c. Mass expansion not to be created by gas liberation.
 - d. Minimum compressive strength of nonshrink grout at 28 days: 6,500 psi.
 - e. In accordance with COE CRD-C621.
 2. Epoxy grout:
 - a. 3-component epoxy resin system:
 - 1) 2 liquid epoxy components.
 - 2) 1 inert aggregate filler component.
 - b. Each component packaged separately for mixing at jobsite.
- G. Reinforcing Steel:
1. Reinforcing bars: ASTM A615, Grade 60.
 2. Welded wire reinforcement:
 - a. ASTM A185 or ASTM A1064.
 - b. Minimum yield strength: 60,000 psi.
 3. Column spirals: ASTM A82 or ASTM A1064.
- H. Forms:
1. Prefabricated or job built.
 2. Wood forms:
 - a. New 5/8 or 3/4 IN 5-ply structural plywood of concrete form grade.
 - b. Built-in-place or prefabricated type panel.
 - c. 4 x 8 FT sheets for built-in-place type except where smaller pieces will cover entire area.
 - d. When approved, plywood may be reused.
 3. Metal forms:
 - a. Metal forms excluding aluminum may be used.
 - b. Forms to be tight to prevent leakage, free of rust and straight without dents to provide members of uniform thickness.
 4. Chamfer strips: Clear white pine, surface against concrete planed.
 5. Form ties:
 - a. Removable end, permanently embedded body type with cones on outer ends not requiring auxiliary spreaders.
 - b. Cone diameter: 3/4 IN minimum to 1 IN maximum.
 - c. Embedded portion 1-1/2 IN minimum back from concrete face.
 - d. If not provided with threaded ends, constructed for breaking off ends without damage to concrete.
 - e. Provide ties with built-in waterstops at all walls that will be in contact with process liquid during plant operation.
 6. Form release:
 - a. Nonstaining and shall not prevent bonding of future finishes to concrete surface.
- I. Waterstops:
1. Plastic: COE CRD-C572.

2. Serrated with center bulb.
 3. Thickness: 3/8 IN.
 4. Length (general use): 6 IN unless indicated otherwise.
 5. Expansion joints:
 - a. Length: 9 IN.
 - b. Center bulb: 1 IN OD x 1/2 IN ID.
 6. Provide hog rings or grommets spaced at maximum 12 IN OC along the length of the water stop.
 7. Provide factory made waterstop fabrications at all changes of direction, intersections and transitions leaving only straight butt splices for the field.
- J. Chairs, Runners, Bolsters, Spacers, and Hangers:
1. Stainless steel, epoxy coated, or plastic coated metal:
 - a. Plastic coated: Rebar support tips in contact with the forms only.
- K. Chemical Floor Sealer:
1. Colorless low VOC water-based solution containing acrylic copolymers: ASTM C1315, Class B, minimum 30 percent solids.
 2. L&M Construction Chemicals Inc. Dress & Seal WB 30.
- L. Vapor Retarder:
1. ASTM E1745, Class A, minimum 15 mil thickness.
 2. Water vapor permeance: 0.03 maximum per ASTM E96.
 3. Puncture resistance: ASTM D1709, Method B, 2,200 grams.
 4. Minimum tensile strength: 45 LBS/IN, ASTM D882.
 5. Vapor retarder tape: As recommended by vapor retarder manufacturer.
- M. Membrane Curing Compound:
1. ASTM C309, Type I-D.
 2. Resin based, dissipates upon exposure to UV light.
 3. Curing compound shall not prevent bonding of any future coverings, coatings or finishes.
 4. Curing compounds used in water treatment plant construction to be nontoxic and taste and odor free.
- N. Bonding Agent:
1. High solids acrylic latex base liquid for interior or exterior application as a bonding agent to improve adhesion and mechanical properties of concrete patching mortars.
 2. Euclid Chemical Co. "Flex-Con."
 3. BASF Admixtures, Inc. "Acryl-Set."
 4. L&M Construction Chemicals "Everbond."
 5. Thoro System Products "Acryl 60."
- O. Expansion Joint Filler:
1. In contact with water or sewage:
 - a. Closed cell neoprene.
 - b. ASTM D1056, Class SC (oil resistant and medium swell) of 2 to 5 psi compression deflection (Grade SCE41).
 2. Exterior driveways, curbs and sidewalks:
 - a. Asphalt expansion joint filler.
 - b. ASTM D994.
 3. Other use:
 - a. Fiber expansion joint filler.
 - b. ASTM D1751.

2.3 CONCRETE MIXES

- A. General:
1. All concrete to be ready mixed concrete conforming to ASTM C94/C94M.
 2. Provide concrete of specified quality capable of being placed without segregation and, when cured, of developing all properties required.

- 1 3. All concrete to be normal weight concrete.
- 2 B. Strength:
- 3 1. Provide specified strength and type of concrete for each use in structure(s) as follows:

TYPE	WEIGHT	SPECIFIED STRENGTH*
Concrete fill	Normal weight	3,000 psi
Lean concrete	Normal weight	3,000 psi
Concrete topping	Normal weight and lightweight	4,000 psi
Precast concrete	Normal weight and lightweight	5,000 psi
All other general use concrete	Normal weight	4,000 psi

4 * Minimum 28-day compressive strength.

- 5 C. Air Entrainment:
- 6 1. Provide air entrainment in all concrete resulting in a total air content percent by volume as
- 7 follows:

MAX AGGREGATE SIZE	TOTAL AIR CONTENT PERCENT
1 IN or 3/4 IN	5 to 7
1/2 IN	5-1/2 to 8

- 8 2. Air content to be measured in accordance with ASTM C231, ASTM C173, or ASTM C138.

- 9 D. Slump - 4 IN maximum, 1 IN minimum:
- 10 1. Measured at point of discharge of the concrete into the concrete construction member.
- 11 2. Concrete of lower than minimum slump may be used provided it can be properly placed and
- 12 consolidated.
- 13 3. Pumped concrete:
- 14 a. Provide additional water at batch plant to allow for slump loss due to pumping.
- 15 b. Provide only enough additional water so that slump of concrete at discharge end of
- 16 pump hose does not exceed maximum slump specified above.
- 17 4. Determine slump per ASTM C143.

- 18 E. Selection of Proportions:
- 19 1. General:
- 20 a. Proportion ingredients to:
- 21 1) Produce proper workability, durability, strength, and other required properties.
- 22 2) Prevent segregation and collection of excessive free water on surface.
- 23 2. Minimum cement contents and maximum water cement ratios for concrete to be as follows:

SPECIFIED STRENGTH	MINIMUM CEMENT, LB/CY			MAXIMUM WATER CEMENT RATIO BY WEIGHT
	1/2 IN	3/4 IN	1 IN	
3000	---	517	517	0.45
4000	611	611	611	0.45
5000	---	686	665	0.40

- 24 3. Substitution of fly ash:
- 25 a. Maximum of 25 percent by weight of cement at rate of 1 LB fly ash for 1 LB of
- 26 cement.
- 27 4. Sand cement grout:
- 28 a. Three parts sand.
- 29 b. One part Portland cement.
- 30 c. Entrained air:
- 31 1) 6 percent plus or minus one percent.
- 32 d. Sufficient water for required workability.
- 33 e. Minimum 28-day compressive strength: 3,000 psi.
- 34 5. Pan stair fill:
- 35 a. Coarse aggregate: 100 percent passing a 1/2 IN sieve.
- 36 b. Proportions:
- 37 1) 1 sack cement.

- 2) 150 LBS coarse aggregate.
- 3) 150 LBS fine aggregate (sand).
- c. Adjust mix to obtain satisfactory finishing.
6. Normal weight concrete:
 - a. Proportion mixture to provide desired characteristics using one of methods described below:
 - 1) Method 1 (Trial Mix):
 - a) Per ACI 318, Chapter 5, except as modified herein.
 - b) Air content within range specified above.
 - c) Record and report temperature of trial mixes.
 - d) Proportion trial mixes per ACI 211.1.
 - 2) Method 2 (Field Experience):
 - a) Per ACI 318, Chapter 5, except as modified herein:
 - b) Field test records must be acceptable to Engineer to use this method.
 - c) Test records shall represent materials, proportions and conditions similar to those specified.
 7. Required average strength to exceed the specified 28-day compressive strength by the amount determined or calculated in accordance with the requirements of Paragraph 5.3 of ACI 318 using the standard deviation of the proposed concrete production facility as described in Paragraph 5.3.1 of ACI 318.
- F. Allowable Shrinkage: 0.048 percent per ASTM C157.

PART 3 - EXECUTION

3.1 FORMING AND PLACING CONCRETE

- A. Formwork:
 1. Contractor is responsible for design and erection of formwork.
 2. Construct formwork so that concrete members and structures are of correct size, shape, alignment, elevation and position:
 - a. Allowable tolerances: As recommended in ACI 347.
 3. Provide slabs and beams of minimum indicated depth when sloping foundation base slabs or elevated floor slabs to drains:
 - a. For slabs on grade, slope top of subgrade to provide floor slabs of minimum uniform indicated depth.
 - b. Do not place floor drains through beams.
 4. Openings:
 - a. Provide openings in formwork to accommodate work of other trades.
 - b. Accurately place and securely support items built into forms.
 5. Chamfer strips:
 - a. Place 3/4 IN chamfer strips in forms to produce 3/4 IN wide beveled edges on permanently exposed corners of members.
 6. Clean and adjust forms prior to concrete placement.
 7. Tighten forms to prevent mortar leakage.
 8. Coat form surfaces with form release agents prior to placing reinforcing bars in forms.
- B. Reinforcement:
 1. Position, support and secure reinforcement against displacement.
 2. Locate and support with chairs, runners, bolsters, spacers and hangers, as required.
 3. Set wire ties so ends do not touch forms and are directed into concrete, not toward exposed concrete surfaces.
 4. Lap splice lengths: ACI 318 Class B top bar tension splices unless indicated otherwise on the Drawings.
 5. Extend reinforcement to within 2 IN of concrete perimeter edges: If perimeter edge is earth formed, extend reinforcement to within 3 IN of the edge.
 6. Minimum concrete protective covering for reinforcement: As shown on Drawings.

- 1 7. Do not weld reinforcing bars.
- 2 8. Welded wire reinforcement:
- 3 a. Install welded wire reinforcement in maximum practical sizes.
- 4 b. Splice sides and ends with a splice lap length measured between outermost cross wires
- 5 of each fabric sheet not less than:
- 6 1) One spacing of cross wires plus 2 IN.
- 7 2) 1.5 x development length.
- 8 3) 6 IN.
- 9 c. Development length: ACI 318 basic development length for the specified fabric yield
- 10 strength.
- 11 C. Construction, Expansion, and Contraction Joints:
- 12 1. Provide at locations indicated.
- 13 2. Locate wall vertical construction joints at 30 FT maximum centers and wall horizontal
- 14 construction joints at 10 FT maximum centers.
- 15 3. Locate construction joints in floor slabs and foundation base slabs so that concrete
- 16 placements are approximately square and do not exceed 2,500 SF.
- 17 4. Locate construction joints in columns and walls:
- 18 a. At the underside of beams, girders, haunches, drop panels, column capitals, and at floor
- 19 panels.
- 20 b. Haunches, drop panels, and column capitals are considered part of the supported floor
- 21 or roof and shall be placed monolithically therewith.
- 22 c. Column based need not be placed monolithically with the floor below.
- 23 5. Locate construction joints in beams and girders:
- 24 a. At the middle of the span, unless a beam intersects a girder at that point.
- 25 b. If the middle of the span is at an intersection of a beam and girder, offset the joint in the
- 26 girder a distance equal to twice the beam width.
- 27 c. Provide satisfactory means for transferring shear and other forces through the
- 28 construction joint.
- 29 6. Locate construction joints in suspended slabs:
- 30 a. At or near the center of span in flat slab or T-beam construction.
- 31 b. Do not locate a joint between a slab and a concrete beam or girder unless so indicated
- 32 on Drawings.
- 33 7. In pan-formed joists:
- 34 a. At or near span center when perpendicular to the joists.
- 35 b. Centered in the slab, midway between joists, when parallel to the joists.
- 36 8. Install construction joints perpendicular to main reinforcement with all reinforcement
- 37 continued across construction joints.
- 38 9. At least 48 HRS shall elapse between placing of adjoining concrete construction.
- 39 10. Thoroughly clean and remove all laitance and loose and foreign particles from construction
- 40 joints.
- 41 11. Before new concrete is placed, coat all construction joints with an approved bonding
- 42 adhesive used and applied in accordance with manufacturer's instructions.
- 43 D. Embedments:
- 44 1. Set and build in anchorage devices and other embedded items required for other work that is
- 45 attached to, or supported by concrete.
- 46 2. Use setting diagrams, templates and instructions for locating and setting.
- 47 3. Secure waterstops in correct position using hog rings or grommets spaced along the length
- 48 of the waterstop and wire tie to adjacent reinforcing steel.
- 49 E. Placing Concrete:
- 50 1. Place concrete in compliance with ACI 304R and ACI 304.2R.
- 51 2. Place in a continuous operation within planned joints or sections.
- 52 3. Begin placement when work of other trades affecting concrete is completed.
- 53 4. Place concrete by methods which prevent aggregate segregation.
- 54 5. Do not allow concrete to free fall more than 4 FT.

1 6. Where free fall of concrete will exceed 4 FT, place concrete by means of tremie pipe or
2 chute.

3 F. Consolidation:

4 1. Consolidate all concrete using mechanical vibrators supplemented with hand rodding and
5 tamping, so that concrete is worked around reinforcement and embedded items into all parts
6 of forms.

7 G. Protection:

8 1. Protect concrete from physical damage or reduced strength due to weather extremes.

9 2. In cold weather comply with ACI 306R except as modified herein:

10 a. Do not place concrete on frozen ground or in contact with forms or reinforcing bars
11 coated with frost, ice or snow.

12 b. Minimum concrete temperature at the time of mixing:

OUTDOOR TEMPERATURE AT PLACEMENT (IN SHADE)	CONCRETE TEMPERATURE AT MIXING
Below 30 DegF	70 DegF
Between 30-45 DegF	60 DegF
Above 45 DegF	50 DegF

13 c. Do not place heated concrete that is warmer than 80 DegF.

14 d. If freezing temperatures are expected during curing, maintain the concrete temperature
15 at or above 50 DegF for 7 days or 70 DegF for 3 days.

16 e. Do not allow concrete to cool suddenly.

17 3. In hot weather comply with ACI 305R except as modified herein:

18 a. At air temperature of 90 DegF and above, keep concrete as cool as possible during
19 placement and curing.

20 b. Do not allow concrete temperature to exceed 90 DegF at placement.

21 c. Prevent plastic shrinkage cracking due to rapid evaporation of moisture.

22 d. Do not place concrete when the actual or anticipated evaporation rate equals or exceeds
23 0.2 LBS/SF/HR as determined from ACI 305R, Figure 2.1.5.

24 H. Curing:

25 1. Begin curing concrete as soon as free water has disappeared from exposed surfaces.

26 2. Cure concrete by use of moisture retaining cover, burlap kept continuously wet or by
27 membrane curing compound.

28 3. Provide protection as required to prevent damage to concrete and to prevent moisture loss
29 from concrete during curing period.

30 4. Provide curing for minimum of 7 days.

31 5. Form materials left in place may be considered as curing materials for surfaces in contact
32 with the form materials except in periods of hot weather.

33 6. In hot weather follow curing procedures outlined in ACI 305R.

34 7. In cold weather follow curing procedures outlined in ACI 306R.

35 8. If forms are removed before 7 days have elapsed, finish curing of formed surfaces by one of
36 above methods for the remainder of the curing period.

37 9. Curing vertical surfaces with a curing compound:

38 a. Cover vertical surfaces with a minimum of two coats of the curing compound.

39 b. Allow the preceding coat to completely dry prior to applying the next coat.

40 c. Apply the first coat of curing compound immediately after form removal.

41 d. Vertical surface at the time of receiving the first coat shall be damp with no free water
42 on the surface.

43 e. A vertical surface is defined as any surface steeper than 1 vertical to 4 horizontal.

44 I. Form Removal:

45 1. Remove forms after concrete has hardened sufficiently to resist damage from removal
46 operations or lack of support.

47 2. Where no reshoring is planned, leave forms and shoring used to support concrete until it has
48 reached its specified 28-day compressive strength.

3. Where reshoring is planned, supporting formwork may be removed when concrete has sufficient strength to safely support its own weight and loads placed thereon:
 - a. While reshoring is underway, no superimposed loads shall be permitted on the new construction.
 - b. Place reshores as soon as practicable after stripping operations are complete but in no case later than the end of working day on which stripping occurs.
 - c. Tighten reshores to carry their required loads.
 - d. Leave reshores in place until concrete being supported has reached its specified 28-day compressive strength.

3.2 CONCRETE FINISHES

A. Tolerances:

1. Class A: 1/8 IN in 10 FT.
2. Class B: 1/4 IN in 10 FT.

B. Surfaces Exposed to View:

1. Provide a smooth finish for exposed concrete surfaces and surfaces that are:
 - a. To be covered with a coating or covering material applied directly to concrete.
 - b. Scheduled for grout cleaned finish.
2. Remove fins and projections, and patch voids, air pockets, and honeycomb areas with cement grout.
3. Fill tie holes with nonshrink, nonmetallic grout.

C. Surfaces Not Exposed to View:

1. Patch voids, air pockets and honeycomb areas with cement grout.
2. Fill tie holes with nonshrink, nonmetallic grout.

D. Grout Cleaned Finish:

1. Mix 1 part Portland cement and 1-1/2 parts fine sand with sufficient bonding agent/water mixture to produce a grout with the consistency of thick paint:
 - a. White Portland cement shall be substituted for gray Portland cement to produce a color that matches color of surrounding concrete as determined by trial patch for areas not to be painted.
2. Wet surface of concrete to prevent absorption of water by grout and uniformly apply grout with brushes or spray gun.
3. Immediately scrub the surface with a cork float or stone to coat and fill air bubbles and holes.
4. While grout is still plastic, remove all excess grout by working surface with rubber float, sack or other approved means.
5. After the surface whitens from drying, rub vigorously with clean burlap.
6. Keep final finish damp for a minimum of 36 HRS after final rubbing.

E. Slab Float Finish:

1. After concrete has been placed, consolidated, struck off, and leveled, do no further work until ready for floating.
2. Begin floating when water sheen has disappeared and surface has stiffened sufficiently to permit operation.
3. During or after first floating, check planeness of entire surface with a 10 FT straightedge applied at not less than two different angles.
4. Cut down all high spots and fill all low spots during this procedure to produce a surface within Class B tolerance throughout.
5. Refloat slab immediately to a uniform sandy texture.

F. Troweled Finish:

1. Float finish surface.
2. Next power trowel, and finally hand trowel.
3. Produce a smooth surface which is relatively free of defects with first hand troweling.
4. Perform additional trowelings by hand after surface has hardened sufficiently.

5. Final trowel when a ringing sound is produced as trowel is moved over surface.
 6. Thoroughly consolidate surface by hand troweling.
 7. Leave finished surface essentially free of trowel marks, uniform in texture and appearance and plane to a Class A tolerance.
 8. On surfaces intended to support floor coverings remove any defects of sufficient magnitude that would show through floor covering by grinding.
- G. Broom Finish: Immediately after concrete has received a float finish as specified, give it a transverse scored texture by drawing a broom across surface.
- H. Apply chemical floor hardener to permanently exposed interior concrete floor slab surfaces where indicated: Apply in accordance with manufacturer's instructions.

3.3 GROUT

- A. Preparation:
1. Nonshrinking, nonmetallic grout:
 - a. Clean concrete surface to receive grout.
 - b. Saturate concrete with water for 24 HRS prior to grouting.
 2. Rock anchors:
 - a. Clean rock anchors of all loose material.
 - b. Orient hook or bends in anchor bars to clear anchor bolts, reinforcements, and other embedments to be installed later.
- B. Application:
1. Nonshrinking, nonmetallic grout:
 - a. Mix in a mechanical mixer.
 - b. Use no more water than necessary to produce flowable grout.
 - c. Place in accordance with manufacturer's instructions.
 - d. Completely fill all spaces and cavities below the bottom of baseplates.
 - e. Provide forms where baseplates and bedplates do not confine grout.
 - f. Where exposed to view, finish grout edges smooth.
 - g. Except where a slope is indicated on Drawings, finish edges flush at the baseplate, bedplate, member, or piece of equipment.
 - h. Protect against rapid moisture loss by covering with wet rags or polyethylene sheets.
 - i. Wet cure grout for 7 days, minimum.
 2. Rock anchors:
 - a. See Item 1 above.
 - b. If rodded:
 - 1) Fill each hole so that it overflows when anchor bar is inserted.
 - 2) Force anchor bars into place.
 - c. If pressure placed, set anchor bar before grouting.
 - d. Take special care to avoid any movement of anchors that have been placed.
 3. Epoxy grout:
 - a. Mix and place in accordance with manufacturer's instructions.
 - b. Completely fill all cavities and spaces around dowels and anchors without voids.
 - c. Obtain manufacturer's field technical assistance as required to ensure proper placement.

3.4 FIELD QUALITY CONTROL

- A. Contractor will employ and pay for services of a concrete testing laboratory to perform testing of concrete placed during construction:
- B. Tests During Construction:
1. Strength test - procedure:
 - a. Three cylinders, 6 IN DIA x 12 IN high, will be taken from each sample per ASTM C172 and ASTM C31.
 - b. Cylinders will be tested per ASTM C39:
 - 1) One at 7 days.

- 2) Two at 28 days.
 2. Strength test - frequency:
 - a. Not less than one test each day concrete placed.
 - b. Not less than one test for each 50 CY or major fraction thereof placed in one day.
 - c. Not less than one test for each type of concrete poured.
 - d. Not less than one test for each concrete structure exceeding 2 CY volume.
 3. Slump test:
 - a. Per ASTM C143.
 - b. Determined for each strength test sample.
 - c. Additional slump tests may be taken.
 4. Air content:
 - a. Per ASTM C231, ASTM C173, and ASTM C138.
 - b. Determined for each strength test sample.
 5. Temperature: Determined for each strength test sample.
- C. Evaluation of Tests:
1. Strength test results:
 - a. Average of 28-day strength of 2 cylinders from each sample:
 - 1) If 1 cylinder manifests evidence of improper sampling, molding, handling, curing or testing, strength of remaining cylinder will be test result.
 - 2) If both cylinders show any of above defects, test will be discarded.
- D. Acceptance of Concrete:
1. Strength level of each type of concrete shall be considered satisfactory if both of the following requirements are met:
 - a. Average of all sets of three consecutive strength tests equals or exceeds the required specified 28-day compressive strength.
 - b. No individual strength test falls below the required specified 28-day compressive strength by more than 500 psi.
 2. If tests fail to indicate satisfactory strength level, perform additional tests and/or corrective measures as directed by Engineer: Perform additional tests and/or corrective measures at no additional cost to Owner.

3.5 SCHEDULES

- A. Form Types:
1. Surfaces exposed to view:
 - a. Prefabricated or job-built wood forms.
 - b. Laid out in a regular and uniform pattern with long dimensions vertical and joints aligned.
 - c. Produce finished surfaces free from offsets, ridges, waves, and concave or convex areas.
 - d. Construct forms sufficiently tight to prevent leakage of mortar.
 2. Surfaces normally submerged or not normally exposed to view: Wood or steel forms sufficiently tight to prevent leakage of mortar.
 3. Other types of forms may be used:
 - a. For surfaces not restricted to plywood or lined forms.
 - b. As backing for form lining.
- B. Grout:
1. Nonshrinking, nonmetallic grout: General use.
 2. Epoxy grout:
 - a. Grouting of dowels and anchor bolts into existing concrete.
 - b. Other uses indicated on Drawings.
 3. Sand cement grout: Keyways of precast members.
- C. Concrete:
1. Precast concrete: Where indicated on Drawings.
 2. Lean concrete: Where indicated on Drawings.

- 1 3. Concrete fill: Where indicated on Drawings.
- 2 4. Normal weight concrete: All concrete.
- 3 5. Concrete pan fill: Stair and landings where indicated on Drawings.
- 4 6. General use concrete: All other locations.
- 5 D. Concrete Finishes:
- 6 1. Grout cleaned finish: Where indicated on Drawings.
- 7 2. Slab finishes:
- 8 a. Use following finishes as applicable, unless otherwise indicated:
- 9 1) Floated finish: Surfaces intended to receive roofing, concrete topping, lean
- 10 concrete, concrete fill and waterproofing.
- 11 2) Troweled finish: Interior floor slabs, exposed roof slabs and base slabs of
- 12 structures, equipment bases, and column bases.
- 13 3) Broom finish: Sidewalks, docks, concrete stairs, and ramps.

14 **END OF SECTION**

SECTION 09905
PAINTING AND PROTECTIVE COATINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. High performance industrial coatings (HPIC).
 2. Any other coating, thinner, accelerator, inhibitor, etc., specified or required as part of a complete System specified in this Specification Section.
 3. Minimum surface preparation requirements.
- B. Related Sections include but are not necessarily limited to:
1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 2. Division 01 - General Requirements.
 3. Section 10400 - Identification Devices.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
1. ASTM International (ASTM):
 - a. D4258, Standard Practice for Surface Cleaning Concrete for Coating.
 - b. D4259, Standard Practice for Abrading Concrete.
 - c. D4261, Standard Practice for Surface Cleaning Concrete Unit Masonry for Coating.
 - d. D4262, Standard Test Method for pH of Chemically Cleaned or Etched Concrete Surfaces.
 - e. D4263, Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
 - f. E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
 2. NACE International (NACE).
 3. National Association of Pipe Fabricators (NAPF):
 - a. 500-03, Surface Preparation Standard for Ductile Iron Pipe and Fittings in Exposed Locations Receiving Special External Coatings and/or Special Internal Linings:
 - 1) 500-03-04, Abrasive Blast Cleaning for Ductile Iron Pipe.
 - 2) 500-03-05, Abrasive Blast Cleaning for Cast Ductile Iron Fittings.
 4. National Bureau of Standards (NBS):
 - a. Certified Coating Thickness Calibration Standards.
 5. National Fire Protection Association (NFPA):
 - a. 101, Life Safety Code.
 6. NSF International (NSF).
 7. Steel Door Institute/American National Standards Institute (SDI/ANSI):
 - a. A250.10, Test Procedure and Acceptance Criteria For Prime Painted Steel Surfaces for Steel Doors and Frames.
 8. The Society for Protective Coatings (SSPC):
 - a. PA 2, Measurement of Dry Coating Thickness with Magnetic Gages.
 - b. SP 1, Solvent Cleaning.
 - c. SP 2, Hand Tool Cleaning.
 - d. SP 3, Power Tool Cleaning.
 - e. SP 16, Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals.
 9. The Society for Protective Coatings/NACE International (SSPC/NACE):
 - a. SP 5/NACE No. 1, White Metal Blast Cleaning.
 - b. SP 6/NACE No. 3, Commercial Blast Cleaning.

- c. SP 7/NACE No. 4, Brush-off Blast Cleaning.
 - d. SP 10/NACE No. 2, Near-White Blast Cleaning.
 - e. SP 12/NACE No. 5, Surface Preparation and Cleaning of Steel and Other Hard Materials by High and Ultrahigh Pressure Water Jetting Prior to Recoating.
 - f. SP 13/NACE No. 6, Surface Preparation of Concrete.
- B. Qualifications:
- 1. Coating manufacturer's authorized representative shall provide written statement attesting that applicator has been instructed on proper preparation, mixing and application procedures for coatings specified.
 - 2. Applicators shall have minimum of 10 YRS experience in application of similar products on similar project.
 - a. Provide references for minimum of 3 different projects completed in last 5 YRS with similar scope of work.
 - b. Include name and address of project, size of project in value (painting) and contact person.
- C. Miscellaneous:
- 1. Furnish paint through 1 manufacturer unless noted otherwise.
 - 2. Coating used in all corridors and stairways shall meet requirements of NFPA 101 and ASTM E84.
- D. Deviation from specified mil thickness or product type is not allowed without written authorization of Engineer.
- E. Material shall not be thinned unless approved, in writing, by paint manufacturer's authorized representative.

1.3 DEFINITIONS

- A. Installer or Applicator:
- 1. Installer or applicator is the person actually installing or applying the product in the field at the Project site.
 - 2. Installer and applicator are synonymous.
- B. Approved Factory Finish: Finish on a product in compliance with the finish specified in the Specification Section where the product is specified or in Section 11005.
- C. Corrosive Environment: Immersion in, or not more than 6 IN above, or subject to condensation, spillage or splash of a corrosive material such as water, wastewater, or chemical solution; or exposure to corrosive, caustic or acidic agent, chemicals, chemical fumes, chemical mixture, or solutions with pH range of 5 to 9.
- D. Highly Corrosive Environment: Immersion in, or not more than 6 IN above, or subject to condensation, spillage or splash of a highly corrosive material such as water, wastewater, or chemical solution; or exposure to highly corrosive, caustic or acidic agent, chemicals, chemical fumes, chemical mixture, or solutions with pH range below 5 or above 9.
- E. Exposed Exterior Surface:
- 1. Surface which is exposed to weather but not necessarily exposed to view as well as surface exposed to view.
 - 2. Exterior surfaces are considered corrosive environment.
 - a. The following areas are considered highly corrosive:
 - 1) All chemical unloading stations and areas within 10 FT-0 IN of containment areas.
 - 2) All chemical unloading station containment areas.
 - 3) All areas within a 6 FT radius of chemical tank vents.
- F. Finished Area: An area that is listed in or has finish called for on Room Finish Schedule or is indicated on Drawings to be painted.
- G. Immersion Surface:

1. Any surface immersed in water or some other liquid.
 2. Surface of any pipe, valve, or any other component of the piping system subject to condensation including the pipe support system.
- H. Paint includes the following:
1. High performance industrial coatings (HPIC) include: Epoxies, urethanes, vinyl ester, waterborne vinyl acrylic emulsions, acrylates, silicones, alkyds, acrylic emulsions and any other coating listed as a HPIC.
 - I. Surface Hidden from View: Surfaces such as those within pipe chases, surfaces between top side of ceilings (including drop-in tile ceilings) and underside of floor or roof structures above, surfaces under overhanging walkways if over five feet above adjacent walking surfaces
 - J. AP: Architectural paints.
 - K. HPIC: High performance industrial coatings.
 - L. SC: Special coatings.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver in original containers, labeled as follows:
1. Name or type number of material.
 2. Manufacturer's name and item stock number.
 3. Contents, by volume, of major constituents.
 4. Warning labels.
 5. VOC content.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, only the following manufacturers are acceptable:
1. High performance industrial coatings:
 - a. Tnemec.
 - b. ICI Devco.
 - c. Carboline Protective Coatings.
 - d. Sherwin Williams.
 - e. PPG Industries/Amercoat.
 - f. Induron
 - B. Submit request for substitution in accordance with Section 01640. Product VOC content will be an important factor when determining acceptability of substitution.

2.2 MATERIALS

- A. For unspecified materials such as thinner, provide manufacturer's recommended products.
- B. Paint Systems - General:
1. P = prime coat.
 2. F1, F2 . . . Fn = first finish coat, second finish coat . . . nth finish coat, color as selected by Engineer.
 3. If two (2) finish coats of same material are required, Contractor may, at his option and by written approval from paint manufacturer, apply 1 coat equal to mil thickness of 2 coats specified.

- C. HPIC products listed in the MATERIALS Article, Paint Systems paragraph are manufactured by Tnemec. Products of other listed manufacturers are acceptable for use providing the product is of the same generic resin, requires comparable surface preparation, has comparable application requirements, meets the same VOC levels or better, provides the same finish and color options and will withstand the atmospheric conditions of the location where it is to be applied.
- D. Paint Systems (Systems not shown are not used):
1. HPIC SYSTEM #1 - Polyamidoamine Epoxy Primer with Polyamidoamine Epoxy or Waterborne Acrylic Polyurethane Finish Coat(s).
 - a. Prime coat: P1 = 1 coat, 3 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - b. Finish coat(s):
 - 1) Interior:
 - a) F1 = 1 coat, 3 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - b) F2 = 1 coat, 3 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - 2) Exterior:
 - a) F1 = 1 coat, 3 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - b) F2 = 1 coat, 2.5 mils, Series 1080 Endura-Shield. W.B.(Waterborne Acrylic Polyurethane).
 2. HPIC SYSTEM #2 - Zinc-Rich Urethane Primer with Polyamidoamine Epoxy or Waterborne Acrylic Polyurethane Finish Coat(s).
 - a. Prime coat: P1 = 1 coat, 3.5 mils, Series 90-97 Tneme-Zinc (Zinc-Rich Urethane).
 - b. Finish coat(s):
 - 1) Interior: F1 = 1 coat, 6 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - 2) Exterior:
 - a) F1 = 1 coat, 6 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - b) F2 = 1 coat, 2.5 mils, Series 1080 Endura-Shield W.B.(Waterborne Acrylic Polyurethane).
 3. HPIC SYSTEM #3 - Polyamidoamine Epoxy Primer with Polyamidoamine Epoxy or Waterborne Acrylic Polyurethane Top Coat(s).
 - a. Prime coat: P1 = 1 coat, 5 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - b. Finish coat(s):
 - 1) Interior: F1 = 1 coat, 5 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - 2) Exterior: F1 = 1 coat, 2.5 mils, Series 1080 Endura-Shield W.B. (Waterborne Acrylic Polyurethane). Specifier: Use SYSTEM #13 for smooth face EXTERIOR, cast-in-place concrete, precast concrete and cement plaster surfaces.
 4. HPIC SYSTEM #13 - Modified-Acrylate Elastomer Primer and Top Coat.
 - a. Prime coat: P1 = 1 coat, 8 mils, Series 156 Enviro-Crete (Modified-Acrylate Elastomer).
 - b. Finish coat:
 - 1) Exterior: F1 = 1 coat, 8 mils, Series 156 Enviro-Crete (Modified-Acrylate Elastomer). Specifier: Use SYSTEM #43 for field painting factory coated fusion bonded epoxy piping, valves, etc. Make sure the surface is sanded or brush blasted to remove all gloss.
 5. HPIC SYSTEM #43 - Polyamidoamine Epoxy Primer with Polyamidoamine Epoxy Top Coat.
 - a. Prime coat: P1 = 1 coat, 2.5 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).
 - b. Finish coat:
 - 1) Interior: F1 = 1 coat, 3 mils, Series L69 Epoxoline (Polyamidoamine Epoxy).

PART 3 - EXECUTION

3.1 ITEMS TO BE PAINTED

- A. General:
1. Paint the following surfaces in a corrosive or highly corrosive area, whether exposed to view or not:

- 1 a. Concrete and/or concrete masonry units.
- 2 b. Conduit.
- 3 c. Ducts.
- 4 d. Galvanized metal surfaces.
- 5 B. Surfaces in Areas Not Considered Finished:
- 6 1. Paint following surfaces in areas not considered as finished area:
- 7 a. Piping, valves, fittings, and hydrants.
- 8 b. Miscellaneous ferrous metal surfaces.

9 **3.2 ITEMS NOT TO BE PAINTED**

- 10 A. General: Do not paint items listed in this Article unless specifically noted in the Contract
- 11 Documents to be painted.
- 12 B. Items with Approved Factory Finish: These items may require repair of damaged painted areas
- 13 or painting of welded connections.
- 14 C. Electrical Equipment: Do not field paint electrical equipment except where painting is
- 15 specifically stated elsewhere in these Contract Documents, or where the equipment is subject to
- 16 a corrosive environment and is specifically noted to be painted.
- 17 D. Other Items:
- 18 1. Stainless steel surfaces except:
- 19 a. Piping where specifically noted to be painted.
- 20 b. Banding as required to identify piping.
- 21 2. Aluminum surfaces except:
- 22 a. Where specifically shown in the Contract Documents.
- 23 b. Where in contact with concrete.
- 24 c. Where in contact with dissimilar metals.
- 25 3. Fiberglass surfaces except:
- 26 a. Fiberglass piping where specifically noted to be painted.
- 27 b. Piping supports where specifically noted to be painted.
- 28 4. Interior of pipe, ductwork, and conduits.
- 29 5. Moving parts of mechanical and electrical units where painting would interfere with the
- 30 operation of the unit.
- 31 6. Code labels and equipment identification and rating plates.
- 32 7. Concealed surfaces of precolored masonry.
- 33 8. Structural steel or steel deck required to be fireproofed.
- 34 9. Clad aluminum, clad steel, anodized aluminum, PVDF coated aluminum and PVDF coated
- 35 steel.
- 36 10. Galvanized steel items, unless specifically noted to be painted.
- 37 11. Bituminous coated ductile iron pipe. See the ITEMS TO BE PAINTED Article, Interior
- 38 Finished Areas paragraph of this Specification Section.

39 **3.3 SCHEDULE OF ITEMS TO BE PAINTED AND PAINTING SYSTEMS**

- 40 A. Concrete: Exterior cast-in-place and exterior precast surfaces (other than prefinished panels) in
- 41 areas indicated on the Drawings to be painted: SYSTEM #13.
- 42 B. Miscellaneous ferrous metals (non-corrosive dry environment): SYSTEM #1. Not for coating
- 43 galvanized steel, steel (hollow metal) doors, steel (hollow metal) door and window frames, and
- 44 products with approved factory finishes.
- 45 C. Ferrous metals subject to corrosive environment: SYSTEM #2.
- 46 1. Includes ferrous metal handrails and guardrails, piping, stairs, tank or equipment bridges,
- 47 pumps, and similar items.
- 48 2. Does not include items subject to contact with potable water.
- 49 3. Does not include items subject to contact with wastewater.

- D. Galvanized Metals:
 - 1. Field touch-up where top coat is required: SYSTEM #3, prime and first finish coat only. Prime paint only the damaged area.
 - 2. Assembled galvanized steel items: SYSTEM #3.
 - 3. Field touch-up of galvanized surfaces not requiring a finish top coat: SYSTEM #41. Paint only damaged areas.
 - 4. Galvanized pipe bollards: SYSTEM #3.
- E. Plastic Surfaces:
 - 1. PVC, FRP, and CPVC surfaces: SYSTEM #3.
 - 2. Includes tankage and piping.
- F. Pipe, Valves, and Fittings:
 - 1. Bare steel pipe bollards: SYSTEM #2.
 - 2. Steel, cast-iron, and uncoated ductile iron not in immersion service: SYSTEM #2.
 - 3. Stainless steel: SYSTEM #1.
 - 4. Brass and bronze: SYSTEM #3.
- G. Field painting of fusion bonded epoxy coated piping, valves, couplings, etc.: SYSTEM #43.

3.4 PREPARATION

- A. General:
 - 1. Verify that atmosphere in area where painting is to take place is within paint manufacturer's acceptable temperature, humidity and sun exposure limits.
 - a. Provide temporary heating, shade and/or dehumidification as required to bring area within acceptable limits.
 - 1) Provide temporary dehumidification equipment properly sized to maintain humidity levels required by paint manufacturer.
 - 2) Provide clean heat with heat exchanger type equipment sufficient in size to maintain temperature on a 24 HR basis.
 - a) Vent exhaust gases to exterior environment.
 - b) No exhaust gases shall be allowed to vent into the space being painted or any adjacent space.
 - 2. Prepare surfaces to be painted in accordance with coating manufacturer's instructions and this Specification Section unless noted otherwise in this Specification Section. Where discrepancy between coating manufacturer's instructions and this Specification Section exists, the more stringent preparation shall be provided unless approved otherwise, in writing, by the Engineer.
 - 3. Remove all dust, grease, oil, compounds, dirt and other foreign matter which would prevent bonding of coating to surface.
 - 4. Adhere to manufacturer's recoat time surface preparation requirements.
 - a. Surfaces that have exceeded coating manufacturer's published recoat time and/or have exhibited surface chalking shall be prepared prior to additional coating in accordance with manufacturer's published recommendations.
 - b. Minimum SSPC SP 7/NACE No. 4 unless otherwise approved by Engineer.
- B. Protection:
 - 1. Protect surrounding surfaces not to be coated.
 - 2. Remove and protect hardware, accessories, plates, fixtures, finished work, and similar items; or provide ample in-place protection.
- C. Prepare and paint before assembly all surfaces which are inaccessible after assembly.
- D. Ferrous Metal:
 - 1. Prepare ductile iron pipe in accordance with pipe manufacturer's recommendations and NAPF.

- a. All piping, pumps, valves, fittings and any other component used in any water piping system that requires preparation for painting shall be prepared in accordance with requirements for immersion service.
 - 1) Pipe: NAPF 500-03-04.
 - 2) Fittings: NAPF 500-03-05
 - b. Prepare all areas requiring patch painting in accordance with recommendations of manufacturer and NAPF.
 - c. Remove bituminous coating per piping manufacturer, paint manufacturer and NAPF recommendations. The most stringent recommendations shall apply.
2. Complete fabrication, welding or burning before beginning surface preparation.
 - a. Chip or grind off flux, spatter, slag or other laminations left from welding.
 - b. Remove mill scale.
 - c. Grind smooth rough welds and other sharp projections.
 3. Solvent clean in accordance with SSPC SP 1 or detergent and low-pressure water clean in accordance with SSPC SP 12/NACE No. 5 all surfaces scheduled to receive additional SSPC surface preparation.
 4. Surfaces subject to corrosive or highly corrosive environment and all surfaces subject to immersion service. Near-white blast clean in accordance with SSPC SP 10/NACE No. 2.
 5. All interior and exterior structural steel not included in corrosive, highly corrosive or immersion service surfaces. Minimum commercial blast clean in accordance with SSPC SP 6/NACE No. 3.
 6. Surfaces subject to high temperatures.
 - a. Heat in excess of 600 DegF: SSPC SP 10/NACE No. 2.
 - b. Heat in excess of 200 DegF but less than 600 DegF: SSPC SP 6/NACE No. 3.
 7. Surfaces of steel joists and steel trusses:
 - a. Commercial blast clean the major portion of the truss in accordance with SSPC SP 6/NACE No. 3.
 - b. Power tool or hand tool clean tight connection areas and other difficult to access areas in accordance with SSPC SP 2 or SSPC SP 3.
 8. Steel surfaces scheduled to receive SYSTEM #24 or #35:
 - a. White metal blast clean in accordance with SSPC SP 5/NACE No. 1.
 - b. Provide 2-1/2 to 3 mil anchor profile for SYSTEMS #24 and #35.
 9. All fusion bonded epoxy coated surfaces identified to be field painted:
 - a. Remove all traces of gloss finish by sanding or by abrasive brush blasting.
 - b. Clean surface after removing gloss finish to remove sanding or blasting residue.
 10. Restore surface of field welds and adjacent areas to original surface preparation.
 11. Black iron piping: Remove surface varnish by solvent or waterjet and detergent cleaning or brush-off blast cleaning in accordance with SSPC SP 7/NACE No. 4.
- E. Galvanized Steel and Non-ferrous Metals:
1. Solvent clean in accordance with SSPC SP 1 followed by brush-off blast clean in accordance with SSPC SP 16 to remove zinc oxide and other foreign contaminants.
 2. Provide uniform 1 mil profile surface.
- F. Concrete:
1. Cure for minimum of 28 days.
 2. Concrete surfaces shall be cleaned in accordance with ASTM D4258.
 3. Mechanically abrade concrete surfaces in accordance with ASTM D4259 as recommended by coating manufacturer.
 4. Abrasive blast concrete surfaces in accordance with SSPC SP 13/NACE No. 6 to provide profile recommended by coatings manufacturer.
 5. Test pH of surface to be painted in accordance with ASTM D4262.
 - a. If surface pH is not within coating manufacturer's required acceptable range, use methods acceptable to coating manufacturer as required to bring pH within acceptable range.
 - b. Retest pH until acceptable results are obtained.

6. Verify that moisture content of surface to be painted is within coating manufacturer's recommended acceptable limits.
 - a. Test moisture content of surface to be coated in accordance with ASTM D4263.
 - b. After remedial measures have been taken to lower or raise moisture content, retest surface until acceptable results are obtained.
- G. All Plastic Surfaces and Non-Ferrous Surfaces Except Galvanized Steel: Sand using 80 to 100 grit sandpaper to scarify surfaces.

3.5 APPLICATION

A. General:

1. Thin, mix and apply coatings by brush, roller, or spray in accordance with manufacturer's installation instructions.
 - a. Application equipment must be inspected and approved in writing by coating manufacturer.
 - b. Hollow metal shall be spray applied only.
2. Temperature and weather conditions:
 - a. Do not paint surfaces when surface temperature is below 50 DegF unless product has been formulated specifically for low temperature application and application is approved in writing by Engineer and paint manufacturer's authorized representative.
 - b. Avoid painting surfaces exposed to hot sun.
 - c. Do not paint on damp surfaces.
3. Immediately after surface has been inspected, apply structural steel and miscellaneous steel prime coat in the factory.
 - a. Finish coats shall be applied in the factory.
 - b. Prime coat referred to here is prime coat as indicated in this Specification.
4. Provide complete coverage to mil thickness specified.
 - a. Thickness specified is dry mil thickness.
 - b. All paint systems are "to cover." In situations of discrepancy between manufacturer's square footage coverage rates and mil thickness, mil thickness requirements govern.
 - c. When color or undercoats show through, apply additional coats until paint film is of uniform finish and color.
5. If so directed by Engineer, do not apply consecutive coats until Engineer has had an opportunity to observe and approve previous coats.
6. Apply materials under adequate illumination.
7. Evenly spread to provide full, smooth coverage.
8. Work each application of material into corners, crevices, joints, and other difficult to work areas.
9. Avoid degradation and contamination of blasted surfaces and avoid intercoat contamination. Clean contaminated surfaces before applying next coat.
10. Smooth out runs or sags immediately, or remove and recoat entire surface.
11. Allow preceding coats to dry before recoating.
 - a. Recoat within time limits specified by coating manufacturer.
 - b. If recoat time limits have expired re-prepare surface in accordance with coating manufacturer's printed recommendations.
12. Allow coated surfaces to cure prior to allowing traffic or other work to proceed.
13. Coat all aluminum in contact with dissimilar materials.
14. When coating rough surfaces which cannot be backrolled sufficiently, hand brush coating to work into all recesses.
15. Backroll concrete and masonry surfaces with a roller if paint coatings are spray applied.

B. Prime Coat Application:

1. Prime all surfaces indicated to be painted. Apply prime coat in accordance with coating manufacturer's written instructions and as written in this Specification Section.
2. Ensure field-applied coatings are compatible with factory-applied coatings.
 - a. Ensure new coatings applied over existing coatings are compatible.

- 1 b. Employ services of coating manufacturer's qualified technical representative.
- 2 1) Certify through material data sheets.
- 3 2) Perform test patch.
- 4 c. If field-applied coating is found to be not compatible, require the coating
- 5 manufacturer's technical representative to recommend, in writing, product to be used as
- 6 barrier coat, thickness to be applied, surface preparation and method of application.
- 7 d. At Contractor's option, coatings may be removed, surface re-prepared, and new coating
- 8 applied using appropriate paint system listed in the MATERIALS Article, Paint
- 9 Systems paragraph of this Specification Section. All damage to surface as result of
- 10 coating removal shall be repaired to original condition or better by Contractor at no
- 11 additional cost to Owner.
- 12 3. Prime ferrous metals embedded in concrete to minimum of 1 IN below exposed surfaces.
- 13 4. Apply zinc-rich primers while under continuous agitation.
- 14 5. Ensure abrasive blasting operation does not result in embedment of abrasive particles in
- 15 paint film.
- 16 6. Brush or spray bolts, welds, edges and difficult access areas with primer prior to primer
- 17 application over entire surface.
- 18 7. Touch up damaged primer coats prior to applying finish coats. Restore primed surface
- 19 equal to surface before damage.
- 20 8. All surfaces of steel lintels and steel components of concrete lintels used in wall
- 21 construction shall be completely painted with both prime and finish coats prior to placing in
- 22 wall.
- 23 C. Finish Coat Application:
- 24 1. Apply finish coats in accordance with coating manufacturer's written instructions and in
- 25 accordance with this Specification Section; manufacturer instructions take precedent over
- 26 these Specifications.
- 27 2. Touch up damaged finish coats using same application method and same material specified
- 28 for finish coat. Prepare damaged area in accordance with the PREPARATION Article of
- 29 this Specification Section.

30 3.6 COLOR CODING

- 31 A. Color and band piping in accordance with the SCHEDULE Article of this Specification Section.
- 32 1. Band piping using maximum of three (3) different colors at 20 FT maximum centers.
- 33 2. Factory painted piping shall be color banded in the factory per the Schedule in the
- 34 SCHEDULE Article of this Specification Section.
- 35 3. Place bands:
- 36 a. Along continuous lines.
- 37 b. At changes in direction.
- 38 c. At changes of elevation.
- 39 d. On both sides of an obstruction (e.g., wall, ceiling) that painted item passes through.
- 40 4. Band width for individual colors (pipe diameter measured to outside of insulation, if
- 41 applicable):
- 42 a. Piping up to 8 IN DIA: 2 IN minimum.
- 43 b. Piping greater than 8 IN up to 24 IN DIA: 4 IN minimum.
- 44 c. Piping greater than 24 IN up to 48 IN DIA: 6 IN minimum.
- 45 d. Piping greater than 48 IN DIA: 8 IN minimum.

46 3.7 FIELD QUALITY CONTROL

- 47 A. Contractor to provide protection for surfaces painted with epoxy coatings to prevent chalking.
- 48 Surfaces showing chalking will not be accepted regardless of condition of paint film.
- 49 B. Maintain Daily Records:
- 50 1. Record the following information during application of each coat of paint applied:
- 51 a. Date, starting time, end time, and all breaks taken by painters.
- 52 b. For exterior painting:

- 1) Sky condition.
- 2) Wind speed and direction.
- c. Air temperature.
- d. Relative humidity.
- e. Moisture content and surface temperature of substrate prior to each coat.
- f. Provisions utilized to maintain work area within manufacturer's recommended application parameters including temporary heating, ventilation, cooling, dehumidification and provisions utilized to mitigate wind blown dust and debris from contaminating the wet paint film.
- g. Record environmental conditions, substrate moisture content and surface temperature information not less than once every 4 HRS during application. Record hourly when temperatures are below 50 DegF or above 100 DegF.
2. Record the following information daily for the paint manufacturer's recommended curing period:
 - a. Date and start time of cure period for each item or area.
 - b. For exterior painting:
 - 1) Sky conditions.
 - 2) Wind speed and direction.
 - c. Record environmental conditions not less than once every 12 HRS. Record once every 4 HRS when ambient temperature is below 35 DegF.
 - d. Provisions utilized to protect each item or area and to maintain areas within manufacturer's recommended curing parameters.
3. Format for daily record to be computer generated.
- C. Measure wet coating with wet film thickness gages.
- D. Measure coating dry film thickness in accordance with SSPC PA 2 using Mikrotest gage calibrated against NBS "Certified Coating Thickness Calibration Standards." Engineer may measure coating thickness at any time during project to assure conformance with these Specifications.
- E. Measure surface temperature of items to be painted with surface temperature gage specifically designed for such.
- F. Measure substrate humidity with humidity gage specifically designed for such.
- G. Provide wet paint signs.

3.8 CLEANING

- A. Clean paint spattered surfaces. Use care not to damage finished surfaces.
- B. Upon completion of painting, replace hardware, accessories, plates, fixtures, and similar items.
- C. Remove surplus materials, scaffolding, and debris.

END OF SECTION

SECTION 10400
IDENTIFICATION DEVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Underground marking tape and tracer wire, piping, and similar items.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Society of Mechanical Engineers (ASME):
 - a. A13.1, Scheme for the Identification of Piping Systems.
 - 2. Instrumentation, Systems, and Automation Society (ISA).
 - 3. National Electrical Manufacturers Association/American National Standards Institute (NEMA/ANSI):
 - a. Z535.1, Safety Color Code.
 - b. Z535.2, Environmental and Facility Safety Signs.
 - c. Z535.3, Criteria for Safety Symbols.
 - d. Z535.4, Product Safety Signs and Labels.
 - 4. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC).
 - 5. Occupational Safety and Health Administration (OSHA):
 - a. 29 CFR 1910.145, Specification for Accident Prevention Signs and Tags.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
 - 1. W.H. Brady Co.
 - 2. Panduit.
 - 3. Seton.
 - 4. National Band and Tag Co.
 - 5. Carlton Industries, Inc.
- B. Submit request for substitution in accordance with Specification Section 01640.

2.2 MANUFACTURED UNITS

- A. Type F - Underground Warning Tape:
 - 1. Materials: Polyethylene.
 - 2. Size:
 - a. 6 IN wide (minimum).
 - b. Thickness: 3.5 mils.
 - 3. Fabrication:
 - a. Legend: Preprinted and permanently imbedded.
 - b. Message continuous printed.
 - c. Tensile strength: 1,750 psi.

SECTION 15060
PIPE AND PIPE FITTINGS: BASIC REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Process piping systems.
 2. Utility piping systems.
 3. Plumbing piping systems.
- B. Related Sections include but are not necessarily limited to:
1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 2. Division 01 - General Requirements.
 3. Section 02221 - Trenching, Backfilling, and Compacting for Utilities.
 4. Section 10400 - Identification Devices.
 5. Section 15100 - Valves: Basic Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
1. American Association of State Highway and Transportation Officials (AASHTO):
 - a. M36, Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains (Equivalent ASTM A760).
 - b. M190, Standard Specification for Bituminous Coated Corrugated Metal Culvert Pipe and Pipe Arches.
 - c. M252, Standard Specification for Corrugated Polyethylene Drainage Tubing.
 - d. M294, Interim Specification for Corrugated Polyethylene Pipe 12 to 24 IN DIA.
 2. American Iron and Steel Institute (AISI).
 3. American Society of Mechanical Engineers (ASME):
 - a. B16.3, Malleable Iron Threaded Fittings.
 - b. B16.5, Pipe Flanges and Flanged Fittings.
 - c. B16.9, Factory-Made Wrought Steel Butt-Welding Fittings.
 - d. B16.22, Wrought Copper and Bronze Solder - Joint Pressure Fittings.
 - e. B16.26, Cast Copper Alloy Fittings for Flared Copper Tubes.
 - f. B36.19, Stainless Steel Pipe.
 - g. B40.100, Pressure Gauges and Gauge Attachments.
 4. ASTM International (ASTM):
 - a. A53, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - b. A74, Standard Specification for Cast Iron Soil Pipe and Fittings.
 - c. A106, Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service.
 - d. A126, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
 - e. A182, Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service.
 - f. A197, Standard Specification for Cupola Malleable Iron.
 - g. A234, Standard Specification for Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
 - h. A269, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - i. A312, Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes.
 - j. A518, Standard Specification for Corrosion-Resistant High-Silicon Iron Castings.

- k. A536, Standard Specification for Ductile Iron Castings.
 - l. A587, Standard Specification for Electric-Resistance-Welded Low-Carbon Steel Pipe for the Chemical Industry.
 - m. A760, Standard Specification for Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains.
 - n. A774, Standard Specification for As-Welded Wrought Austenitic Stainless Steel Fittings for General Corrosive Service at Low and Moderate Temperatures.
 - o. A778, Standard Specification for Welded, Unannealed Austenitic Stainless Steel Tubular Products.
 - p. B88, Standard Specification for Seamless Copper Water Tube.
 - q. C14, Standard Specification for Concrete Sewer, Storm Drain, and Culvert Pipe.
 - r. C76, Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 - s. C425, Standard Specification for Compression Joints for Vitrified Clay Pipe and Fittings.
 - t. C443, Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
 - u. C564, Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
 - v. C700, Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength and Perforated.
 - w. D1785, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
 - x. D2466, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
 - y. D2467, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
 - z. D4101, Standard Specification for Polypropylene Plastic Injection and Extrusion Materials.
 - aa. F439, Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe Fittings, Schedule 80.
 - bb. F441, Standard Specification for Chlorinated Poly(Vinyl Chloride) (CPVC) Plastic Pipe, Schedules 40 and 80.
5. American Water Works Association (AWWA):
 - a. B300, Standard for Hypochlorites.
 - b. C200, Standard for Steel Water Pipe - 6 IN and Larger.
 - c. C207, Standard for Steel Pipe Flanges for Waterworks Service - Sizes 4 IN through 144 IN.
 - d. C208, Standard for Dimensions for Fabricated Steel Water Pipe Fittings.
 - e. C606, Standard for Grooved and Shouldered Joints.
 - f. C651, Standard for Disinfecting Water Mains.
 - g. C800, Standard for Underground Service Line Valves and Fittings.
 6. American Water Works Association/American National Standards Institute (AWWA/ANSI):
 - a. C110/A21.10, Standard for Ductile-Iron and Gray-Iron Fittings.
 - b. C111/A21.11, Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - c. C115/A21.15, Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
 - d. C151/A21.51, Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water.
 - e. C153/A21.53, Standard for Ductile-Iron Compact Fittings for Water Service.
 7. Chlorine Institute, Inc. (CI):
 - a. Pamphlet 6, Piping Systems for Dry Chlorine.
 8. Cast Iron Soil Pipe Institute (CISPI):
 - a. 301, Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
 9. International Plumbing Code (IPC).

- 1 10. National Fire Protection Association (NFPA):
- 2 a. 54, National Fuel Gas Code.
- 3 b. 69, Standard on Explosion Prevention Systems.
- 4 11. Underwriters Laboratories, Inc. (UL).

5 B. Coordinate flange dimensions and drillings between piping, valves, and equipment.

6 **1.3 DEFINITIONS**

- 7 A. Hazardous Gas Systems: Digester gas, chlorine gas, sulfur dioxide gas, carbon dioxide gas, lab
- 8 gases.
- 9 B. PVDF: Polyvinylidene fluoride.

10 **1.4 SYSTEM DESCRIPTION**

- 11 A. Piping Systems Organization and Definition:
- 12 1. Piping services are grouped into designated systems according to the chemical and physical
- 13 properties of the fluid conveyed, system pressure, piping size and system materials of
- 14 construction.
- 15 2. See PIPING SPECIFICATION SCHEDULES in PART 3.

16 **1.5 SUBMITTALS**

- 17 A. Shop Drawings:
- 18 1. See Section 01340 for requirements for the mechanics and administration of the submittal
- 19 process.
- 20 2. Product technical data including:
- 21 a. Acknowledgement that products submitted meet requirements of standards referenced.
- 22 b. Copies of manufacturer's written directions regarding material handling, delivery,
- 23 storage and installation.
- 24 c. Separate schedule sheet for each piping system scheduled in this Specification Section
- 25 showing compliance of all system components. Attach technical product data on
- 26 gaskets, pipe, fittings, and other components.
- 27 B. Informational Submittals:
- 28 1. Test reports:
- 29 a. Copies of pressure test results on all piping systems.
- 30 b. Reports defining results of dielectric testing and corrective action taken.
- 31 c. Disinfection test report.
- 32 d. Notification of time and date of piping pressure tests.

33 **1.6 DELIVERY, STORAGE, AND HANDLING**

- 34 A. Protect pipe coating during handling using methods recommended by manufacturer. Use of bare
- 35 cables, chains, hooks, metal bars or narrow skids in contact with coated pipe is not permitted.
- 36 B. Prevent damage to pipe during transit:
- 37 1. Repair abrasions, scars, and blemishes.
- 38 2. If repair of satisfactory quality cannot be achieved, replace damaged material immediately.

39 **PART 2 - PRODUCTS**

40 **2.1 ACCEPTABLE MANUFACTURERS**

- 41 A. Subject to compliance with the Contract Documents, the following manufacturers are
- 42 acceptable:
- 43 1. Insulating unions:
- 44 a. "Dielectric" by EpcO.
- 45 2. Dirt strainers (Y type):
- 46 a. Mueller (#351).
- 47 b. Sarco.

- 1 c. Armstrong.
- 2 3. Chemical strainers (Y type):
- 3 a. Chemtrol.
- 4 b. Asahi.
- 5 4. Dry disconnect couplings:
- 6 a. Kamlock.
- 7 5. Dielectric flange kit:
- 8 a. PSI.
- 9 b. Maloney.
- 10 c. Central Plastics.
- 11 6. Pipe saddles (for gage installation):
- 12 a. Dresser Style 91 (steel and ductile iron systems).
- 13 b. Dresser Style 194 (nonmetallic systems).
- 14 7. Expansion joint at FRP and poly tanks:
- 15 a. PROCO.
- 16 B. Submit request for substitution in accordance with Section 01640.
- 17 **2.2 PIPING SPECIFICATION SCHEDULES**
- 18 A. Piping system materials, fittings and appurtenances are subject to requirements of specific piping
- 19 specification schedules located at the end of PART 3 of this Specification Section.
- 20 **2.3 COMPONENTS AND ACCESSORIES**
- 21 A. Insulating Components:
- 22 1. Dielectric flange kits:
- 23 a. Flat faced.
- 24 b. 1/8 IN thick dielectric gasket, phenolic, non-asbestos.
- 25 c. Suitable for 175 psi, 210 DegF.
- 26 d. 1/32 IN wall thickness bolt sleeves.
- 27 e. 1/8 IN thick phenolic insulating washers.
- 28 2. Dielectric unions:
- 29 a. Screwed end connections.
- 30 b. Rated at 175 psi, 210 DegF.
- 31 c. Provide dielectric gaskets suitable for continuous operation at union rated temperature
- 32 and pressure.
- 33 B. Reducers:
- 34 1. Furnish appropriate size reducers and reducing fittings to mate pipe to provide a complete
- 35 and operating system.
- 36 2. Connection size requirements may change from those shown on Drawings depending on
- 37 equipment furnished, size of pipe uncovered in the field.
- 38 C. Underground Warning Tape & Tracer Wire: See Section 10400.
- 39 D. Valves: See schematics and details for definition of manual valves used in each system under 4
- 40 IN in size. See Section 15100.

PART 3 - EXECUTION

3.1 EXTERIOR BURIED PIPING INSTALLATION

- 43 A. Unless otherwise shown on the Drawings, provide a minimum of 4 FT and maximum of 8 FT
- 44 earth cover over exterior buried piping systems and appurtenances conveying water, fluids, or
- 45 solutions subject to freezing.
- 46 B. Install expansion devices as necessary to allow expansion and contraction movement.
- 47 C. Laying Pipe In Trench:
- 48 1. Excavate and backfill trench in accordance with Section 02221.

- 1 2. Clean each pipe length thoroughly and inspect for compliance to specifications.
- 2 3. Grade trench bottom and excavate for pipe bell and lay pipe on trench bottom.
- 3 4. Install gasket or joint material according to manufacturer's directions after joints have been
- 4 thoroughly cleaned and examined.
- 5 5. Except for first 2 joints, before making final connections of joints, install 2 full sections of
- 6 pipe with earth tamped along side of pipe or final with bedding material placed.
- 7 6. Lay pipe in only suitable weather with good trench conditions. Never lay pipe in water
- 8 except where approved by Engineer.
- 9 7. Seal open end of line with watertight plug if pipe laying stopped.
- 10 8. Remove water in trench before removal of plug.
- 11 D. Lining Up Push-On Joint Piping:
- 12 1. Lay piping on route lines shown on Drawings.
- 13 2. Deflect from straight alignments or grades by vertical or horizontal curves or offsets.
- 14 3. Observe maximum deflection values stated in manufacturer's written literature.
- 15 4. Provide special bends when specified or where required alignment exceeds allowable
- 16 deflections stipulated.
- 17 5. Install shorter lengths of pipe in such length and number that angular deflection of any joint,
- 18 as represented by specified maximum deflection, is not exceeded.
- 19 E. Anchorage and Blocking:
- 20 1. Provide reaction blocking, anchors, joint harnesses, or other acceptable means for
- 21 preventing movement of piping caused by forces in or on buried piping tees, wye branches,
- 22 plugs, or bends.
- 23 2. Place concrete blocking so that it extends from fitting into solid undisturbed earth wall.
- 24 Concrete blocks shall not cover pipe joints.
- 25 3. Provide bearing area of concrete in accordance with drawing detail.
- 26 F. Install underground hazard warning tape per Section 10400.
- 27 G. Install insulating components where dissimilar metals are joined together.
- 28 **3.2 INTERIOR AND EXPOSED EXTERIOR PIPING INSTALLATION**
- 29 A. Install piping in vertical and horizontal alignment as shown on Drawings.
- 30 B. Alignment of piping smaller than 4 IN may not be shown; however, install according to Drawing
- 31 intent and with clearance and allowance for:
- 32 1. Expansion and contraction.
- 33 2. Operation and access to equipment, doors, windows, hoists, moving equipment.
- 34 3. Headroom and walking space for working areas and aisles.
- 35 4. System drainage and air removal.
- 36 C. Use reducing fittings throughout piping systems: Bushings will not be allowed unless
- 37 specifically approved.
- 38 D. Unions:
- 39 1. Install in position which will permit valve or equipment to be removed without dismantling
- 40 adjacent piping.
- 41 2. Mechanical type couplings may serve as unions.
- 42 3. Additional flange unions are not required at flanged connections.
- 43 E. Install expansion devices as necessary to allow expansion/contraction movement.
- 44 F. Provide full face gaskets on all systems.
- 45 G. Anchorage and Blocking: Block, anchor, or harness exposed piping subjected to forces in which
- 46 joints are installed to prevent separation of joints and transmission of stress into equipment or
- 47 structural components not designed to resist those stresses.
- 48 H. Provide insulating components where dissimilar metals are joined together.

I. Instrument Connections: See Drawing details.

3.3 CONNECTIONS WITH EXISTING PIPING

- A. Where connection between new work and existing work is made, use suitable and proper fittings to suit conditions encountered.
- B. Perform connections with existing piping at time and under conditions which will least interfere with service to customers affected by such operation.
- C. Undertake connections in fashion which will disturb system as little as possible.
- D. Provide suitable equipment and facilities to dewater, drain, and dispose of liquid removed without damage to adjacent property.
- E. Where connections to existing systems necessitate employment of past installation methods not currently part of trade practice, utilize necessary special piping components.
- F. Where connection involves potable water systems, provide disinfection methods as prescribed in this Specification Section.
- G. Once tie-in to each existing system is initiated, continue work continuously until tie-in is made and tested.

3.4 CATHODIC PROTECTION

- A. Isolate, dielectrically, all piping from all other metals including reinforcing bars in concrete slabs, other pipe lines, and miscellaneous metal.
- B. Make all connections from wire or cable by Thermit Cadwelding accomplished by operators experienced in this process.
- C. Install all cables with a loop and overhead knot around each pipe and slack equal to at least 50 percent of the straight line length.
- D. After cadwelding, coat all exposed metallic surfaces with hot applied tape.

3.5 FIELD QUALITY CONTROL

- A. Pipe Testing - General:
 - 1. Utilize pressures, media and pressure test durations as specified in the PIPING SPECIFICATION SCHEDULES.
 - 2. Isolate equipment which may be damaged by the specified pressure test conditions.
 - 3. Perform pressure test using calibrated pressure gages and calibrated volumetric measuring equipment to determine leakage rates:
 - a. Select each gage so that the specified test pressure falls within the upper half of the gage's range.
 - b. Notify the Engineer 24 HRS prior to each test.
 - 4. Completely assemble and test new piping systems prior to connection to existing pipe systems.
 - 5. Acknowledge satisfactory performance of tests and inspections in writing to Engineer prior to final acceptance.
 - 6. Bear the cost of all testing and inspecting, locating and remedying of leaks and any necessary retesting and re-examination.
- B. Pressure Testing:
 - 1. Testing medium: Unless otherwise specified in the PIPING SPECIFICATION SCHEDULES, utilize the following test media: Liquid systems:

PIPE LINE SIZE (DIA)	GRAVITY OR PUMPED	SPECIFIED TEST PRESSURE	TESTING MEDIUM
Up to and including 48 IN	Gravity	25 psig or less	Air or water
Above 48 IN	Gravity	25 psig or less	Water
All sizes	Pumped	250 psig or less	Water

2. Allowable leakage rates:
- After air removal, water shall be pumped in to bring the pipe to the specified pressure.
 - After two hours, additional water shall be drawn from a container of known volume.
 - The amount of water required to return the system to the specified pressure shall not exceed the amount determined by the following formula:

$$Q = SD(P)^{1/2}/133000,$$

Where Q - Total allowable leakage in two hours, gallons.
 S - Length of section tested, feet.
 D - Nominal pipe diameter, inches.
 P - Test pressure, psi.

3. Hydrostatic pressure testing methodology:
- General:
 - All joints, including welds, are to be left exposed for examination during the test.
 - Provide temporary restraints for expansion joints for additional pressure load under test.
 - Isolate equipment in piping system with rated pressure lower than pipe test pressure.
 - Do not paint or insulate exposed piping until successful performance of pressure test.
 - All exposed pipe, fittings, valves, blow-offs and joints shall be inspected and all evidence of moisture appearing on the surface of the ground during the test shall be investigated by the Contractor by excavation where the pipe has been covered with backfill.
 - Should the leakage test results exceed allowable leakage, the test pressure shall be maintained for an additional period of time as directed by the Engineer to facilitate location of leaks.
 - All pipe, fittings, valves, pipe joints, hydrants, and other materials which are found to be defective when the pipe line is tested shall be removed from the line immediately and replaced with new and acceptable material by and at the expense of the Contractor.
 - The pressure test shall be repeated after repairing leaks and other defective work until the pipe line installation conforms to specified requirements and is accepted by the Engineer.

3.6 CLEANING, DISINFECTION AND PURGING

- A. Cleaning:
- Clean interior of piping systems thoroughly before installing.
 - Maintain pipe in clean condition during installation.
 - Before jointing piping, thoroughly clean and wipe joint contact surfaces and then properly dress and make joint.
 - Immediately prior to pressure testing, flush ejection of pipe to be pressure tested to remove foreign materials which may have entered the system.
- B. Disinfection of Potable Water Systems:
- After favorable performance of pressure test and prior to Final Acceptance, thoroughly flush entire potable water piping system including supply, source and any appurtenant devices and perform disinfection as prescribed.
 - Perform work, including preventative measures during construction, in full compliance with AWWA C651.
 - Perform disinfection using sodium hypochlorite complying with AWWA B300.
 - Flush each segment of system to provide flushing velocity of not less than 2.5 FT per second.
 - Drain flushing water to either:

- a. The sanitary sewer:
 - 1) Only with the permission of the sanitary sewer system owner, and
 - 2) Only with the sanitary sewer system owner approval of the proposed flushing discharge rate clearly defined.
- b. A public storm sewer or public drainage way which has capacity to receive the proposed flushing discharge rate:
 - 1) Flushing water shall be dechlorinated to provide a free chlorine and chloramine residual on non detectable level (less than 0.001 ppm).
 - 2) Use equipment intended by the manufacturer for the purpose of dechlorinating flushing water from water mains.
 - a) Provide written guarantee from the dechlorinating equipment manufacturer that the proper use of the dechlorinating equipment by the detailed written instructions provided with the guarantee will dechlorinate the water flushed from the water main with the following conditions:
 - (1) A free chlorine residual value (ppm) to be stated in the guarantee.
 - (2) A chloramine residual value (ppm) to be stated in the guarantee.
 - (3) A flow rate of 3 FT/sec velocity in the water main size to be flushed (for 12-IN water main that is 1,100 to 1,150 gpm).
6. After required contact period, flush system to remove traces of heavily chlorinated water.
7. After final flushing and before placing water in service, obtain an independent laboratory approved by the Owner to collect samples and test for bacteriological quality. Repeat entire disinfection procedures until satisfactory results are obtained.
8. Secure and deliver to Owner, satisfactory bacteriological reports on samples taken from system. Ensure sampling and testing procedures are in full compliance to AWWA C651, local water purveyor and applicable requirements of State of Missouri.

3.7 LOCATION OF BURIED OBSTACLES

- A. Furnish exact location and description of buried utilities encountered and thrust block placement.
- B. Reference items to definitive reference point locations such as found property corners, entrances to buildings, existing structure lines, fire hydrants and related fixed structures.
- C. Include such information as location, elevation, coverage, supports and additional pertinent information.
- D. Incorporate information on "As-Recorded" Drawings.

3.8 SCHEDULES

- A. SPECIFICATION SCHEDULE - SYSTEM 1
 1. General: Water Main Ductile Iron Pipe (DIP)
 - a. Test requirements:
 - 1) Test medium: Potable water.
 - 2) Pressure: 150 psig.
 - 3) Duration: 2 HRS.
 - b. Gaskets and O-rings:
 - 1) Flanged, push-on and mechanical joints (ductile iron): Rubber, AWWA/ANSI C111/A21.11.
 - 2) Grooved coupling joints (ductile and steel): Rubber, AWWA C606
 - 3) Flanged joints (steel): AWWA C207
 2. System components:
 - a. Pipe size 3 IN through 24 IN:
 - 1) Exposed service:
 - a) Material:
 - (1) Flanged: Ductile iron, Class 53.
 - (2) Grooved type joint system: Use pipe thickness per AWWA C606.
 - b) Reference: AWWA/ANSI C115/A21.15.
 - c) Lining: Cement.

- d) Coating: See Specification Section 09905.
- e) Fittings:
 - (1) Either AWWA/ANSI C110/A21.10 ductile.
 - (2) Optional: AWWA/ANSI C153/A21.53 ductile iron compact fittings for sizes 3 IN to 16 IN.
- f) Joints:
 - (1) Flanged or grooved type mechanical coupling (AWWA C606) joints.
- 2) Buried service:
 - a) Materials: Ductile iron, Class 350.
 - b) Reference: AWWA/ANSI C151/A21.51.
 - c) Lining: Cement.
 - d) Coating: Bituminous.
 - e) Fittings:
 - (1) Either AWWA/ANSI C110/A21.10 ductile
 - (2) Optional: AWWA/ANSI C153/A21.53 ductile iron compact fittings for sizes 3 IN to 16 IN.
 - f) Joints: Push-on with mechanical (stuffing box type) joints at fittings and valves.

B. SPECIFICATION SCHEDULE - SYSTEM 2

- 1. General: Water Main PVC
 - a. Test requirements:
 - 1) Test medium: Potable water.
 - 2) Pressure: 150 psig.
 - 3) Duration: 2 HRS.
 - b. Gaskets: See Section 15064.
- 2. System components:
 - a. Pipe size through 12 IN:
 - 1) Buried service:
 - a) Material: PVC, C900, DR 18, Pressure Class 235 psi and C909 minimum Pressure Class 235 psi.
 - b) Reference: AWWA C900, AWWA C909.
 - c) Lining: None.
 - d) Coating: None.
 - e) Fittings:
 - (1) Either AWWA/ANSI C110/A21.10 ductile.
 - (2) Optional: AWWA/ANSI C153/A21.53 ductile iron compact fittings for sizes 3 IN to 16 IN.
 - f) Joints: Push-on with mechanical (stuffing box type) joints at fittings and valves.

END OF SECTION

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SECTION 15062
PIPE: DUCTILE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Ductile iron piping, fittings, and appurtenances.
- B. Related Sections include but are not necessarily limited to:
1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
 2. Division 01 - General Requirements.
 3. Section 15060 - Pipe and Pipe Fittings: Basic Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
1. American Society of Mechanical Engineers (ASME):
 - a. B1.1, Unified Inch Screw Threads (UN and UNR Thread Form).
 - b. B16.1, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
 2. ASTM International (ASTM):
 - a. B695, Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
 3. American Water Works Association (AWWA):
 - a. C203, Standard for Coal-Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape - Hot Applied.
 - b. C606, Standard for Grooved and Shouldered Joints.
 4. American Water Works Association/American National Standards Institute (AWWA/ANSI):
 - a. C105/A21.5, Standard for Polyethylene Encasement for Ductile-Iron Pipe Systems.
 - b. C110/A21.10, Standard for Ductile-Iron and Gray-Iron Fittings.
 - c. C111/A21.11, Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - d. C115/A21.15, Standard for Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
 - e. C150/A21.50, Standard for Thickness Design of Ductile-Iron Pipe.
 - f. C151/A21.51, Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water.
 5. Society of Automotive Engineers (SAE):
 - a. AMS-QQ-P-416, Cadmium Plating - Electro-deposited.

1.3 SUBMITTALS

- A. Shop Drawings:
1. See Section 01340 for requirements for the mechanics and administration of the submittal process.
 2. See Section 15060.
 3. Certification of factory hydrostatic testing.
 4. If mechanical coupling system is used, submit piping, fittings, and appurtenant items which will be utilized to meet system requirements.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
1. Flanged adaptors:
 - a. Rockwell (Style 912 (cast)).
 - b. Dresser (Style 127 (cast)).
 2. Compression sleeve coupling:
 - a. Rockwell (Style 431 (cast)).
 - b. Dresser (Style 153 (cast)).
 3. Mechanical coupling:
 - a. Victaulic (Style 31).
 - b. Tyler.
 4. Glass lining:
 - a. Ceramic Coating (Non-Stick Glass Lining).
 - b. Permutit (SG-14 Glass Lining).
 5. Insulating couplings:
 - a. Rockwell (Style 416).
 - b. Dresser (Style 39).
 6. Reducing couplings:
 - a. Rockwell (Style 415).
 - b. Dresser (Style 62).
 7. Transition coupling:
 - a. Rockwell (Style 413).
 - b. Dresser (Style 62).
 8. Polyethylene encasement tape:
 - a. Chase (Chasekote 750).
 - b. Kendall (Polyken 900).
 - c. 3 M (Scotchrap 50).
 9. Restrained joints:
 - a. American (Lock Fast) - 12 IN and below.
 - b. U.S. Pipe (TR-Flex) - 4 IN to 54 IN.
 - c. American (Lock Fast) - Above 12 IN.
 - d. U.S. Pipe (Snap Lock) – 4 IN to 30 IN. Acceptance on straight run joints only, not at bends or fittings.
 - e. McWane (Sure-Stop) – 4 IN to 24 IN. Acceptance on straight run joints only, not at bends or fittings.
 - f. American (Fast-Grip) – 4 IN to 30 IN. Acceptance on straight run joints only, not at bends or fittings.
 10. Restrained Joints (Mechanical):
 - a. Mechanical Joint – EBAA Iron Megalug Series 1100 – 4 IN to 48 IN.
- B. Submit request for substitution in accordance with Section 01640.

2.2 MATERIALS

- A. Ductile Iron Pipe:
1. AWWA/ANSI C115/A21.15.
 2. AWWA/ANSI C150/A21.50.
 3. AWWA/ANSI C151/A21.51.
- B. Fittings and Flanges:
1. AWWA/ANSI C110/A21.10.
 2. AWWA/ANSI C115/A21.15.
 3. Flanges drilled and faced per ASME B16.1 for both 125 and 250 psi applications.

- C. Nuts and Bolts:
 - 1. Buried: Cadmium-plated meeting SAE AMS-QQ-P-416, Type 1, Class 2 (Cor-Ten) for buried application.
 - 2. Exposed: Mechanical galvanized ASTM B695, Class 40.
 - 3. Heads and dimensions per ASME B1.1.
 - 4. Threaded per ASME B1.1.
 - 5. Project ends 1/4 to 1/2 IN beyond nuts.
- D. Gaskets: See individual piping system requirements in Section 15060.
- E. If mechanical coupling system is used, utilize pipe thickness and grade in accordance with AWWA C606.
- F. Polyethylene Encasement: Per AWWA/ANSI C105/A21.5 and infused with anti-microbial compound to mitigate corrosion.
- G. See Piping Schedules in Section 15060.

2.3 MANUFACTURED UNITS

- A. Couplings:
 - 1. Flanged adaptors:
 - a. Unit consisting of steel or carbon steel body sleeve, flange, followers, Grade 30 rubber gaskets.
 - b. Provide units specified in Article 2.1.
 - c. Supply flanges meeting standards of adjoining flanges.
 - d. Rate entire assembly for test pressure specified on piping schedule for each respective application.
 - 2. Compression sleeve coupling:
 - a. Unit consisting of steel sleeve, followers, Grade 30 rubber gaskets.
 - b. Provide units specified in Article 2.1.
 - c. Supply flanges meeting standards of adjoining flanges.
 - d. Entire assembly to be rated for test pressure specified on piping schedule for each respective application.
 - e. Provide field coating for buried couplings per AWWA C203.
 - 3. Mechanical couplings:
 - a. Use of mechanical couplings and fittings in lieu of flanged joints is acceptable where specifically specified in Section 15060.
 - b. Utilize units defined in Article 2.1.

2.4 FABRICATION

- A. Furnish and install without outside coatings of bituminous material any exposed pipe scheduled to be painted.
- B. Furnish cast parts with lacquer finish compatible with finish coat.
- C. Glass Lining:
 - 1. Minimum two-coat process:
 - a. Base coat heated to solidly fuse glass to pipe surface.
 - b. Subsequent coat(s) heated to form integral bond with preceding coat.
 - 2. Final finish parameters:
 - a. Thickness: 8 to 12 mils.
 - b. Hardness: Above 5 on MOHS scale.
 - c. Density: 2.5 to 3.0 grams per cubic centimeter.
 - d. Metal to lining bonding: Capable of withstanding strain of 0.0001 IN/IN without damage to lining.
 - 3. Complete compatibility between fittings and piping.

2.5 SOURCE QUALITY CONTROL

- A. Factory Test: Subject pipe to hydrostatic test of not less than 500 psi with the pipe under the full test pressure for at least 10 seconds.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Joining Method - Push-On Mechanical (Gland-Type) Joints:
1. Install in accordance with AWWA/ANSI C111/A21.11.
 2. Assemble mechanical joints carefully according to manufacturer's recommendations.
 3. If effective sealing is not obtained, disassemble, thoroughly clean, and reassemble the joint.
 4. Do not overstress bolts.
 5. Where piping utilizes mechanical joints with tie rods, align joint holes to permit installation of harness bolts.
- B. Joining Method - Push-On Joints:
1. Install in accordance with AWWA/ANSI C151/A21.51.
 2. Assemble push-on joints in accordance with manufacturer's directions.
 3. Bevel and lubricate spigot end of pipe to facilitate assembly without damage to gasket. Use lubricant that is non-toxic, does not support the growth of bacteria, has no deteriorating effects on the gasket material, and imparts no taste or odor to water in pipe.
 4. Assure the gasket groove is thoroughly clean.
 5. For cold weather installation, warm gasket prior to placement in bell.
 6. Taper of bevel shall be approximately 30 degrees with centerline of pipe and approximately 1/4 IN back.
- C. Joining Method - Flanged Joints:
1. Install in accordance with AWWA/ANSI C115/A21.15.
 2. Extend pipe completely through screwed-on flanged and machine flange face and pipe in single operation.
 3. Make flange faces flat and perpendicular to pipe centerline.
 4. When bolting flange joints, exercise extreme care to ensure that there is no restraint on opposite end of pipe or fitting which would prevent uniform gasket compression or would cause unnecessary stress, bending or torsional strains to be applied to cast flanges or flanged fittings.
 5. Allow 1 flange free movement in any direction while bolts are being tightened.
 6. Do not assemble adjoining flexible joints until flanged joints in piping system have been tightened.
 7. Gradually tighten flange bolts uniformly to permit even gasket compression.
- D. Joining Method - Mechanical Coupling Joint:
1. Arrange piping so that pipe ends are in full contact.
 2. Groove and shoulder ends of piping in accordance with manufacturer's recommendations.
 3. Provide coupling and grooving technique assuring a connection which passes pressure testing requirements.
- E. Flange Adaptors 12 IN and Less:
1. Locate and drill holes for anchor studs after pipe is in place and bolted tight.
 2. Drill holes not more than 1/8 IN larger than diameter of stud projection.
- F. Cutting:
1. Do not damage interior lining material during cutting.
 2. Use abrasive wheel cutters or saws.
 3. Make square cuts.
 4. Bevel and free cut ends of sharp edges after cutting.

- 1 G. Support exposed pipe in accordance with Section 15060.
- 2 H. Install buried piping in accordance with Section 15060.
- 3 I. Install restrained joint systems where specified in Section 15060 under specific piping system.

4 **3.2 FIELD QUALITY CONTROL**

- 5 A. Test piping systems in accordance with Section 15060.

7 **END OF SECTION**

SECTION 15063
PIPE: COPPER

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Copper piping, fittings, and appurtenances.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.
 - 2. Specification Section 02221 - Trenching, Backfilling, and Compacting for Utilities.
 - 3. Specification Section 15060 - Pipe and Pipe Fittings: Basic Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Society of Mechanical Engineers (ASME):
 - a. B16.22, Wrought Copper and Bronze Solder - Joint Pressure Fittings.
 - b. B16.23, Cast Bronze Solder Joint Drainage Fittings - DWV.
 - c. B16.26, Cast Bronze Alloy Fittings for Flared Copper Tubes.
 - 2. ASTM International (ASTM):
 - a. B32, Standard Specification for Solder Metal.
 - b. B42, Standard Specification for Seamless Copper Pipe, Standard Sizes.
 - c. B88, Standard Specification for Seamless Copper Water Tube.
 - d. B306, Standard Specification for Copper Drainage Tube (DWV).
 - 3. American Welding Society (AWS):
 - a. A5.8M/A5.8, Specification for Filler Metals for Brazing and Braze Welding.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Copper Tubing:
 - 1. Pressure non-buried: ASTM B88, Type L hard.
 - 2. Pressure buried: ASTM B88, Type K.
 - 3. Non-pressure: ASTM B306.
- B. Copper Pipe: ASTM B42, regular strength.
- C. Fittings:
 - 1. Pressure non-buried: ASME B16.22.
 - 2. Pressure buried: ASME B16.22 or ASME B16.26.
 - 3. Non-pressure: ASME B16.23
- D. Soldering and Brazing:
 - 1. Non-buried:
 - a. ASTM B32 solder with a tin/antimony ratio of 95/5 and non-corrosive flux up to 180 DegF water temperature.
 - b. At 180 DegF and above, use brazing alloy with melting temperature above 1000 DegF and suitable flux.
 - 2. Buried: Silver solder per AWS A5.8M/A5.8.
- E. Unions:
 - 1. Pipe sizes 2 IN and smaller: Copper, ground joint.

SECTION 15064
PIPE: PLASTIC

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
1. Plastic pipe.
- B. Related Specification Sections include but are not necessarily limited to:
1. Division 01 - General Requirements.
 2. Specification Section 15060 - Pipe and Pipe Fittings: Basic Requirements.

1.2 QUALITY ASSURANCE

- A. See Specification Section 15060.
- B. Referenced Standards:
1. ASTM International (ASTM):
 - a. PVC (polyvinyl chloride) materials:
 - 1) D1784, Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
 - 2) D1785, Standard Specification for Poly(Vinyl Chloride) PVC Plastic Pipe, Schedules 40, 80 and 120.
 - 3) D2467, Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
 - 4) D3034, Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 - 5) D3139, Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
 - 6) D3212, Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals.
 - 7) F593, Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
 - 8) F679, Standard Specification for Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings.
 - 9) F794, Standard Specification for Poly(Vinyl Chloride) (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter.
 - 10) F949, Standard Specification for Poly(Vinyl Chloride) (PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings.
 - b. Installation:
 - 1) D2321, Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
 2. American Water Works Association (AWWA):
 - a. PVC (polyvinyl chloride) materials:
 - 1) C900, Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 IN Through 12 IN, for Water Distribution.
 - 2) C905, Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 14 IN through 48 IN, for Water Transmission and Distribution.
 - b. Polyethylene (PE) materials:
 - 1) C901, Standard for Polyethylene (PE) Pressure Pipe and Tubing, 1/2 IN through 3 IN, for Water Service.
 3. NSF International (NSF).

PART 2 - PRODUCTS

2.1 PRESSURE PIPING (UNDERGROUND)

- A. Materials: Furnish materials in full compliance with following requirements:
 - 1. 1/2-3 IN: AWWA C901 PE with Pressure Class of 200 psi per Table A3, AWWA C901.
 - 2. 4-12 IN: AWWA C900, DR 18 Pressure Class 235 psi and C909 minimum Pressure Class 235 psi.
 - 3. Joints for polyethylene pipe shall be fusion type in accordance with AWWA C901.
 - 4. Joints for PVC pipe shall be the elastomeric-gasket type with a pressure rating not less than pipe pressure rating meeting performance requirements of ASTM D3139.
- B. Installation:
 - 1. Field threading of PVC pipe will not be permitted.
 - 2. Perform installation procedures, handling, thrust blocking, connections, and other appurtenant operations in full compliance to the manufacturer's printed recommendations and in full observance to plan details when more stringent.

2.2 PVC DRAINAGE, SEWER PIPING AND UNDERGROUND AIR DUCTS

- A. Materials:
 - 1. Furnish materials in full compliance to the following material specification.
 - 2. PVC pipe shall be rigid, unplasticized polyvinyl chloride (PVC) made of PVC plastic having a cell classification of 12454-B or 12454-C as described in specification ASTM D1784.
 - 3. The requirements of this Specification are intended to provide for pipe and fittings suitable for non-pressure drainage of wastewater and surface water.
 - 4. Joining systems shall consist of an elastomeric gasket joint meeting requirements of ASTM D3212.
 - 5. Supply to the Engineer all information and sample of joining method for his evaluation:
 - a. Only joining methods acceptable to the Engineer will be permitted.
 - 6. Provide pipe and fittings meeting or exceeding the following requirements:
 - a. 4-27 IN DIA:
 - 1) ASTM D3034 and ASTM F679, SDR 35.
 - b. 8-30 IN DIA:
 - 1) ASTM F794.
 - c. 4-18 IN DIA:
 - 1) ASTM F949.
 - 7. Ensure impact strengths and pipe stiffnesses in full compliance to these Specifications.
- B. Installation: Install pipe and fittings in accordance with ASTM D2321 and as recommended by the manufacturer:
 - 1. Provide for a maximum deflection of not more than 5 percent.
- C. Infiltration and Exfiltration:
 - 1. The maximum allowable infiltration measured by test shall not exceed 100 GAL per inch of pipe diameter per mile per 24 HRS.
 - 2. For exfiltration, all the pipe and fittings shall exceed performance requirements by an air test procedure as specified in Specification Section 15060.
 - 3. Observe full instructions of the Engineer for carrying of testing procedures:
 - a. Perform tests only during presence of the Engineer or his authorized representative.
 - 4. Should any test on any section of pipe line disclose either infiltration rates greater than allowed or disclose air loss rate greater than that permitted, locate and repair the defective joints or pipes at no cost to Owner and retest until requirements stated are met.
- D. Deflection:
 - 1. After backfilling, each section of pipe shall be checked for deflection by pulling a mandrel through the pipe.

2. Pipe with deflection exceeding 5 percent of the inside diameter shall have backfill removed and replaced to provide a deflection of less than 5 percent.
3. Any repaired pipe shall be retested.

PART 3 - EXECUTION

3.1 IDENTIFICATION

- A. Identify each length of pipe clearly at intervals of 5 FT or less.
 1. Include manufacturer's name and trademark.
 2. Nominal size of pipe, appurtenant information regarding polymer cell classification and critical identifications regarding performance specifications and NSF approvals when applicable.

3.2 PRESSURE PIPING (UNDERGROUND)

- A. Installation:
 1. Field threading of PVC pipe will not be permitted.
 2. Perform installation procedures, handling, thrust blocking, connections, and other appurtenant operations in full compliance to the manufacturer's printed recommendations and in full observance to plan details when more stringent.

3.3 PVC DRAINAGE, SEWER PIPING AND UNDERGROUND AIR DUCTS

- A. Installation:
 1. Install pipe and fittings in accordance with ASTM D2321 and as recommended by the manufacturer.
 - a. Provide for a maximum deflection of not more than 5 percent.
- B. Infiltration and Exfiltration:
 1. The maximum allowable infiltration measured by test shall not exceed 100 GAL per inch of pipe diameter per mile per 24 HRS.
 2. For exfiltration, all the pipe and fittings shall exceed performance requirements by an air test procedure as specified in Specification Section 15060.
 3. Observe full instructions of the Engineer for carrying of testing procedures:
 - a. Perform tests only during presence of the Engineer or his authorized representative.
 4. Should any test on any section of pipe line disclose either infiltration rates greater than allowed or disclose air loss rate greater than that permitted, locate and repair the defective joints or pipes at no cost to Owner and retest until requirements stated are met.
- C. Deflection:
 1. After backfilling, each section of pipe shall be checked for deflection by pulling a mandrel through the pipe.
 2. Pipe with deflection exceeding 5 percent of the inside diameter shall have backfill removed and replaced to provide a deflection of less than 5 percent.
 3. Any repaired pipe shall be retested.

END OF SECTION

SECTION 15078
PIPE: PVC RESTRAINED JOINT

PART 1 - GENERAL

1.1 SUMMARY

A. Specification Section Includes:

1. Plastic pipe. This specification covers restrained joint Polyvinyl Chloride (PVC) Pipe, 4 IN to 8 IN with cast-iron pipe (CI) outside diameters which are intended for use in pressure-rated potable water delivery and force main or gravity sewer systems.
2. The pipe shall be joined together using a non-metallic mechanically restrained bell and spigot system. High-strength, flexible thermoplastic splines are inserted into mating, precision machined grooves in the spigot and bell ends of the pipe during assembly to provide full 360° restraint with evenly distributed loading.

1.2 QUALITY ASSURANCE

A. See Specification Section 15060.

B. Referenced Standards:

1. American Water Works Association (AWWA):
 - a. C900, Standard for Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 IN Through 12 IN, for Water Distribution.
 - b. The products represented by this specification are manufactured restrained joints which meet the short and long term performance requirements of AWWA C900-07.

PART 2 - PRODUCTS

2.1 PVC AWWA C900

A. Materials:

1. Furnish materials in full compliance with the following requirements:
 - a. 4-12 IN: AWWA C900 PVC with minimum Pressure Class of 200 psi.
 - b. 14-24 IN: AWWA C905 PVC with minimum Pressure Class of 165 psi.
2. Joints for PVC pipe shall be elastomeric-gasket type with a pressure rating not less than pipe pressure rating meeting performance requirements of ASTM D3139.
3. The products represented by this specification are made from un-plasticized PVC compounds having a minimum cell classification of 12454 as defined in ASTM D1784. The compound qualifies for a Hydrostatic Design Basis (HDB) of 4,000 psi for water at 73.4°F in accordance with the requirements of ASTM D2837. Pipe and locking splines are completely non-metallic.
4. Restrained joint integral bells incorporate an elastomeric sealing gasket meeting the requirements of ASTM F477. Joints are designed to meet the zero leakage pressure and vacuum test requirements of ASTM D3139.

B. Installation:

1. Pipe shall be homogeneous throughout and free from voids, cracks, inclusions and other defects and shall be as uniform as commercially practicable in color, density and other physical characteristics.

C. Uniformity:

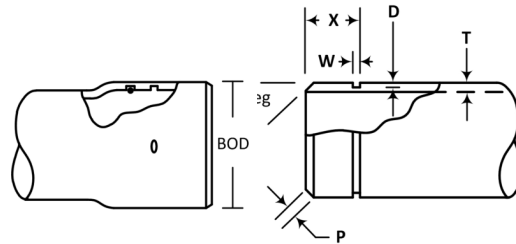
1. Ensure that all piping and fittings are integrated into components of the finished system.
2. Utilize products of a single manufacturer.

2.2 MANUFACTURERS

- A. Manufacturers of PVC Restrained Joint Pipe shall be one of the following:
1. C900 RJITM PVC restrained joint pipe produced by CertainTeed Corporation.
 2. Or pre-approved equal.

2.3 DIMENSIONS

1. Nominal outside diameters and wall thicknesses of this restrained joint pipe conform to the requirements of AWWA C900-07. This restrained joint pipe is furnished in 4", 6" and 8" sizes in Class 235 (DR18) and Class 305 (DR14).
2. Pipe is furnished in standard laying lengths of 20 feet. Standard color is BLUE (also available in GREEN and PURPLE).



All units are in inches and are subject to normal manufacturing tolerances

Pipe Size	OD	T min		P	X	W	D	BOD		Approximate Weight (lb/ft)	
		DR18	DR14					DR18	DR14	DR18	DR14
4"	4.80	0.267	0.343	0.313	3.000	0.500	0.095	5.442	5.589	2.50	3.20
6"	6.90	0.383	0.493	0.313	3.000	0.500	0.145	7.814	8.028	5.20	6.60
8"	9.05	0.503	0.646	0.656	3.163	0.500	0.145	10.260	10.539	8.90	11.20

PART 3 - EXECUTION

3.1 IDENTIFICATION

- A. Pipe is legibly and permanently marked with critical information including nominal size, material type, dimension ratio, pressure class, applicable standards, manufacturer's name or trademark, production record code, seal (mark) of testing agency verifying the suitability of the pipe material for potable water service.

3.2 INSTALLATION

- A. Users are encouraged to refer to AWWA C605 "Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings Water" for all the procedural requirements including but not limited to proper handling and storage, installation, tapping and testing.

Pipe Size	Allowable Tensile Load (lbs) ①	
	DR18	DR14
4"	10,300	11,900
6"	20,100	22,300
8"	27,500	31,000

① Safety Factor = 2:1

END OF SECTION

SECTION 15100
VALVES: BASIC REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Valving, actuators, and valving appurtenances.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.
 - 2. Specification Section 15060 - Pipe and Pipe Fittings: Basic Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Society of Mechanical Engineers (ASME):
 - a. B1.20.1, Pipe Threads, General Purpose.
 - b. B16.1, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
 - c. B16.18, Cast Copper Alloy Solder Joint Pressure Fittings.
 - 2. ASTM International (ASTM):
 - a. A126, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
 - b. D256, Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
 - c. D638, Standard Test Method for Tensile Properties of Plastics.
 - d. D648, Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position.
 - e. D695, Standard Test Method for Compressive Properties of Rigid Plastics.
 - f. D2240, Standard Test Method for Rubber Property-Durometer Hardness.
 - 3. American Water Works Association (AWWA):
 - a. C207, Standard for Steel Pipe Flanges for Waterworks Service - Sizes 4 IN through 144 IN.
 - b. C500, Standard for Metal-Seated Gate Valves for Water Supply Service.
 - c. C504, Standard for Rubber-Seated Butterfly Valves.
 - d. C507, Standard for Ball Valves, 6 IN through 48 IN (150 MM through 1,200 MM).
 - e. C509, Standard for Resilient-Seated Gate Valves for Water Supply Service.
 - f. C550, Standard for Protective Coatings for Valves and Hydrants.
 - g. C606, Standard for Grooved and Shouldered Joints.
 - 4. American Water Works Association/American National Standards Institute (AWWA/ANSI):
 - a. C111/A21.11, Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - 5. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1,000 Volts Maximum).
 - b. MG 1, Motors and Generators.

1.3 DEFINITIONS

- A. The following are definitions of abbreviations used in this Specification Section or 1 of the individual valve sections:
 - 1. CWP: Cold water working pressure.
 - 2. SWP: Steam working pressure.
 - 3. WOG: Water, oil, gas working pressure.
 - 4. WWP: Water working pressure.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, refer to individual valve Specification Sections for acceptable manufacturers.

2.2 MATERIALS

- A. Refer to individual valve Specification Sections.

2.3 VALVE ACTUATORS

- A. Valve Actuators - General:
 - 1. Provide actuators as shown on Drawings or specified.
 - 2. Counter clockwise opening as viewed from the top.
 - 3. Direction of opening and the word OPEN to be cast in handwheel or valve bonnet.
 - 4. Size actuator to produce required torque with a maximum pull of 80 LB at the maximum pressure rating of the valve provided and withstand without damage a pull of 200 LB on handwheel or chainwheel or 300 FT-LBS torque on the operating nut.
 - 5. Unless otherwise specified, actuators for valves to be buried, submerged or installed in vaults or manholes shall be sealed to withstand at least 20 FT of submergence.
 - 6. Extension stem:
 - a. Install where shown or specified.
 - b. Solid steel with actuator key and nut, diameter not less than stem of valve actuator shaft.
 - c. Pin all stem connections.
 - d. Center in valve box or grating opening band with guide bushing.
- B. Buried Valve Actuators:
 - 1. Provide screw or slide type adjustable cast iron valve box, 5 IN minimum diameter, 3/16 IN minimum thickness, and identifying cast iron cover rated for traffic load.
 - 2. Box base to enclose buried valve gear box or bonnet.
 - 3. Provide 2 IN standard actuator nuts complying with AWWA C500, Section 3.16.
 - 4. Provide at least 2 tee handle keys for actuator nuts, with 5 FT extension between key and handle.
 - 5. Extension stem:
 - a. Provide for buried valves greater than 4 FT below finish grade.
 - b. Extend to within 6 IN of finish grade.
 - 6. Provide concrete pad encasement of valve box as shown for all buried valves unless shown otherwise.

2.4 FABRICATION

- A. End Connections:
 - 1. Provide the type of end connections for valves as required in the Piping Schedules presented in Specification Section 15060 or as shown on the Drawings.
 - 2. Comply with the following standards:
 - a. Threaded: ASME B1.20.1.
 - b. Flanged: ASME B16.1, Class 125 unless otherwise noted or AWWA C207.
 - c. Bell and spigot or mechanical (gland) type: AWWA/ANSI C111/A21.11.
 - d. Soldered: ASME B16.18.
 - e. Grooved: Rigid joints per Table 5 of AWWA C606.
- B. Refer to individual valve Specification Sections for specifications of each type of valve used on Project.
- C. Nuts, Bolts, and Washers:
 - 1. Wetted or internal to be bronze or stainless steel: Exposed to be zinc or cadmium plated.

- 1 D. On Insulated Piping: Provide valves with extended stems to permit proper insulation application
2 without interference from handle.
- 3 E. Epoxy Interior Coating: Provide epoxy interior coating for all ferrous surfaces in accordance
4 with AWWA C550.

5 **PART 3 - EXECUTION**

6 **3.1 INSTALLATION**

- 7 A. Install products in accordance with manufacturer's instructions.
- 8 B. Painting Requirements: Comply with Specification Section 09905 for painting and protective
9 coatings.
- 10 C. Setting Buried Valves:
- 11 1. Locate valves installed in pipe trenches where buried pipe indicated on Drawings.
- 12 2. Set valves and valve boxes plumb.
- 13 3. Place valve boxes directly over valves with top of box being brought to surface of finished
14 grade.
- 15 4. Install in closed position.
- 16 5. Place valve on firm footing in trench to prevent settling and excessive strain on connection
17 to pipe.
- 18 6. After installation, backfill up to top of box for a minimum distance of 4 FT on each side of
19 box.
- 20 D. Support exposed valves and piping adjacent to valves independently to eliminate pipe loads
21 being transferred to valve and valve loads being transferred to the piping.
- 22 E. For grooved coupling valves, install rigid type couplings or provide separate support to prevent
23 rotation of valve from installed position.
- 24 F. Install electric or cylinder actuators above or horizontally adjacent to valve and gear box to
25 optimize access to controls and external handwheel.
- 26 G. For threaded valves, provide union on 1 side within 2 FT of valve to allow valve removal.
- 27 H. Install valves accessible for operation, inspection, and maintenance.

28 **3.2 ADJUSTMENT**

- 29 A. Adjust valves, actuators and appurtenant equipment to ensure proper operation.
- 30 B. Operate valve, open and close at system pressures.

31 **END OF SECTION**

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SECTION 15101
GATE VALVES

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Gate valves.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.
 - 2. Specification Section 15100 - Valves: Basic Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. ASTM International (ASTM):
 - a. A126, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
 - 2. American Water Works Association (AWWA):
 - a. C500, Standard for Metal-Seated Gate Valves for Water Supply Service.
 - b. C504, Standard for Rubber-Seated Butterfly Valves.
 - c. C509, Standard for Resilient-Seated Gate Valves for Water Supply Service.
 - d. C550, Standard for Protective Epoxy Interior Coatings for Valves and Hydrants.
 - 3. Manufacturers Standardization Society of the Valve and Fittings Industry Inc. (MSS):
 - a. SP-9, Spot Facing for Bronze, Iron and Steel Flanges.
 - b. SP-70, Cast Iron Gate Valves, Flanged and Threaded Ends.
 - c. SP-80, Bronze Gate, Globe, Angle and Check Valves.

1.3 DEFINITIONS

- A. OS&Y: Outside Screw and Yoke.
- B. NRS: Non-rising Stem.
- C. RS: Rising Stem.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the manufacturers listed in the applicable Articles below are acceptable.

2.2 VALVES: WATER (POTABLE)

- A. Resilient Wedge Gate Valves, 2 to 48 IN (Water Application):
 - 1. Comply with AWWA C515.
 - 2. Materials:
 - a. Stem and stem nut: Bronze.
 - 1) Wetted bronze parts in low zinc bronze.
 - 2) Aluminum bronze components: Heat treated per AWWA C504.
 - b. Body, gate: Ductile iron.
 - c. Resilient wedge: Fully encapsulated rubber wedge. Ethylene Propylene Diene Monomer (EPDM).

3. Design requirements:
 - a. Minimum 200 psi working pressure.
 - b. Buried: NRS, O-ring stem seal, 2 IN square operating nut.
 - c. Exposed: OS&Y, stuffing box stem seal, handwheel.
 - d. Counter clockwise open rotation.
 - e. Fusion bonded epoxy coating interior and exterior except stainless steel and bearing surfaces.
 - 1) Comply with AWWA C550.
 - 2) Wetted bronze parts in low zinc bronze.
 - 3) Aluminum bronze components: Heat treated per AWWA C504.
4. Acceptable manufacturers:
 - a. Clow.
 - b. Mueller.
 - c. American Flow Control.
 - d. M & H.
 - e. Or equal.

2.3 FABRICATION

- A. General: Provide valves with clear waterways the full diameter of the valve.
- B. Spot valves in accordance with MSS SP-9.

2.4 SOURCE QUALITY CONTROL

- A. Perform following tests, in accordance with AWWA C500, on valves constructed in accordance with AWWA C500:
 1. Operation test.
 2. Hydrostatic test.
- B. Perform following tests, in accordance with AWWA C509, on valves constructed in accordance with AWWA C509:
 1. Operation test.
 2. Shell test.
 3. Seal test.
 4. Hydrostatic test.
 5. Torque test.
 6. Leakage test.
 7. Pressure test.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. See Specification Section 15100.
- B. Do not install gate valves inverted or with the stems sloped more than 45 degrees from the upright unless the valve was ordered and manufactured specifically for this orientation.

END OF SECTION

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SECTION 15510
FIRE HYDRANT

PART 1 - GENERAL

1.1 SUMMARY

- A. Specification Section Includes:
 - 1. Dry-barrel fire hydrant.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Division 01 - General Requirements.
 - 2. Specification Section 15060 - Pipe and Pipe Fittings: Basic Requirements.

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Water Works Association (AWWA):
 - a. C502, Standard for Dry-Barrel Fire Hydrants.
 - b. M17, Installation, Operation and Maintenance of Fire Hydrants.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
 - 1. Kennedy, Guardian.
 - 2. Or approved equal.
- B. Submit request for substitutions in accordance with Specification Section 01640.

2.2 FIRE HYDRANT

- A. Design and Fabrication:
 - 1. Conform to AWWA C502.
 - 2. Provide with either compression or gate design.
 - 3. Provide with a 5 IN valve opening, nozzle section consisting of two 2-1/2 IN hose nozzles and one 4-1/2 IN pumper nozzle.
 - 4. Provide with water passages to permit full flow of water to minimize friction loss.
 - 5. Furnish with weep hole for positive draining to allow water to escape readily from standpipe when hydrant valve is closed.
 - 6. Designed to throttle flow when partially opened.
 - 7. Designed to allow removal of valve and valve stem without digging up hydrant.
 - 8. Suitable for depth of bury as required to set the outlet nozzle at 18 IN above finished grade..
 - 9. Furnish with mechanical (gland type) joint inlet connections.
 - 10. Design to break off at ground line when struck by a vehicle.
 - 11. Furnish with O-ring packing only.
 - 12. Furnish hose and pumper nozzles with threads conforming to standard threads used by local Fire Department.

1 **PART 3 - EXECUTION**

2 **3.1 INSTALLATION**

- 3 A. Install hydrants at locations indicated in accordance with AWWA M17 and the following:
- 4 1. Remove foreign material from barrel of hydrant before placement.
- 5 2. Install plumb and at same elevation as connecting pipe and main.
- 6 3. Place each hydrant on a slab of concrete not less than 6 IN thick and 18 IN SQ.
- 7 4. Block backside of hydrant, opposite pipe connection, with concrete firmly wedged between
- 8 hydrant and vertical face of undisturbed trench.
- 9 5. Place granular bedding material around base of hydrant to the dimensions shown in the
- 10 Drawings.
- 11 6. Firmly tamp carefully compacted backfill around hydrant to surface of ground and to a
- 12 distance of 5 FT in front of hydrant.

13 **3.2 COATINGS AND FINISHES**

- 14 A. Provide hydrant with below grade and above grade coatings as per manufacturer's coating
- 15 system:
- 16 1. Paint above grade shall be red.

17 **END OF SECTION**

CONTRACT FORMS

The following forms can be added to this Bid boilerplate to make it an actual contract.

[Fig. 136.10.3 Sample Contract Agreement](#)

[Fig. 136.10.4 Sample Contract Bond](#)

[Fig. 136.10.5 Sample Contractor's Acknowledgement](#)

CONTRACT AGREEMENT

THIS AGREEMENT, is made and entered into by and between, Jackson County, Missouri, Party of the First Part and hereinafter called the Owner, and

_____.

a _____ Party of the Second Part and hereinafter called the Contractor,

WITNESSETH

THAT WHEREAS, in accordance with law, the Owner has caused contract documents to be prepared and an Advertisement calling for bids to be published for and in connection with Jackson County Project: *STOENNER ROAD BRIDGE REPLACEMENT OVER FIRE PRAIRIE TRIBUTARY*, and

WHEREAS, the Contractor, in response to the Advertisement, has submitted to the Owner, in the manner and at the time specified, a sealed Bid in accordance with the terms of the Advertisement, and

WHEREAS, the Owner, in the manner prescribed by law, has opened, examined, and canvassed the Bid submitted, and has determined the aforesaid Contractor to be the lowest and best bidder for the work and has duly awarded to the said Contractor, a contract therefor, for the sum or sums named in the Contractor's Bid, a copy thereof being attached to and made a part of this contract.

NOW THEREFORE, in consideration of the compensation to be paid to the Contractor and of the mutual agreements herein contained, the parties to these presents have agreed and hereby agree, the Owner for itself and its successors, and the Contractor for itself, himself, or themselves, and its, his, or their successors and assigns, and its, his, or their executors and administrators, as follows:

ARTICLE I. That the Contractor shall: (a) furnish all tools, equipment, supplies, superintendence, transportation, and other construction accessories, services, and facilities; (b) furnish all materials, supplies, and equipment specified and required to be incorporated in and form a permanent part of the completed work; (c) provide and perform all necessary labor; and (d) in a good, substantial, and workmanlike manner and in accordance with the requirements, stipulations, provisions, and conditions of the contract documents as defined in the attached General Conditions, Special Conditions, and Technical Specifications, said documents forming the contract and being as fully a part thereof as if repeated verbatim herein, perform, execute, construct and complete all work included in and covered by the Owner's official award of this contract to the said Contractor, such award being based on the acceptance of the Owner of the Contractor's Bid.

ARTICLE II. That the Owner shall pay to the Contractor for the performance of the work embraced in this contract, and the Contractor will accept as full compensation therefore, the sum (subject to adjustment as provided by the contract) of

_____ (\$_____)

for all work covered by and included in the contract award and designated in the foregoing Article I; payment thereof to be made in cash or its equivalent, in the manner provided in the General Conditions.

CONTRACT AGREEMENT (cont.)

ARTICLE III. That the Contractor shall start work within ten (10) days following the date stipulated in a written order from the Owner to proceed with the work to be performed hereunder, and that the Contractor shall complete the work within the number of days, after the authorized starting date, stipulated in the attached Bid.

ARTICLE IV. That the Contractor expressly warrants that he has employed no third person to solicit or obtain this contract in his behalf, or to cause or produce the same to be obtained upon compensation in any way contingent, in whole or in part, upon such procurement; and that he has not paid, or promised or agreed to pay, to any third person, in consideration of such procurement, or in compensation for services in connection therewith any brokerage, commission, or percentage upon the amount receivable by him here-under; and that he has not, in estimating the contract price demanded by him, included any sum by reason of any such brokerage, commission, or percentage, and that all monies payable to him hereunder are free from obligation of any other person for services rendered, or supposed to have been rendered, in the procurement of this contract. He further agrees that any breach of this warranty shall constitute adequate cause for the annulment of this contract by the Owner and that the Owner may retain to its own use from any sums due or to become due hereunder an amount equal to any brokerage, commission, or percentage so paid, or agreed to be paid.

The Owner agrees to pay the Contractor in the manner and in the amount provided in the said specifications and Bid.

SALES TAX EXEMPTION

Jackson County, Missouri is an exempt entity under Section 144.062, RSMo, and the purchase of tangible personal property and materials to be incorporated into or consumed in the construction of this project, can be made on a tax-exempt basis as provided in that statute.

Jackson County will issue an exemption certificate to the contractor along with the contract. Sales tax paid due to the contractor's or any subcontractor's failure to take advantage of the county's tax exempt status will not be included in the Contractor's invoice to the County.

"Missouri Project Exception Certificate" (Form 5060) will be issued to the contractor and subcontractors working on the same project after the contract has been awarded.

State of Missouri

EXEMPTION FROM MISSOURI SALES AND USE TAX ON PURCHASES

ISSUED TO:

MISSOURI TAX I.D.
NUMBER: 13643347

COUNTY OF JACKSON
415 E 12TH ST RM G-1
KANSAS CITY, MO 64106-2706

EFFECTIVE DATE: 07/11/2002
EXPIRATION DATE: Non-Expiring

YOUR APPLICATION FOR SALES/USE TAX EXEMPT STATUS HAS BEEN APPROVED PURSUANT TO CHAPTER 144.303.1, RSMo. THIS LETTER IS ISSUED AS DOCUMENTATION OF YOUR EXEMPT STATUS.

PURCHASES BY YOUR AGENCY ARE NOT SUBJECT TO SALES OR USE TAX IF WITHIN THE CONDUCT OF YOUR AGENCY'S EXEMPT FUNCTIONS & ACTIVITIES. WHEN PURCHASING WITH THIS EXEMPTION, FURNISH ALL SELLERS OR VENDORS A COPY OF THIS LETTER. THIS EXEMPTION MAY NOT BE USED BY INDIVIDUALS MAKING PERSONAL PURCHASES.

A CONTRACTOR MAY PURCHASE AND PAY FOR CONSTRUCTION MATERIALS EXEMPT FROM SALES TAX WHEN FURFILLING A CONTRACT WITH YOUR AGENCY ONLY IF YOU AGENCY ISSUES A PROJECT EXEMPTION CERTIFICATE AND THE CONTRACTOR MAKES PURCHASES IN COMPLIANCE WITH THE PROVISIONS OF SECTION 144.062, RSMo.

SALES BY YOUR AGENCY ARE SUBJECT TO ALL APPLICABLE STATE AND LOCAL SALES TAXES. IF YOU ENGAGE IN THE BUSINESS OF SELLING TANGIBLE PERSONAL PROPERTY OR TAXABLE SERVICES AT RETAIL, YOU MUST OBTAIN A MISSOURI RETAIL SALES LICENSE AND COLLECT AND REMIT SALES TAX.

A CONTRACTOR MAY PURCHASE AND PAY FOR CONSTRUCTION MATERIALS EXEMPT FROM SALES TAX WHEN FULFILLING A CONTRACT WITH YOUR GOVERNMENTAL AGENCY ONLY IF YOUR GOVERNMENTAL AGENCY ISSUES A PROJECT EXEMPTION CERTIFICATE AND THE CONTRACTOR MAKES PURCHASES IN COMPLIANCE WITH THE PROVISION OF SECTION 144.062, RSMO.

THIS IS A CONTINUING EXEMPTION SUBJECT TO LEGISLATIVE CHANGES AND REVIEW BY THE DIRECTOR OF REVENUE. IF IT IS DETERMINED THAT YOUR AGENCY CEASES TO QUALIFY AS AN EXEMPT ENTITY, THIS EXEMPTION WILL CEASE TO BE VALID. THIS EXEMPTION IS NOT ASSIGNABLE OR TRANSFERRABLE. IT IS AN EXEMPTION FROM SALES AND USE TAXES ONLY AND IS NOT AN EXEMPTION FROM REAL OR PERSONAL PROPERTY TAX.

ANY ALTERATION TO THIS EXEMPTION LETTER RENDERS IT INVALID.

IF YOU HAVE ANY QUESTIONS REGARDING THE USE OF THIS LETTER, PLEASE CONTACT THE SALES/USE TAX SECTION, MISSOURI DEPARTMENT OF REVENUE, P.O. BOX 3300, EFFERSON CITY, MO 65105-0840, PHONE 573-751-2836.



MISSOURI DEPARTMENT OF
REVENUE

Project Exemption Certificate

Reset Form

Print Form

This form is to be completed and given to your contractor.

Exempt Entity and Project Information	Name of Exempt Entity Issuing the Certificate		Missouri Tax Exemption Number			
	JACKSON COUNTY, MISSOURI		1 3 6 4 3 3 4 7			
	Address		City		State	ZIP Code
	415 EAST 12TH STREET, ROOM G-1		KANSAS CITY		MO	64106
	E-mail Address					
	Project Number		Project Begin Date (MM/DD/YYYY)		Estimated Project End Date (MM/DD/YYYY)	
	3214		/ /		/ /	
	Description of Project					
	removal of the existing cast-in-place culvert and the installation of a double 10' x 8' pre-cast box culvert, including pre-cast end sections. Additional work tasks includes reshaping of the roadway shoulders and placement of rock blanket around the wingwalls to prevent erosion and all other incidental work.					
Contractor	Project Location		Certificate Expiration Date (MM/DD/YYYY)			
	SOUTH OF LONE JACK, JACKSON COUNTY, MISSOURI		/ /			
	Provide a signed copy of this certificate, along with a copy of the exempt entity's Missouri Sales and Use Tax Exemption Letter to each contractor or subcontractor who will be purchasing tangible personal property for use in this project. It is the responsibility of the exempt entity to ensure the validity of the information on the certificate. The exempt entity must issue a new certificate if any of the information changes.					
	Signature of Authorized Exempt Entity		Printed Name of Authorized Exempt Entity		Date (MM/DD/YYYY)	
Subcontractor			Eric L. Johnson, PE, Construction Manager		/ /	
	The Missouri exempt entity named above hereby authorizes the purchase, without sales tax, of tangible personal property to be incorporated or consumed in the construction project identified herein and no other, pursuant to Section 144.062, RSMo . Under penalties of perjury, I declare that the above information and any attached supplement is true, complete, and correct.					
	Name of Purchasing Contractor		Signature of Contractor		Date (MM/DD/YYYY)	
				/ /		
Address		City		State	ZIP Code	
Contractors - Present this to your supplier in order to purchase the necessary materials tax exempt. Complete the Subcontractor portion if extending the certificate to your subcontractor. The contractor must sign the form in the space provided below.						
Name of Purchasing Subcontractor						
Address		City		State	ZIP Code	
Signature of Contractor		Contractor's Printed Name		Date (MM/DD/YYYY)		
				/ /		

Form 5060 (Revised 11-2019)

Taxation Division
P.O. Box 358
Jefferson City, MO 65105-0358

Phone: (573) 751-2836
Fax: (573) 522-1666
E-mail: salestaxexemptions@dor.mo.gov

Visit <http://dor.mo.gov/business/sales/sales-use-exemptions.php> for additional information.



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PERFORMANCE BOND

Project Number: 21KC40005
Project Title: STOENNER ROAD BRIDGE OVER BRANCH OF PRAIRIE FIRE CREEK
Invitation to Bid No. 24-068

KNOW ALL MEN BY THESE PRESENTS:

That _____,

as PRINCIPAL (CONTRACTOR), and _____, (SURETY),
licensed to do business as such in the State of Missouri, hereby bind themselves and their respective heirs,
executors, administrators, successors, and assigns unto Jackson County, Missouri, a constitutionally home rule
chartered governmental organization, (OWNER), as obligee, in the penal sum of

_____ Dollars (\$_____)
for the payment whereof CONTRACTOR and SURETY bind themselves, their heirs, executors, administrators,
successors and assigns, jointly and severally, firmly by these presents.

WHEREAS,

CONTRACTOR has entered into a Contract with OWNER for _____ which
Contract, including any present or future amendment thereto, is incorporated herein by reference and is
hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if CONTRACTOR shall
promptly and faithfully perform said Contract including all duly authorized changes thereto, according to all
the terms thereof, including those under which CONTRACTOR agrees to pay legally required wage rates
including the prevailing hourly rate of wages in the locality, as determined by the Department of Labor and
Industrial Relations or by final judicial determination, for each craft or type of workman required to execute
the Contract and, further, shall defend, indemnify, and hold harmless OWNER from all damages, including but
not limited to liquidated damages, loss and expense occasioned by any failure whatsoever of said
CONTRACTOR and SURETY to fully comply with and carry out each and every requirement of the Contract,
then this obligation shall be void; otherwise, it shall remain in full force and effect.

WAIVER. That SURETY, for value received, hereby expressly agrees that no change, extension of time,
alteration or addition to the terms of the Contract or to the Work to be performed thereunder, shall in any way
affect the obligations of this Bond; and it does hereby waive notice of any such change, extension of time, or
alteration or addition to the terms of the Contract or the Work to be performed thereunder.

IN WITNESS WHEREOF, the above parties have executed this instrument the ____ day of

_____, 2024.

CONTRACTOR

Name, address and facsimile number of Contractor

I hereby certify that I have authority to execute
this document on behalf of Contractor.

By: _____

Title: _____

(Attach corporate seal if applicable)

SURETY

Name, address and facsimile number of Surety:

I hereby certify that (1) I have authority to execute this document on behalf of Surety; (2) Surety has an A.M. Best rating of A- or better; (3) Surety is named in the current list of "Companies Holding Certificates of Authority as Acceptable Reinsuring Companies: as published in Circular 570 (most current revision) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury; and (4) Surety is duly licensed to issue bonds in the State of Missouri and in the jurisdiction in which the Project is located.

By: _____

Title: _____

Date: _____

(Attach seal and Power of Attorney)

REVENUE CERTIFICATE

I hereby certify that there is a balance otherwise unencumbered to the credit of the appropriation to which this contract is chargeable, and a cash balance otherwise unencumbered in the treasury from which payment is to be made, each sufficient to meet the obligation of

\$ _____, which is hereby authorized.

Manager, Division of Finance

ACCOUNT NUMBER(S) TO BE CHARGED:

Department	Account Number	Amount

FMS CONTRACT NUMBER ASSIGNED TO THIS CONTRACT: _____

NOTICE TO CONTRACTORS

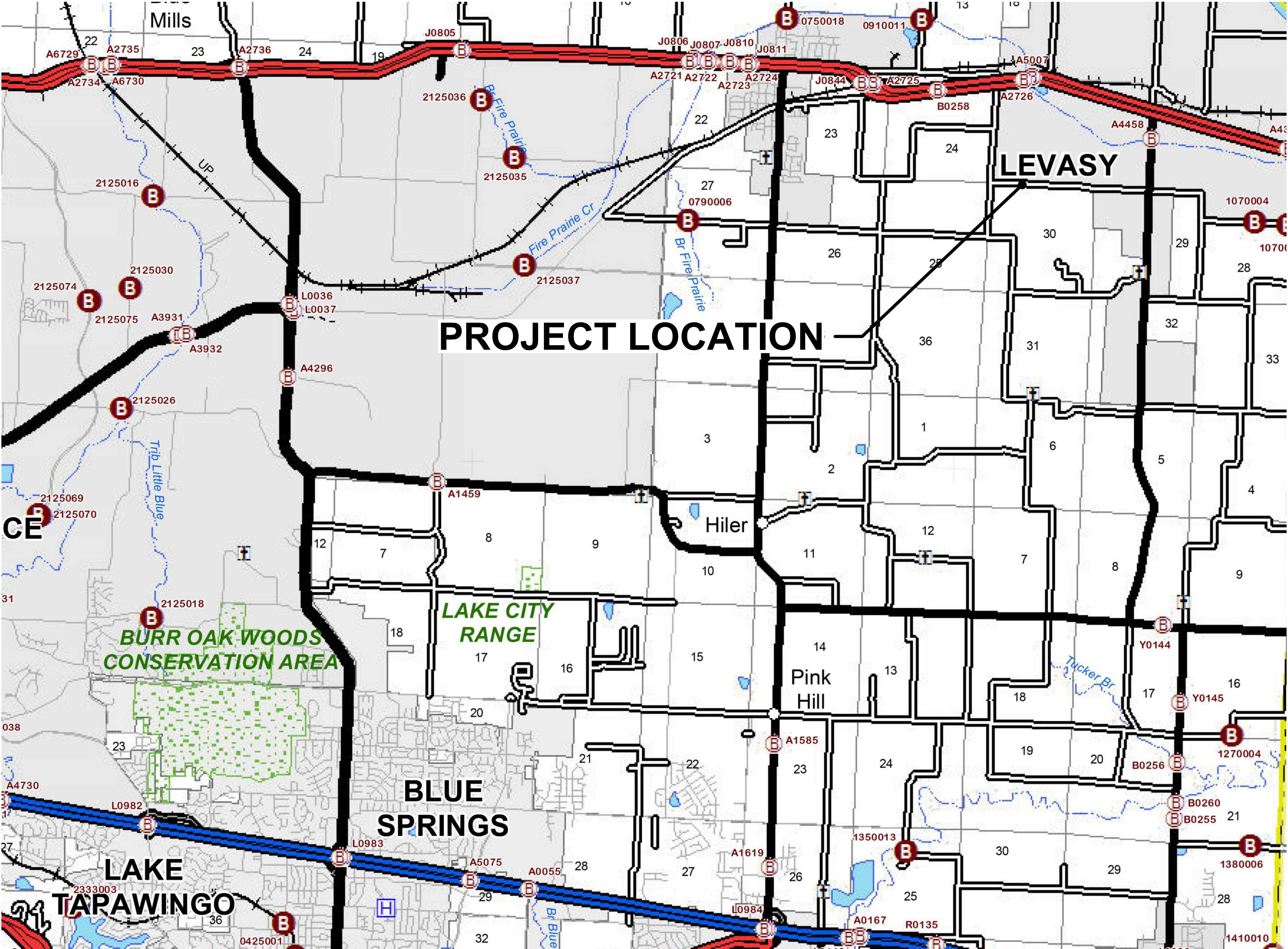
Under the laws of the State of Missouri, any changes made in this contract must be made in writing, approved of record by the County Legislature, Certified by the Manager, Division of Finance, and all made a matter of record before the County is liable therefore.

Manager, Division of
Finance Jackson
County, Missouri

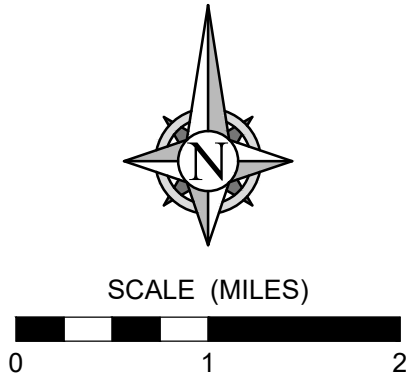
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STOENNER RD. BRIDGE OVER BRANCH OF FIRE PRAIRIE CREEK
BRO-B048(059)
FOR
JACKSON COUNTY, MISSOURI

BRIDGE NO. 1020002
24' BRIDGE & ASPHALT SURFACE



SECTION 19, T50N, R29W



COUNTY JACKSON
ROUTE STOENNER RD.
PROJECT BRO-B048(059)
JOB NO. 21KC40005

DESIGN DESIGNATION
ADT (2021) 45
DESIGN ADT. (2041) 68
AADT TRUCK 5%
DESIGN SPEED 35 MPH
D (DIRECTION) 50%

FUNCTIONAL CLASSIFICATION
RURAL LOCAL

LENGTH OF PROJECT
BEGINNING OF PROJECT 10+64.24
END OF PROJECT 15+35.36
APPARENT LENGTH 471.12 FEET
EQUATIONS & EXCEPTIONS -
TOTAL CORRECTIONS -
NET LENGTH OF PROJECT 0.09 MILES
STATE LENGTH -
FEDERAL LENGTH 0.1 MILES

INDEX OF SHEETS	
DESCRIPTION	SHEET NO.
COVER SHEET	1
TYPICAL SECTIONS	2
ROADWAY QUANTITIES & NOTES	3
COVER SHEET	4
RIGHT-OF-WAY PLAN	5
CHANNEL PLAN & PROFILE	6
WATERLINE PLAN & PROFILE	7
CHANNEL STABILIZATION HEADER	8
TRAFFIC CONTROL PLAN	9
EROSION CONTROL & GRADING PLAN	10
EROSION CONTROL DETAILS	11-12
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BRIDGE PLAN & PROFILE	14
BRIDGE QUANTITIES & NOTES	15
END BENT NO. 1	16-17
END BENT NO. 2	18-19
DETAILS OF NU 35 GIRDERS SPAN 1-2	20
DETAILS OF PRESTRESSED PANELS	21
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BILL OF REINFORCING STEEL	25
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CALL OR CLICK 3 DAYS BEFORE YOU DIG!
MISSOURI
ONE CALL 800.872.8727
1-800-DIG-RITE or 811
www.mo1call.com

CAUTION:
INFORMATION ON THIS DRAWING CONCERNING TYPE & LOCATION OF
UNDERGROUND & OTHER UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL
INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN
DETERMINATION AS TO THE TYPE & LOCATION OF UNDERGROUND & OTHER
UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

JACKSON COUNTY DEPARTMENT OF PUBLIC WORKS :
PUBLIC WORKS DIRECTOR: BRIAN GADDIE, PE
PROJECT MANAGER: ERIC JOHNSON, PE, ENV SP
CHIEF ENGINEER: EARL NEWILL, PE

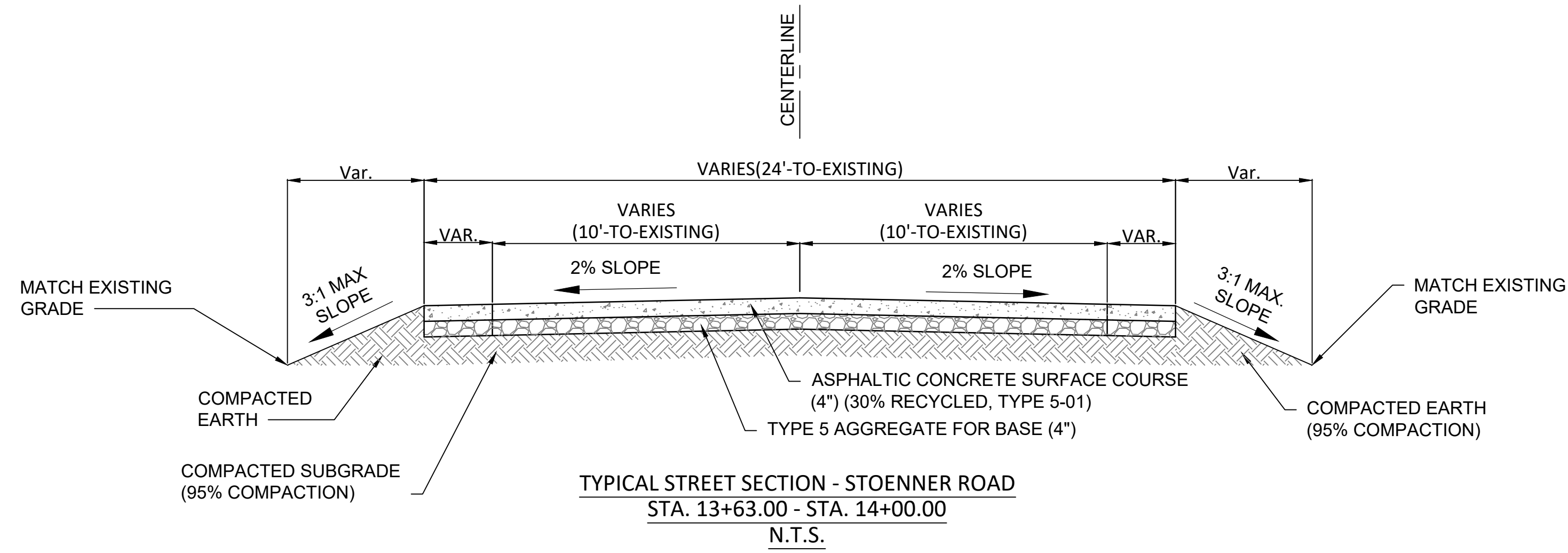
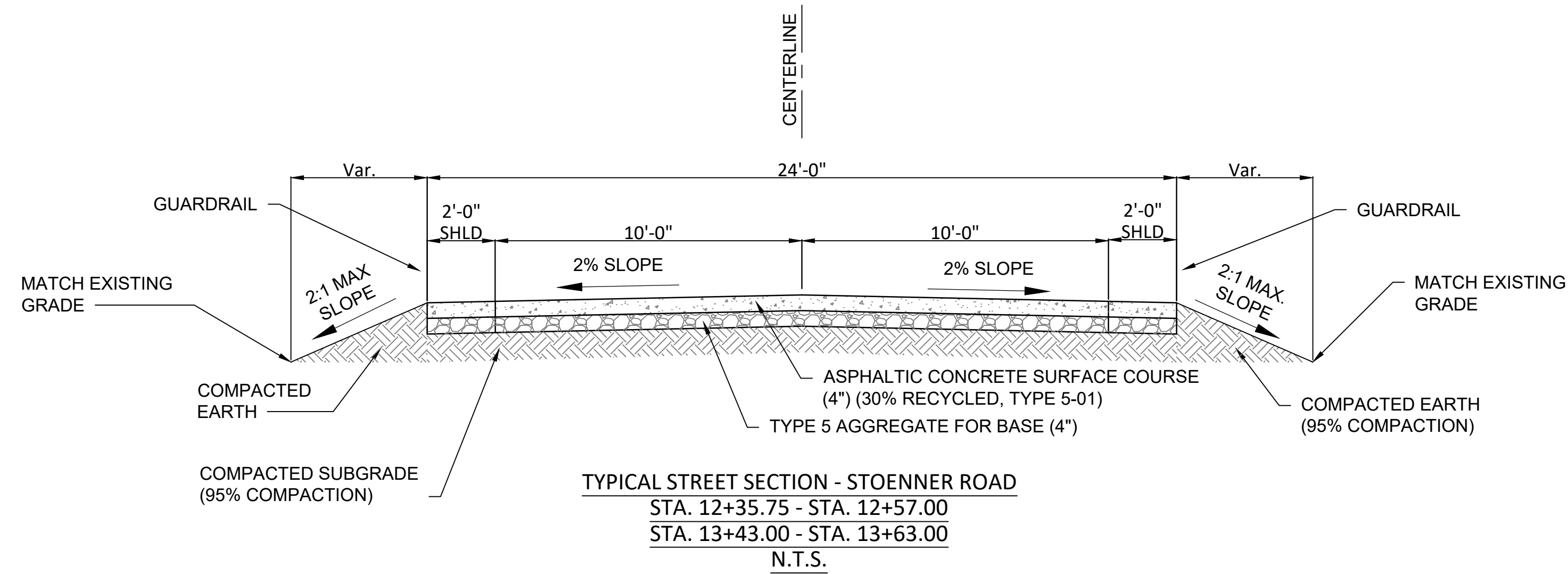
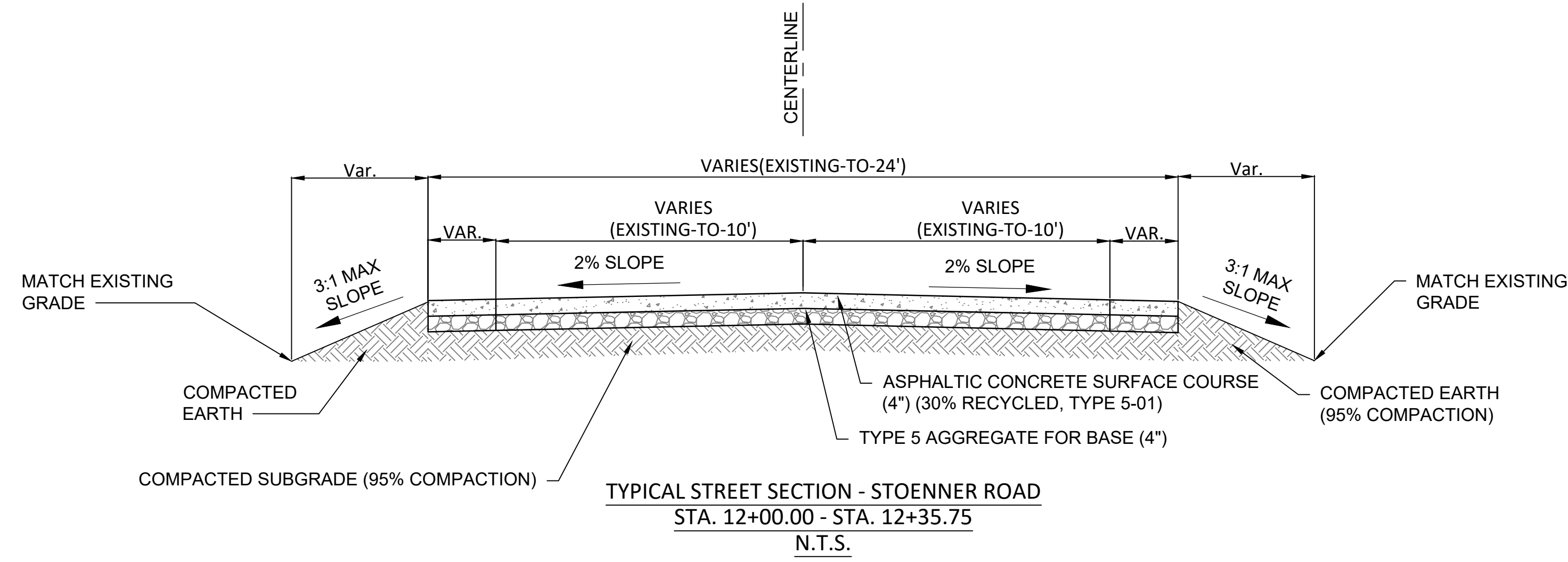
COUNTY
SUBMITTED
DIRECTOR OF PUBLIC WORKS
DATE 6-18-24



DRAWING INFO.	
NO.	DESCRIPTION
BY	DATE
FIELD BY:	FIELD DATE:
DRAWN BY:	NO. 21KC40005
CHECK BY:	DATE: 1/16/2024
DATE:	FIELD BOOK:
FIELD BOOK:	JOB NUMBER:
JOB NUMBER:	

COVER SHEET
STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER
1
OF 31



REVISIONS				DRAWING INFO.	
NO.	DESCRIPTION	BY	DATE	FIELD BY:	
				DRAWN BY:	NDO
				CHECK BY:	GDS
				DATE:	1/16/2024
				FIELD BOOK:	
				JOB NUMBER:	21HCA0005

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TYPICAL SECTIONS

STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER
2
OF 31

BRO-B048(059) Stoenner Road Bridge Replacement over Prairie Fire Tributary Bridge No. 1020002				
SUMMARY OF QUANTITIES				
ITEM	Item No.	BID ITEM	UNITS	QUANTITY
1	201-99.19	CLEARING AND GRUBBING (.40 AC)	ACRE	0.4
2	202-20.10	REMOVAL OF IMPROVEMENTS	LS	1
3	203-50.00	UNCLASSIFIED EXCAVATION	CUYD	152
4	203-55.00	EMBANKMENT IN PLACE	CUYD	1728
5	304-05.04	TYPE 5 AGGREGATE FOR BASE (4 IN. THICK)	SQYD	287
6	403-01.01	ASPHALTIC CONCRETE MIXTURE PF 64-22 (SP125C MIX)	TON	62.42
7	603-99.01	WATER LINE RELOCATION	LS	1
8	606-23.00A	TRANSITION SECTION, 6.5 FT. POSTS	EA	4
9	606-30.15	TYPE A CRASHWORTHY END TERMINAL	EA	4
10	611-30.20	FURNISHING TYPE 2 ROCK BLANKET	CUYD	728
11	611-30.40	PLACING TYPE 2 ROCK BLANKET	CUYD	728
12	618-10.00	MOBILIZATION	LS	1
13	624-01.04A	SEPARATION GEOTEXTILE	SQYD	1578
14	627-40.00	CONTRACTOR FURNISHED SURVEYING AND STAKING	LS	1
15	703-42.14	CLASS B-2 CONCRETE (CHANNEL STABILIZATION HEADER)	CUYD	121.5
16	706-10.00	REINFORCING STEEL	LF	3730
17	805-10.00A	SEEDING - COOL SEASON GRASSES	ACRE	0.4
18	806-10.05	ROCK DITCH CHECK	LF	175
19	806-10.19	SILT FENCE	LF	653
		TRAFFIC CONTROL ITEMS		
20	616-10.30	TYPE III MOVABLE BARRICADE	EA	6
21	903-99.04	TEMPORARY TRAFFIC CONTROL SIGNING	SQFT	45.0

NOTES:

QUANTITIES SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE OWNER AND ARE USED SOLELY FOR THE PURPOSE OF COMPARING BIDS AND AWARDING THE CONTRACT, AND MAY OR MAY NOT REPRESENT THE ACTUAL QUANTITIES ON THE JOB, SEE SPECIFICATIONS.

ANY ITEMS NOT SHOWN IN BID TAB, SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT FORM 106, TO MISSOURI DEPARTMENT OF NATURAL RESOURCES, HISTORIC PRESERVATION PROGRAM FOR ANY BORROW AREAS TO BE USED ON THIS PROJECT.

LEGEND

(USED IN PLANS)

-----	EXISTING CONTOUR (MAJOR)	✉	EXISTING MAILBOX
-----	EXISTING CONTOUR (MINOR)	• GTPST	EXISTING GATE POST
-----	EXISTING FEATURE	□	EXISTING STORM INLET
-----X-----	EXISTING FENCE	▲	EXISTING WATER METER
-----o-----o-----o-----	EXISTING GUARDRAIL	⋈	EXISTING WATER VALVE
-----	SECTION LINE	⦿	EXISTING FIRE HYDRANT
-----	EXISTING PROPERTY LINE	●	EXISTING SANITARY MANHOLE
-----	EXISTING EASEMENT	⚡	EXISTING POWER POLE
-----STR-----	EXISTING STORM WATER	☀	EXISTING LIGHT POLE
-----G-----	EXISTING GAS LINE	←	EXISTING GUY WIRE ANCHOR
-----W-----	EXISTING WATER LINE	■	EXISTING TELEPHONE PEDESTAL
-----S-----	EXISTING SANITARY SEWER	▼ MS	EXISTING SIGN
-----E-----	EXISTING UNDERGROUND ELECTRIC	⦿ MS	EXISTING TREE
-----OHE-----	EXISTING OVERHEAD ELECTRIC	▲ CP	CONTROL POINT
-----T-----	EXISTING UNDERGROUND TELEPHONE	○	FOUND CORNER
-----OHT-----	EXISTING OVERHEAD TELEPHONE	⦿	EXISTING BENCHMARK

NOTE:

DASHED OR SCREENED SYMBOL INDICATES EXISTING FEATURE.

GENERAL NOTES:

DESIGN SPECIFICATIONS:

2019 AASHTO GUIDELINES FOR GEOMETRIC DESIGN OF LOW-VOLUME LOCAL ROADS (ADT5400)

CONSTRUCTION SPECIFICATIONS:

MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION

MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION

DESIGN UNIT STRESSES:

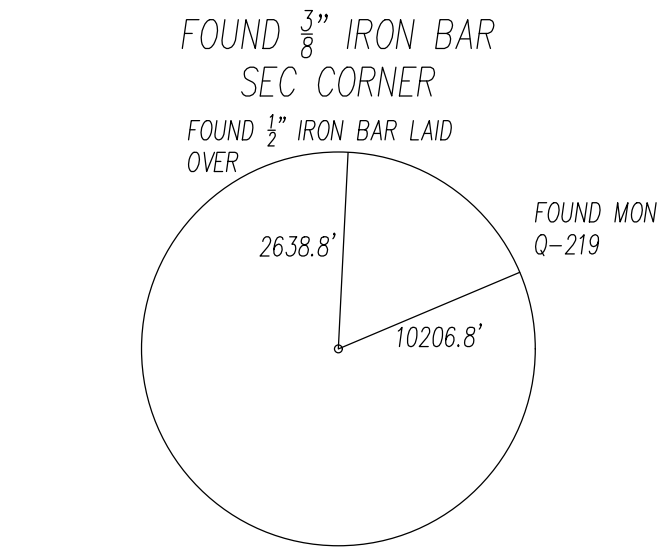
CLASS B-2 CONCRETE (CHANNEL STABILIZATION HEADER)

f_c = 4,000 p.s.i.

NOTES:

- EXISTING UTILITIES AND UNDERGROUND INSTALLATIONS HAVE BEEN LOCATED TO THE GREATEST EXTENT PRACTICAL THROUGH REVIEW OF CONSTRUCTION PLANS AND SURFACE OBSERVATIONS. THE CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LINES AND GRADES OF EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY UPON DISCOVERING A DISCREPANCY BETWEEN THE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITIONS. CONTACT ONE CALL.
- THE CONTRACTOR MUST COORDINATE CONSTRUCTION WITH THE NECESSARY AUTHORITIES.
- NO WORK SHALL COMMENCE UNTIL ALL NECESSARY PERMITS ARE OBTAINED BY THE OWNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LINE AND GRADE STAKES.
- CONTRACTOR SHALL REMOVE, PRESERVE, AND REPLACE ALL SIGNS, MAIL BOXES, FENCES, METAL FLAG POLE BASES AND THE LIKE, WITHIN THE LIMITS OF THE PROPOSED IMPROVEMENTS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO CONSTRUCTION.
- ALL TRAFFIC WAYS INCLUDING DRIVEWAYS, ALLEYWAYS, ETC., SHALL REMAIN ACCESSIBLE TO RESIDENTIAL AND EMERGENCY VEHICLES DURING PROJECT DURATION.
- ALL CONSTRUCTION AND EXCAVATION ACTIVITIES SHALL BE CONFINED TO EASEMENTS, ROAD RIGHT-OF-WAY, AND/OR WORK AREA LIMITS AS SHOWN ON DRAWINGS.
- CONTRACTOR SHALL RAISE OR LOWER ALL AFFECTED MANHOLE RIMS AND VALVE BOXES IN THE WORK AREA TO MATCH PROPOSED GRADE.
- ALL AREAS DISTURBED BY CONSTRUCTION ARE FIRST TO BE FINE GRADED AND THEN FOLLOWED BY SEED AND STRAW MULCH, UNLESS OTHERWISE NOTED. OVER, MIN. 4" TOPSOIL STOCKPILED FROM SITE OR HAULED IN AS REQUIRED.
- PROVIDE POSITIVE DRAINAGE FROM ALL IMPROVED AREAS, SO THAT RUNOFF DRAINS TO DRAIN WAYS.
- ALL CONTOURS AND SPOT ELEVATIONS SHOWN ARE FINISH GRADE.
- ANY DAMAGE TO EXISTING STRUCTURES, VEGETATION, OR IMPROVEMENTS RESULTING FROM NEW CONSTRUCTION ACTIVITIES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- ALL SIDEWALKS AND ADA RAMPS SHALL BE IN ACCORDANCE WITH ADA REGULATIONS.
- CONTRACTOR TO PROTECT ANY STORM INLETS, THAT RECEIVE STORM WATER FROM THE AREA OF CONSTRUCTION, FROM SEDIMENT. EROSION CONTROL DEVICES SHALL BE MAINTAINED DURING THE WHOLE CONSTRUCTION PERIOD BY THE CONTRACTOR. ALL EROSION CONTROL DEVICES, NOT LISTED IN THE PLANS, SHALL BE INCIDENTAL TO CONSTRUCTION.
- ALL TRENCHES, WHICH LIE UNDER PROPOSED PAVEMENT, OR LIE WITHIN TWO FEET OF BACK OF CURB, SHALL BE BACKFILLED TO PAVEMENT SUB-GRADE WITH COMPACTED GRANULAR BACK FILL.
- TRENCHES SHALL BE COMPACTED TO 95% STANDARD PROCTOR WHEN PIPES ARE LAID IN FILL.
- ALL REMOVALS NECESSARY TO COMPLETE THE PROJECT AS SHOWN ON THE PLANS, SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- EMBANKMENT IN PLACE SHALL INCLUDE HAULING AND REMOVING MATERIAL FROM/TO THE SITE, PLACEMENT AND COMPACTION OF MATERIAL AND EXCAVATION OF DITCHES TO MAKE GRADE SHOWN ON PLANS. PAYMENT WILL ONLY BE MADE FOR FILL MATERIAL PLACED PER PLAN REQUIREMENTS.

CONTROL POINT & BENCHMARK DATA



SW CORNER SECTION 19, T50N, R29W

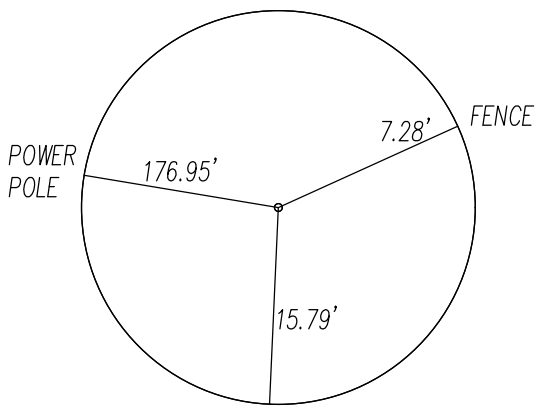
N: 1076458.96 (GROUND)

E: 2884868.07 (GROUND)

N: 1076458.9600' (GRID)

E: 2884868.0730' (GRID)

CONTROL POINT ONLY 101



℄ OF STOENNER ROAD

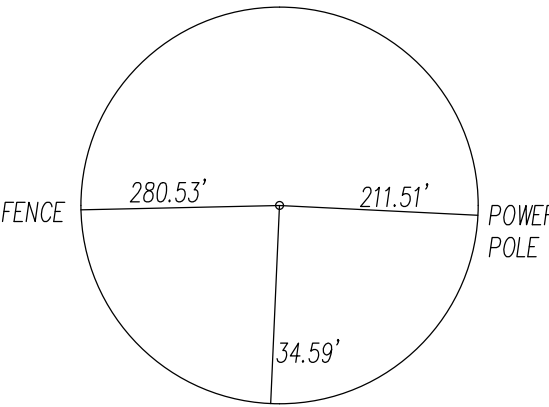
N: 1052247.95 (GROUND)

E: 1471638.47 (GROUND)

N: 1076436.3160' (GRID)

E: 2886187.5850' (GRID)

BENCH MARK
RR SPIKE IN POWER POLE



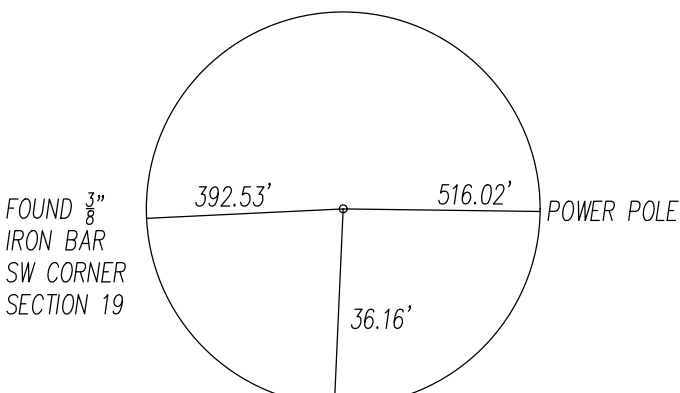
℄ OF STOENNER ROAD

N: 1076437.8080

E: 2886578.4670

EL: 733.471'

CONTROL POINT ONLY 100



℄ OF STOENNER ROAD

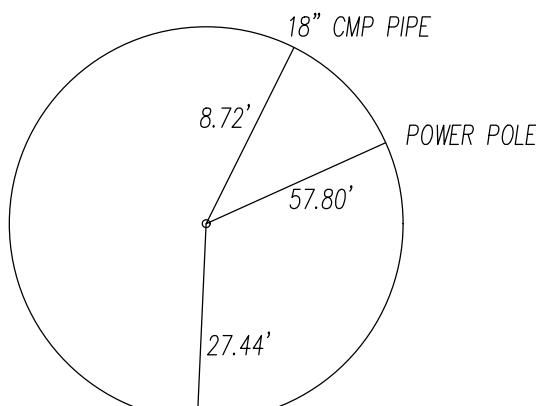
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E: 2885260.16 (GROUND)

N: 1076477.7500' (GRID)

E: 2885260.1580' (GRID)

CONTROL POINT ONLY 102



℄ OF STOENNER ROAD

N: 1076403.60 (GROUND)

E: 2886737.04 (GROUND)

N: 1076403.6030 (GRID)

E: 2886737.0350 (GRID)

JACKSON COUNTY, STOENNER BRIDGE
REPLACEMENT

A/E PROJECT NO.21KC40005

HORIZONTAL DATUM
MISSOURI STATE PLANE COORDINATE SYSTEM,
1983
MISSOURI WEST ZONE, 2011 ADJUSTMENT

VERTICAL DATUM:
NAVD 88 W GEOID 18
CONTROL WAS ESTABLISHED VIA THE MISSOURI
VRS NETWORK

COMBINED ADJUSTMENT FACTOR: 0.9999842
(1/x=1.00000158)
POINTS AND LINE WORK ARE GROUND DISTANCES
SCALED ABOUT THE ORIGIN (0,0,0)

UTILITIES INFORMATION

CENTURY LINK
1100 WALNUT ST #500
KANSAS CITY, MO 64105
800-253-8353

BUCKNER SEWER TREATMENT PLANT
2500 N Odonnell Rd,
Buckner, MO 64016
816-650-3034

JACKSON COUNTY PWSd 16
KYLE LEEDS
100 N BUCKNER TARSNEY ROAD
SIBLEY, MO 64088
816-650-5537

ELECTRI
KYLE LEEDS
100 N BUCKNER TARSNEY ROAD
SIBLEY, MO 64088
XXXXX

ROADWAY QUANTITIES & NOTES

STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)

SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER

3

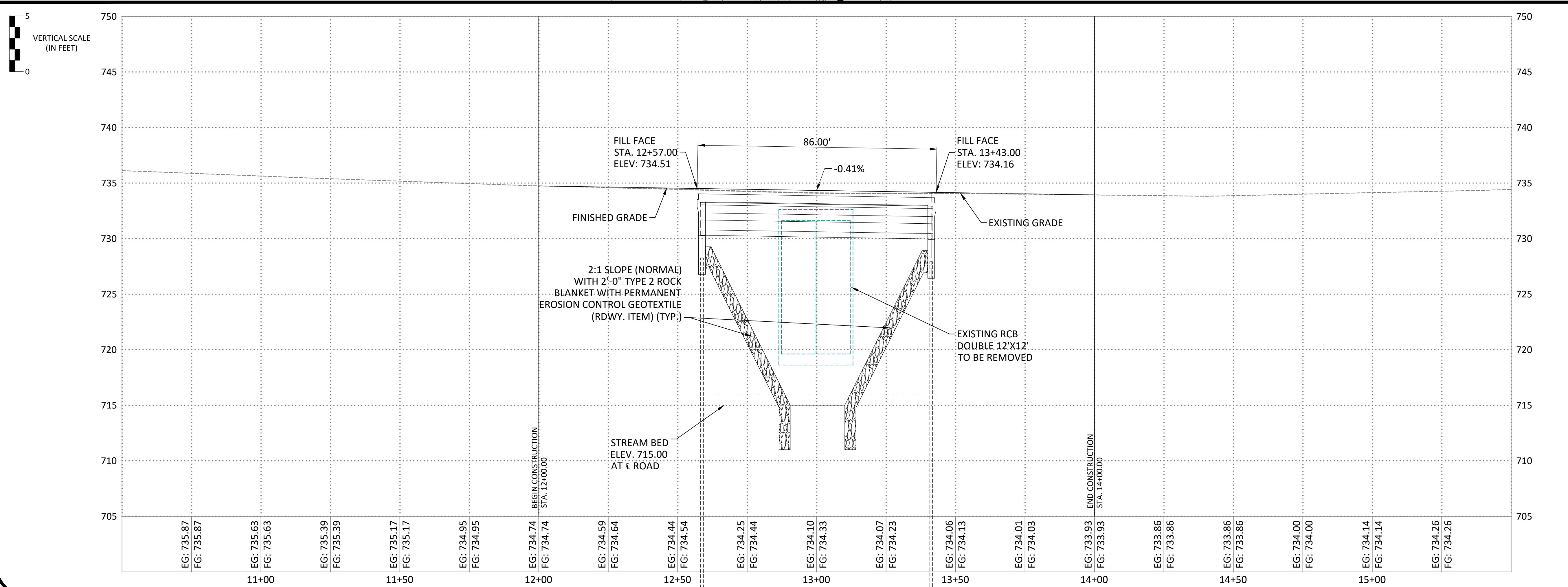
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		FIELD BY:	NDO
		DRAWN BY:	GDS
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SHEET NUMBER

4

OF 31

ROADWAY PLAN & PROFILE

STOENNER ROAD BRIDGE REPLACEMENT

BRO-B048(059)

SEC. 19, T50N, R29W

JACKSON COUNTY, MISSOURI

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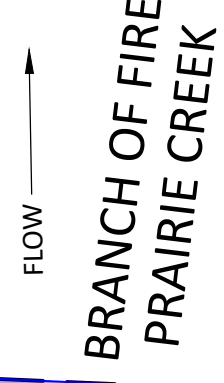
STAMP

STATE OF MISSOURI
GARY D. STRACK
NUMBER E2991
EXPIRATION 04/17/2024
PROFESSIONAL ENGINEER

REVISIONS		DRAWING INFO.	
NO.	DESCRIPTION	BY	DATE
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	DRAWN BY:		GDS
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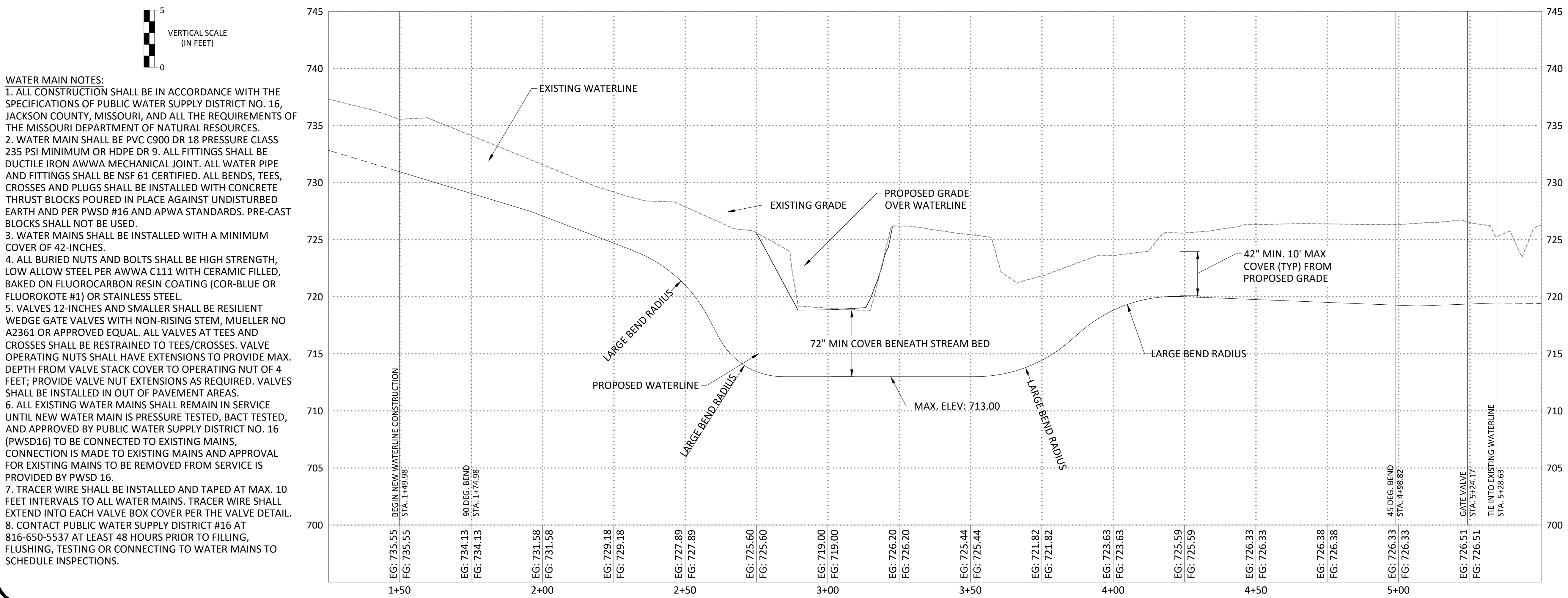
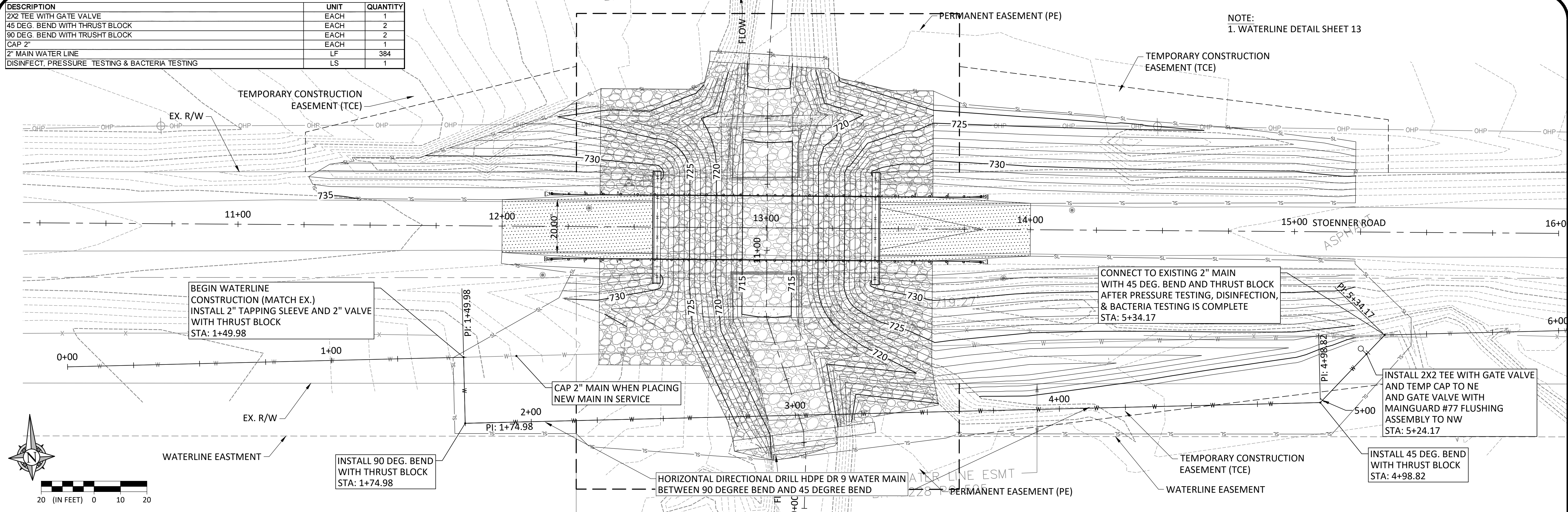
1 MERSHON, BRADLEY



RIGHT-OF-WAY PLAN
STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER
5
OF 31

DESCRIPTION	UNIT	QUANTITY
2X2 TEE WITH GATE VALVE	EACH	1
45 DEG. BEND WITH THRUST BLOCK	EACH	2
90 DEG. BEND WITH TRUSHT BLOCK	EACH	2
CAP 2"	EACH	1
2" MAIN WATER LINE	LF	384
DISINFECT, PRESSURE TESTING & BACTERIA TESTING	LS	1



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				DATE:	1/16/2024
				FIELD BOOK:	
				JOB NUMBER:	21KCA0005

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WATERLINE PLAN & PROFILE
STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER
7
OF 31



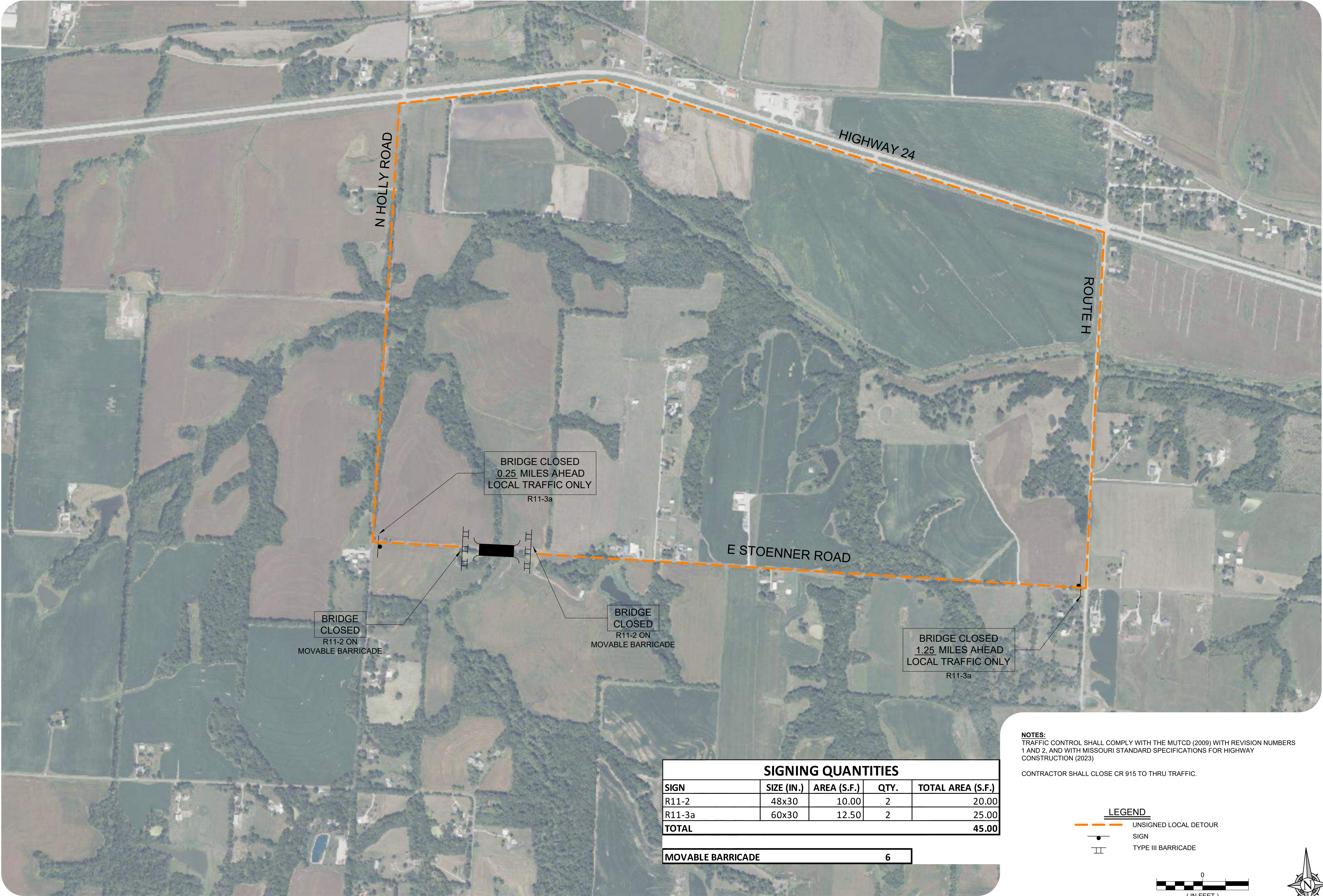
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NO.	DESCRIPTION	BY	DATE	FIELD BY:
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				DATE: 1/16/2024
				FIELD BOOK:
				JOB NUMBER: 21HCA0005

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GRADE CONTROL HEADER
STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

8
OF 31





SIGNING QUANTITIES				
SIGN	SIZE (IN.)	AREA (S.F.)	QTY.	TOTAL AREA (S.F.)
R11-2	48x30	10.00	2	20.00
R11-3a	60x30	12.50	2	25.00
TOTAL				45.00
MOVABLE BARRICADE			6	

NOTES:
TRAFFIC CONTROL SHALL COMPLY WITH THE MUTCD (2009) WITH REVISION NUMBERS 1 AND 2, AND WITH MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (2023)

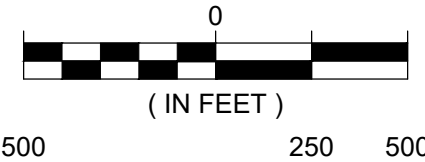
CONTRACTOR SHALL CLOSE CR 915 TO THRU TRAFFIC.

LEGEND

UNSIGNED LOCAL DETOUR

SIGN

TYPE III BARRICADE



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ANDERSONENGINEERING.COM 2022

STATE OF MISSOURI
GARY D. STRACK
NUMBER E-20015
1/17/2024
PROFESSIONAL ENGINEER

REVISIONS		DRAWING INFO.	
NO.	DESCRIPTION	BY	DATE

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FIELD BOOK:	
JOB NUMBER:	21KC40005

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TRAFFIC CONTROL PLAN
STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER
9
OF 31



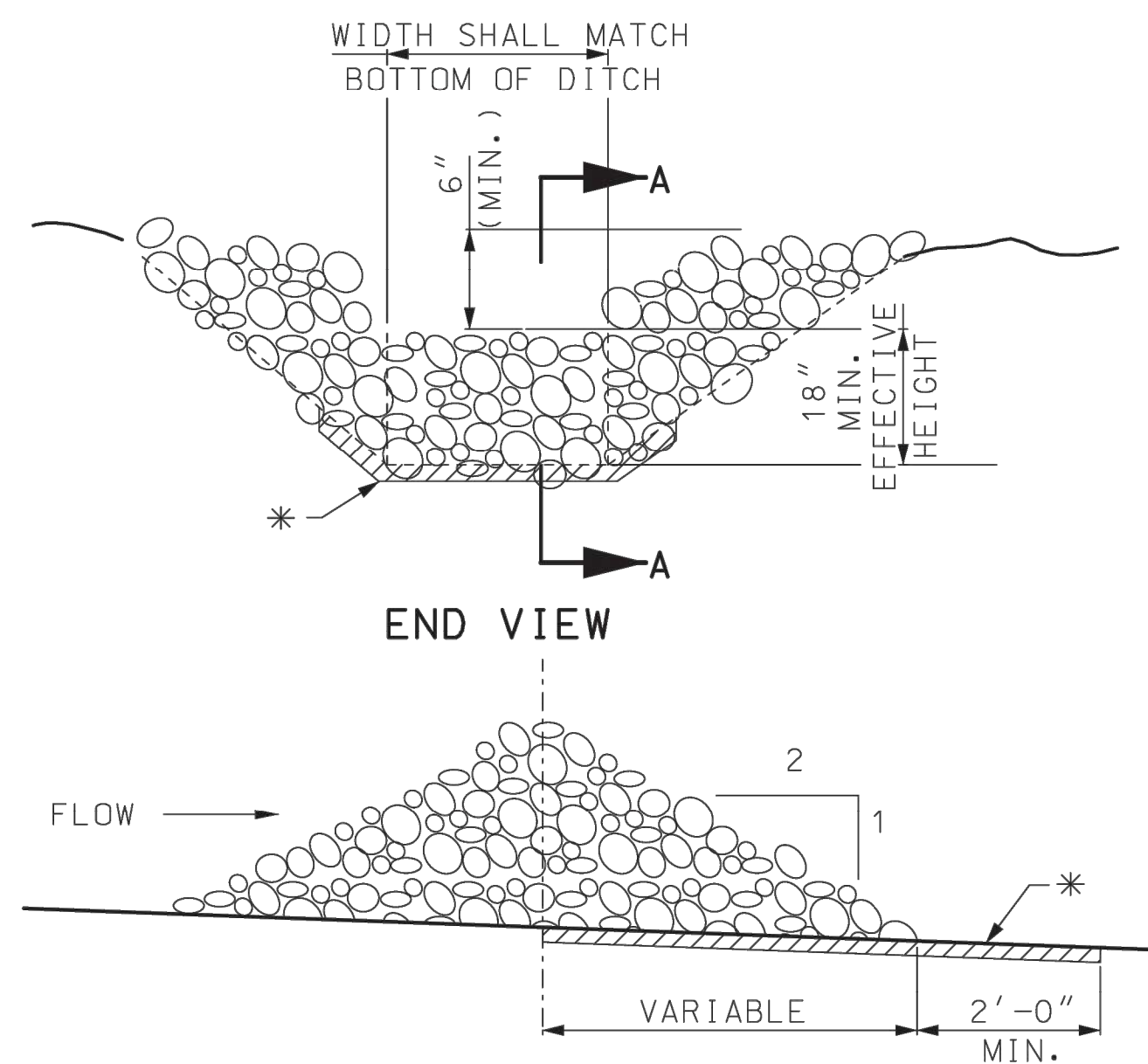
EROSION CONTROL QUANTITIES		
ITEM	UNIT	QUANTITY
SILT FENCE	LF	653
SEEDING	ACRE	0.36

REVISIONS				DRAWING INFO.	
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				DATE:	1/16/2024
				FIELD BOOK:	
				JOB NUMBER:	21KC40005

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ROCK DITCH CHECK



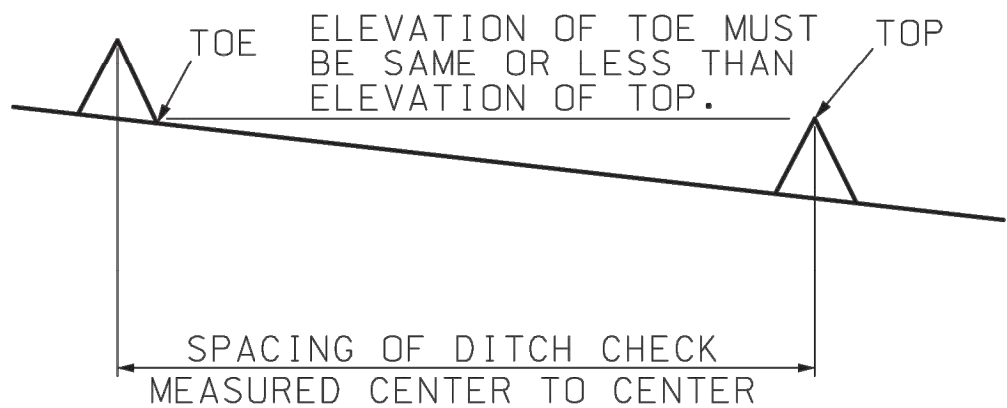
* GEOTEXTILE LINING MAY BE INSTALLED AS REQUIRED BY THE ENGINEER.

NOTE:

ROCK DITCH CHECK IN THE CLEAR ZONE SHALL BE REMOVED OR LEVELED (IF ALLOWABLE) AFTER THE VEGETATION HAS SUFFICIENTLY MATURED TO PROTECT THE DITCH OR SWALE.

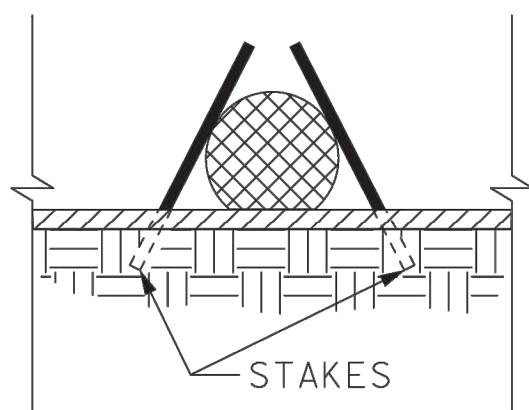
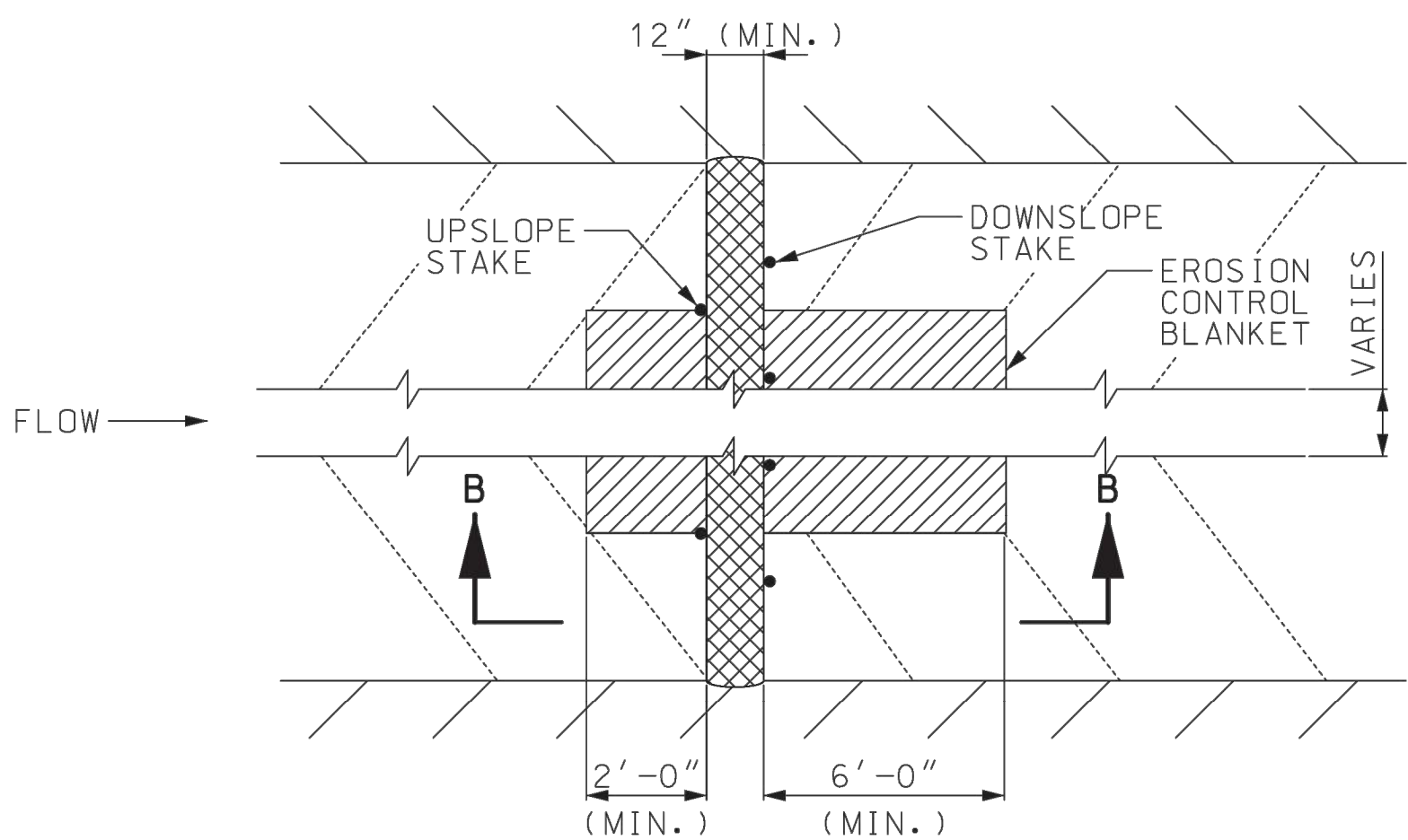
EXAMPLE DITCH CHECK SPACING FOR STANDARD HEIGHTS (FT.)

DITCH @ SLOPE %	SPACING FOR 9" EFF. HEIGHT	SPACING FOR 18" EFF. HEIGHT
0.5	150	300
1.0	75	150
1.5	50	100
2.0	37	75
2.5	30	60
3.0	25	50
3.5	21	43
4.0	19	38
4.5	16	33
5.0	15	30
5.5	13	27
6.0	12	25
6.5	11	23
7.0	10	21
7.5	10	20
8.0	9	19
8.5	9	18
9.0	8	17
9.5	8	16
10.0	7	15

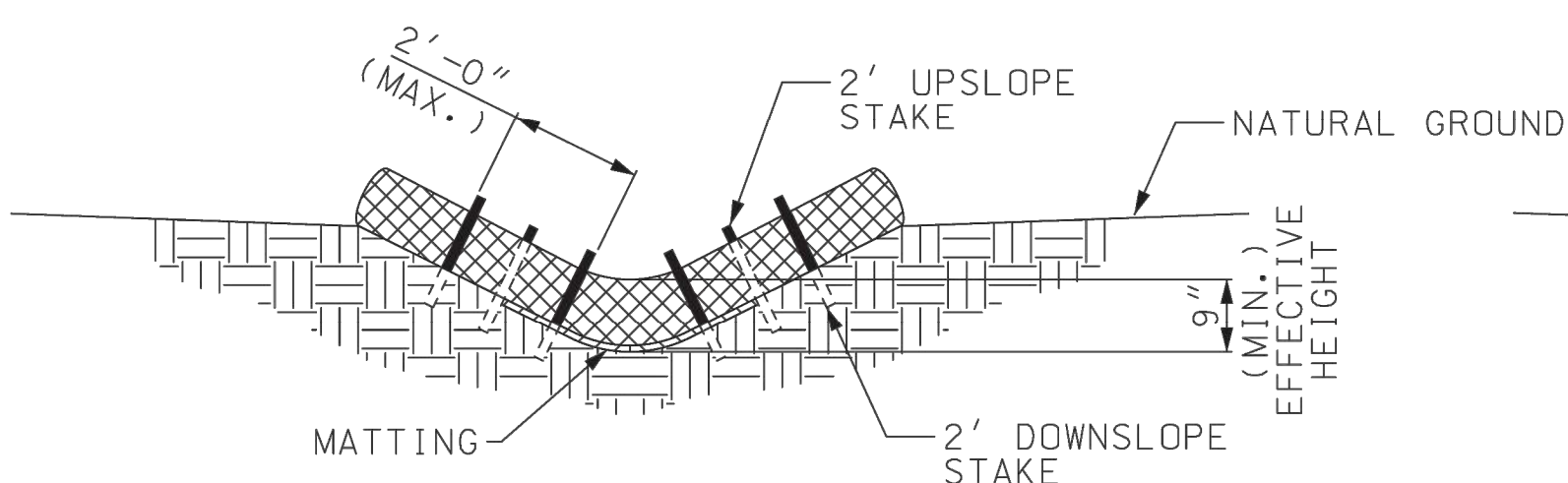


MINIMUM DITCH CHECK SPACING

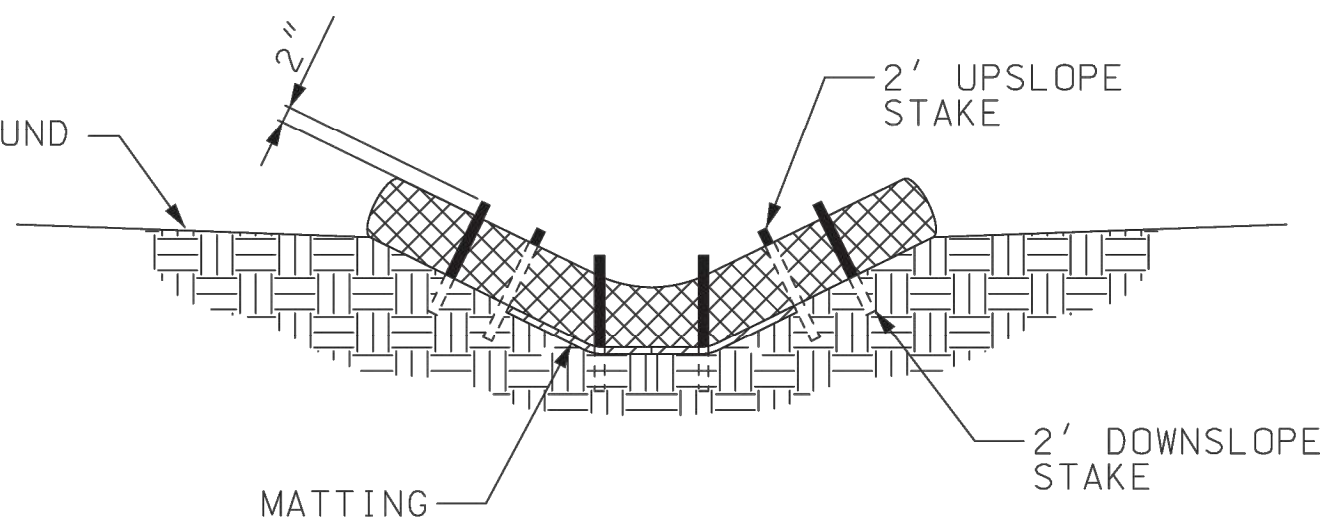
ALTERNATE DITCH CHECK



SECTION B-B



TYPICAL SECTION
VEE DITCH



TYPICAL SECTION
TRAPEZOIDAL DITCH

NOTES:

USE MINIMUM 12 IN. DIAMETER LOG/SOCK.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL LOG/SOCK TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND LOG/SOCK AND SCOUR DITCH SLOPES OR AS DIRECTED BY ENGINEER.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE LOG/SOCK TO BOTTOM OF DITCH.

EROSION CONTROL BLANKET SHALL BE ANCHORED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

GENERAL NOTES:

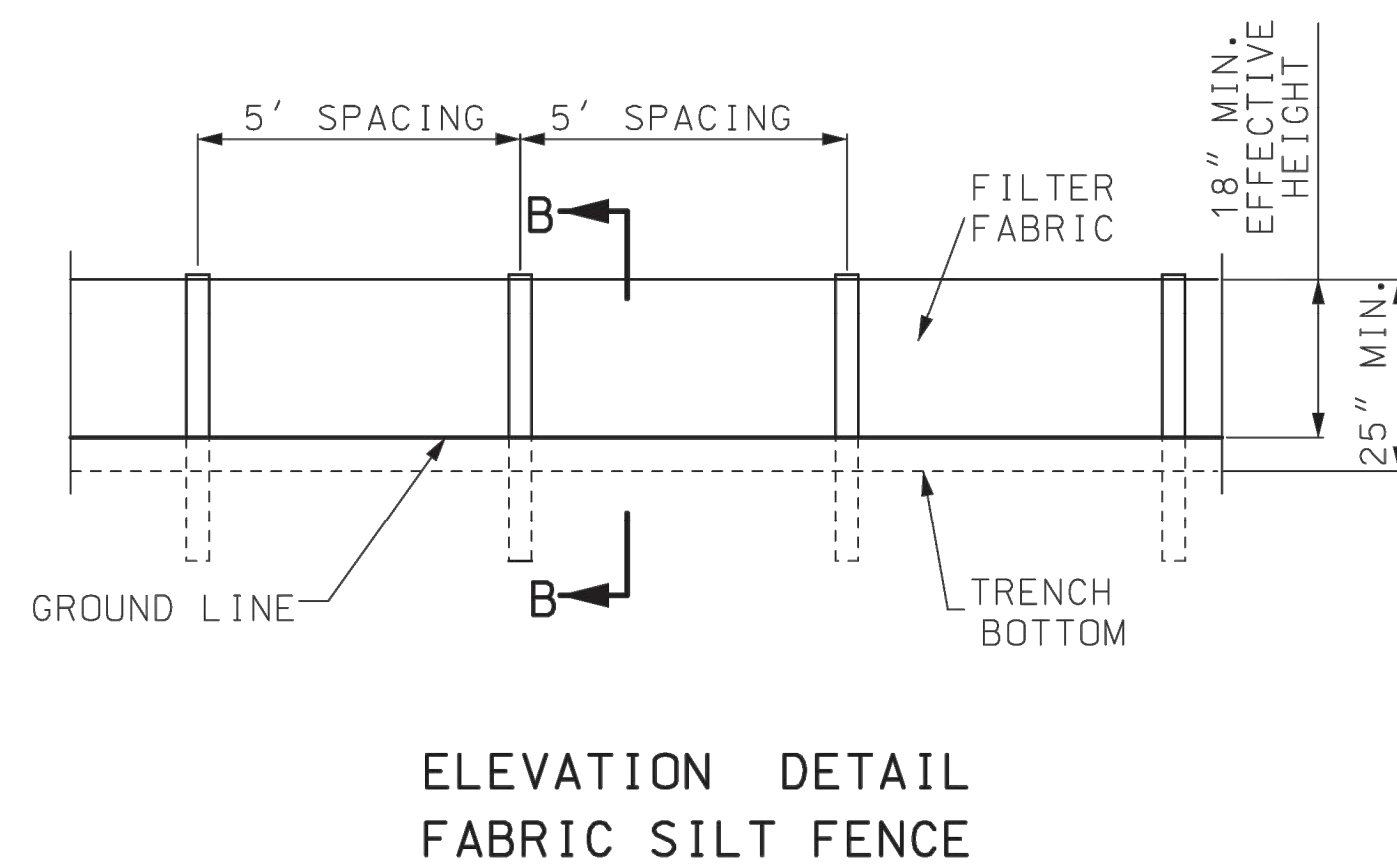
OTHER PROPRIETARY DITCH CHECKS MAY BE SUBSTITUTED IN ACCORDANCE WITH SEC 806 OR AS DIRECTED BY THE ENGINEER.

INSTALLATION OF PROPRIETARY DITCH CHECKS SHALL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

	MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MDOT (1-888-275-6636)	
	TEMPORARY EROSION CONTROL MEASURES TEMPORARY DITCH CHECKS
DATE EFFECTIVE: 01/01/2023 DATE PREPARED: 10/11/2022	806.10K
SHEET NO. 11/30	

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DRAWING INFO.		REVISIONS	
FIELD BY:	NOO	DESCRIPTION	
DRAWN BY:	GDS	DATE	
CHECK BY:	1/16/2024	BY	
DATE:		DATE	
FIELD BOOK:	21KC0005	DESCRIPTION	
JOB NUMBER:		DATE	



GENERAL NOTES:

USE SILT FENCE FOR FILL HEIGHTS GREATER OR EQUAL TO 10 FEET. ON ALL FILLS GREATER THAN 10 FEET HIGH, MID-SLOPE RUNS OF SILT FENCE SHOULD BE CONSIDERED.

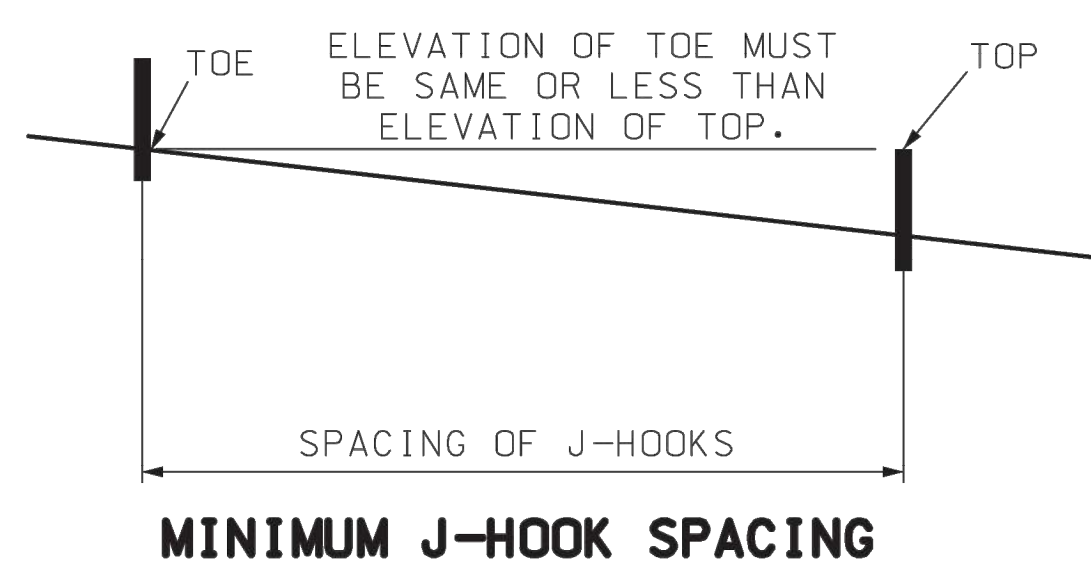
FOR FABRIC SILT FENCE:



MINIMUM LONGITUDINAL SPLICE OVERLAP SHALL BE 2'
WITH A POST AT EACH END.

SECURE FABRIC TO POSTS.

INSTEAD OF SILT FENCE ACROSS DRAINAGE DITCHES AND
DRAINS, DITCH CHECKS SHALL BE USED AS SHOWN ON
PLANS OR AS DIRECTED BY ENGINEER.

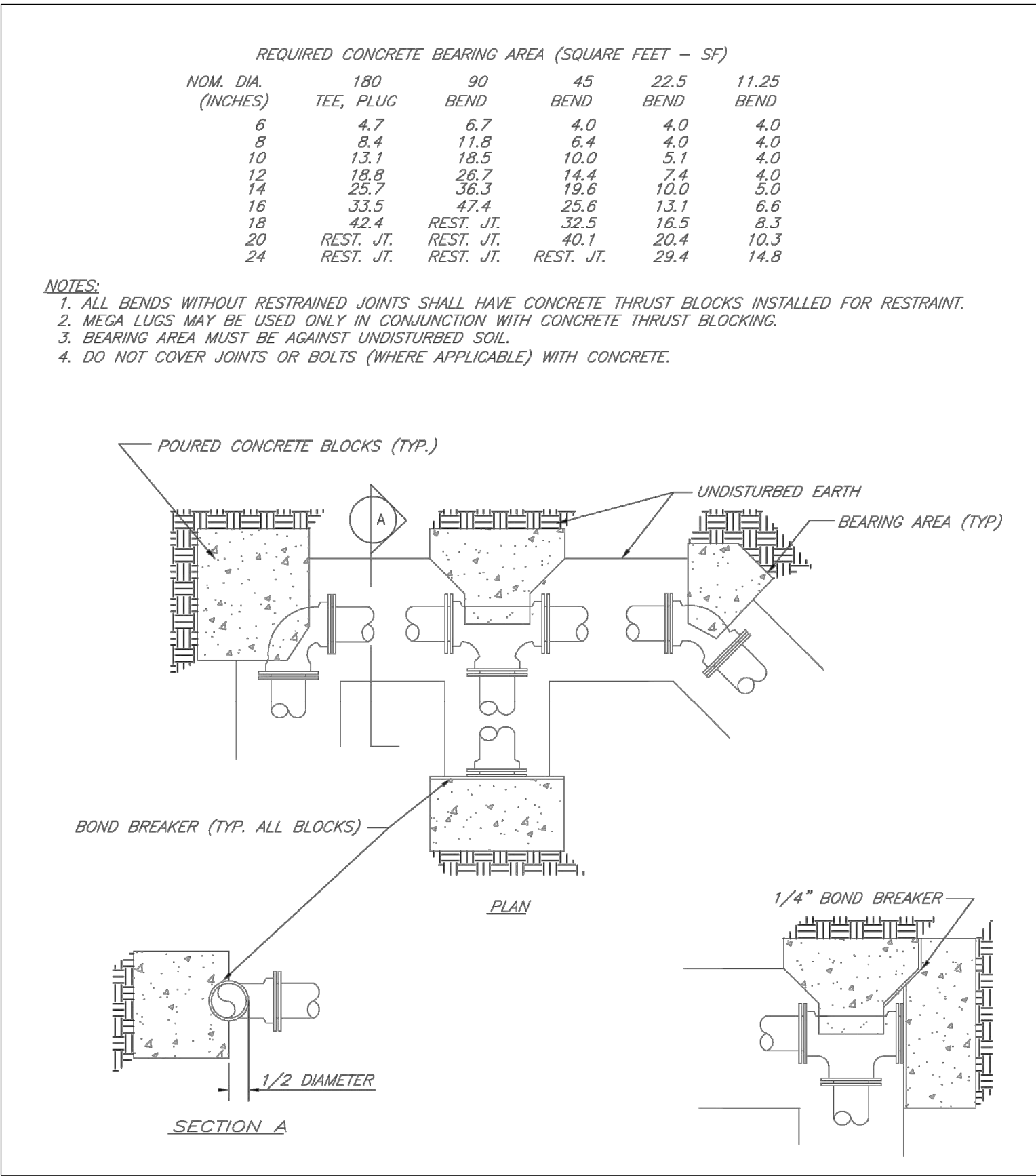
AT CULVERTS, PLACE SEDIMENT BARRIERS OVER THE TOP OF THE CULVERTS (NOT IN THE STREAM CHANNEL).



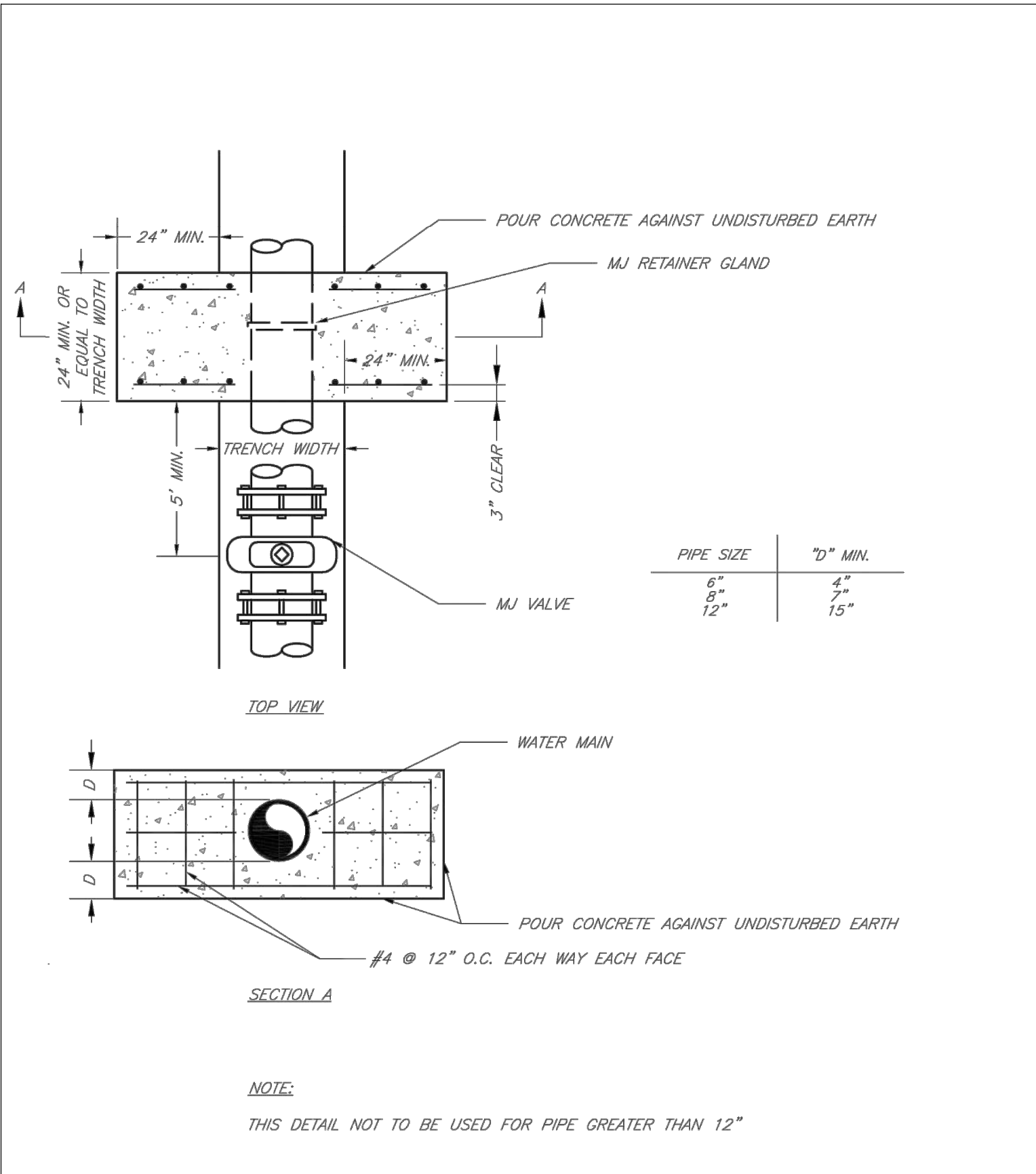
		MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
		TEMPORARY EROSION CONTROL MEASURES SILT FENCE	
DATE EFFECTIVE: 01/01/2023 DATE PREPARED: 10/11/2022	806.10K	SHEET NO. 12/30	

REVISIONS			DRAWING INFO.	
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				DATE:
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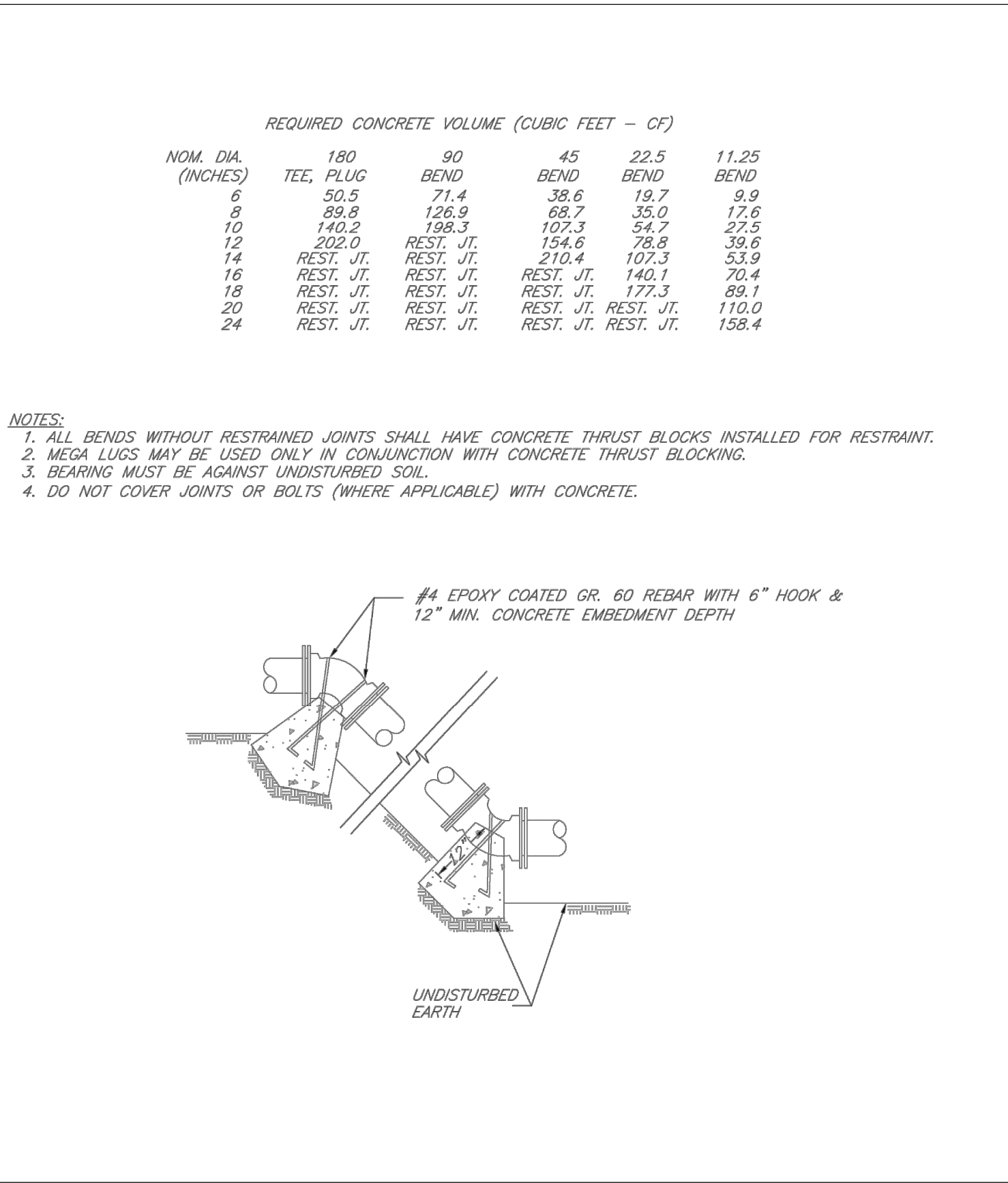
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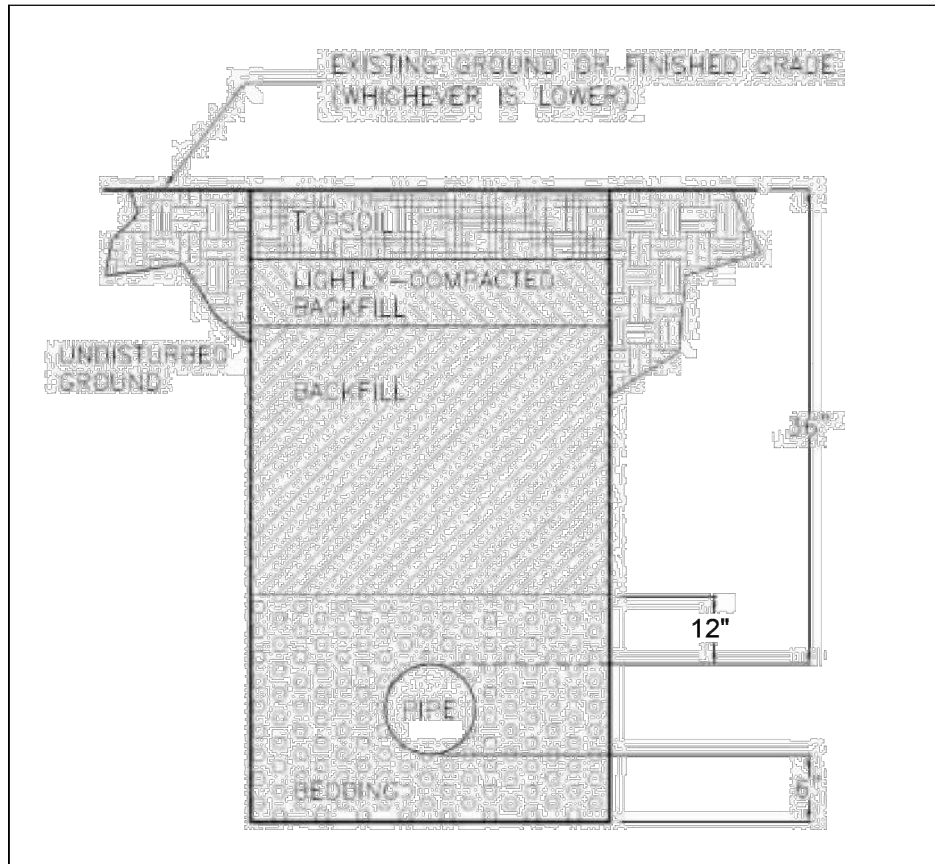
HORIZONTAL THRUST BLOCKS



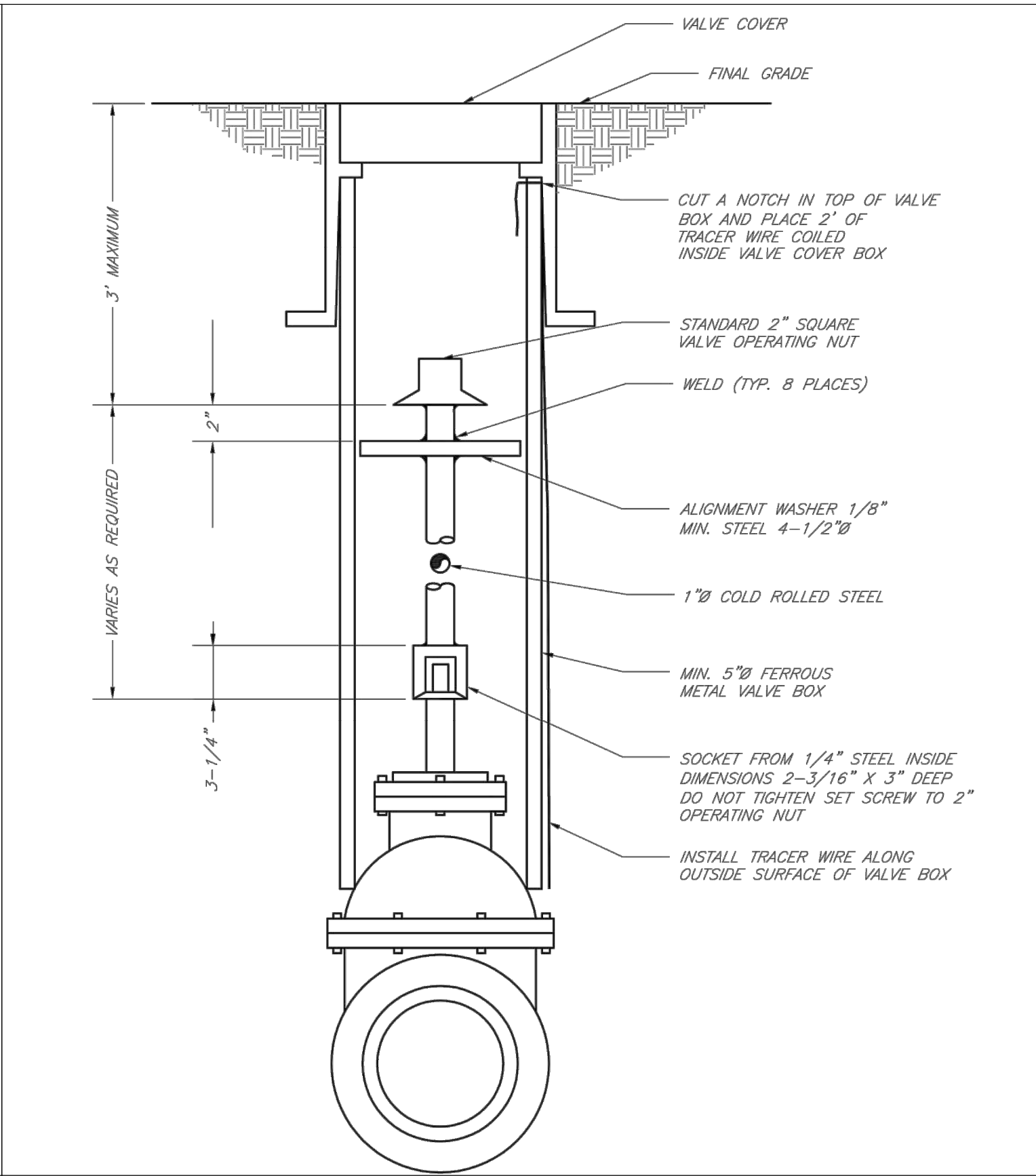
STRADDLE BLOCKS



VERTICAL THRUST BLOCKS

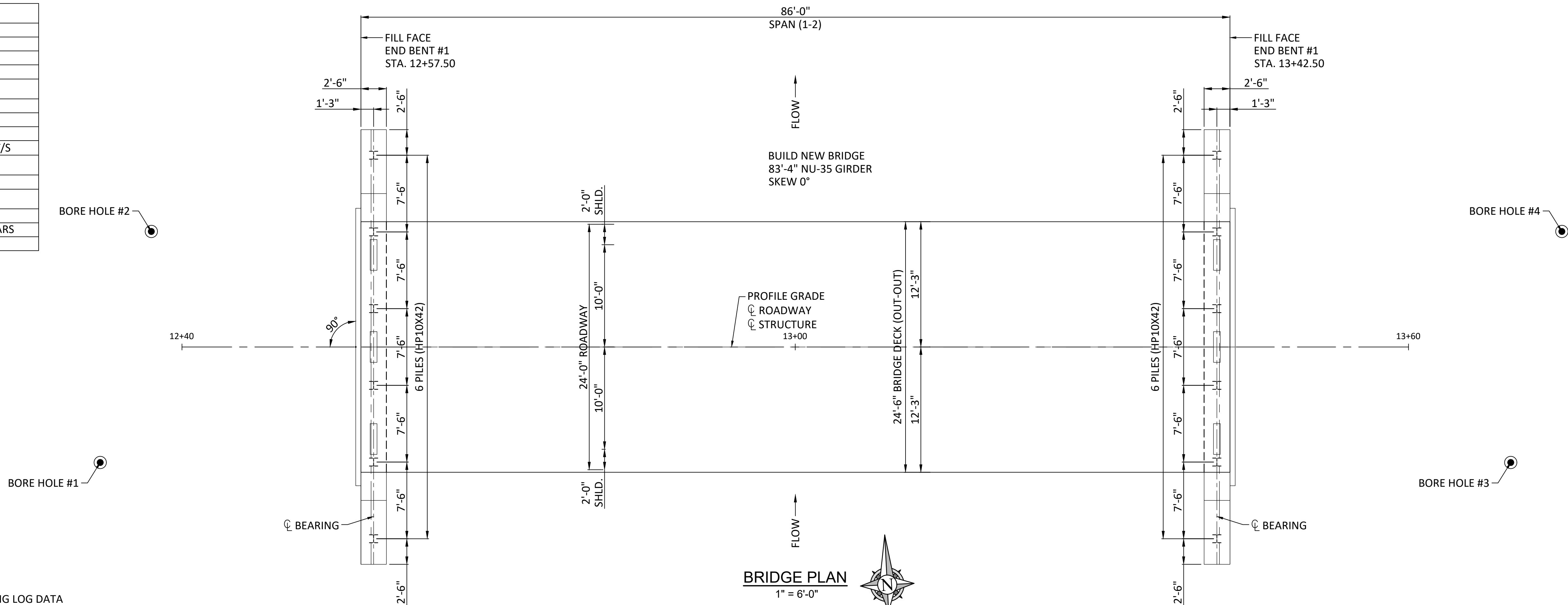


TRENCH AND BACKFILL DETAIL



VALVE STEM EXTENSION AND VALVE BOX

HYDROLOGIC DATA
DRAINAGE AREA = 4.83 SQ. MI.
DESIGN FLOOD FREQUENCY = 25 YEARS
DESIGN FLOOD DISCHARGE = 2,450 CFS
DESIGN FLOOD (D.F.) ELEVATION = 727.95
BASE FLOOD (100-YEAR)
BASE FLOOD ELEVATION = 728.32
BASE FLOOD DISCHARGE = 3,390 CFS
ESTIMATED BACKWATER = 0.38 FT
AVERAGE VELOCITY THRU OPENING - 5.44 FT/S
FREEBOARD (25-YEAR)
FREEBOARD = 2.02 FT (LOW SIDE)
ROADWAY OVERTOPPING
OVERTOPPING FLOOD DISCHARGE = N/A
OVERTOPPING FLOOD FREQUENCY > 500 YEARS
OVERTOPPING FLOOD ELEVATION = 733.86

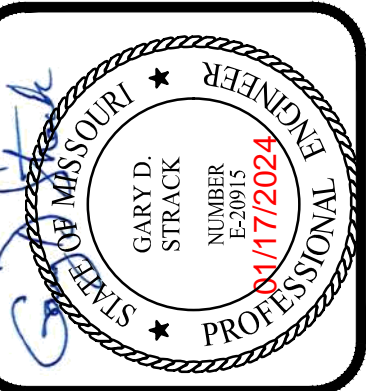
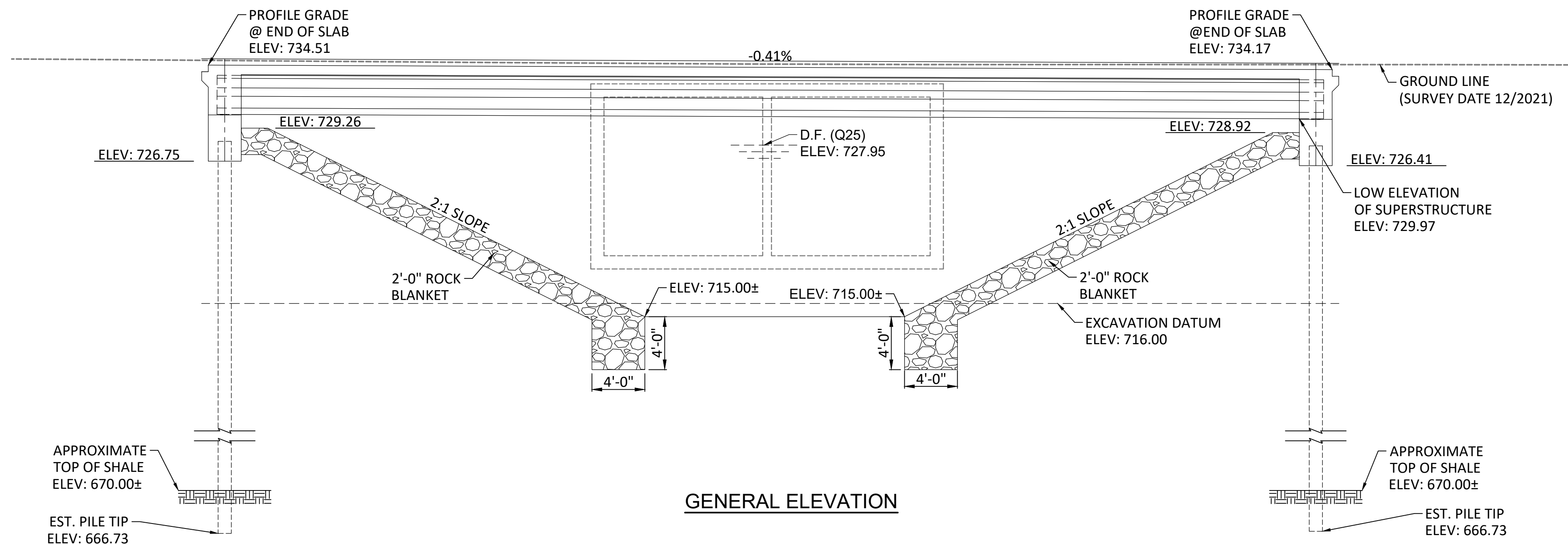


● INDICATES LOCATION OF BORINGS.

NOTICE AND DISCLAIMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORINGS FOR THIS STRUCTURE ARE SHOWN ON THE BRIDGE PLAN SHEET(S) FOR THIS STRUCTURE. BORING DATA FOR ALL LOCATIONS IS SHOWN ON BORING DATA SHEETS. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOGS OR OTHER FACTUAL RECORDS OF SUBSURFACE DATA AND INVESTIGATIONS PERFORMED BY THE ENGINEER FOR THE DESIGN OF THE PROJECT, WILL BE PROVIDED IN THE SPECIFICATIONS. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN IS SUBSURFACE DATA AVAILABLE FROM ELSEWHERE.

THE COUNTY DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COUNTY.



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				DATE: 11/18/24
				FIELD BOOK:
				JOB NUMBER: 21KC-00005

BRIDGE PLAN & PROFILE
STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER
14
OF 31

G:\Shared drives\40 Counties\County - Jackson\Stoerner Rd Bridge\CADD\Plans\B_Bridge Plan & Profile

BRIDGE QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
206-10.00	CLASS 1 EXCAVATION	CUBIC YARD	54.2
216-05.00	REMOVAL OF BRIDGE	LUMP SUM	1
503-99.05	INTEGRATED APPROACH	SQUARE YARD	107.0
702-10.10	STRUCTURAL STEEL PILES (10 IN.)	LINEAR FOOT	741
702-70.00	PILE POINT REINFORCEMENT	EACH	12
703-20.03	CLASS B-2 CONCRETE (SUBSTRUCTURE)	CUBIC YARD	27.6
703-42.21	SLAB ON CONCRETE NU-GIRDER	SQUARE YARD	232
705-60.21	NU 35, PRESTRESSED CONCRETE NU-GIRDER	LINEAR FOOT	250
713-99.03A	SL-1 BRIDGE RAIL	LINEAR FOOT	175
716-10.00	PLAIN NEOPRENE BEARING PAD	EACH	6

ALL CONCRETE ABOVE THE CONSTRUCTION JOINT IN THE END BENTS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE NU-GIRDER.

ALL REINFORCEMENT IN THE END BENTS IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE NU-GIRDER.

THE CONTRACTOR SHALL PROVIDE BRACING NECESSARY FOR LATERAL AND TORSIONAL STABILITY OF THE GIRDERS DURING CONSTRUCTION OF THE CONCRETE SLAB AND REMOVE THE BRACING AFTER THE SLAB HAS ATTAINED 75% DESIGN STRENGTH. CONTRACTOR SHALL NOT DRILL HOLES IN THE GIRDERS. THE COST FOR FURNISHING, INSTALLING, AND REMOVING BRACING WILL BE CONSIDERED COMPLETELY COVERED BY THE CONTRACT UNIT PRICE FOR PRESTRESSED CONCRETE NU-GIRDER.

ESTIMATED QUANTITIES FOR SLAB ON CONCRETE NU-GIRDER		
ITEM	UNIT	TOTAL
CLASS B-2 CONCRETE	CUBIC YARDS	83
REINFORCING STEEL	POUNDS	2,740
REINFORCING STEEL (EPOXY COATED)	POUNDS	13,540

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

METHOD OF FORMING THE SLAB SHALL BE AS SHOWN ON THE SHOP DRAWINGS AND IN ACCORDANCE WITH SEC 703. ALL HARDWARE FOR FORMING THE SLAB TO BE LEFT IN PLACE AS A PERMANENT PART OF THE STRUCTURE SHALL BE COATED IN ACCORDANCE WITH ASTM A123 OR ASTM B633 WITH A THICKNESS CLASS SC 4 AND A FINISH TYPE I, II OR III.

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

THE PRESTRESSED PANEL QUANTITIES ARE NOT INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES FOR SLAB ON CONCRETE NU-GIRDER.

FOUNDATION DATA				
TYPE	DESIGN DATA	BENT NUMBER		
		1	2	
LOAD BEARING PILE	PILE TYPE AND SIZE	HP10x42	HP10x42	
	NUMBER	ea	6	6
	APPROXIMATE LENGTH PER EACH	ft	62.0	61.5
	PILE POINT REINFORCEMENT	ea	6	6
	MIN. GALVANIZED PENETRATION (ELEV.)	ft	716.75	716.41
	PILE DRIVING VERIFICATION METHOD	DF	DF	
	RESISTANCE FACTOR		0.4	0.4
	MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE	kip	340	340

DF = FHWA-MODIFIED GATES DYNAMIC FORMULA

MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE = $\frac{\text{MAXIMUM FACTORED LOADS}}{\text{RESISTANCE FACTOR}}$

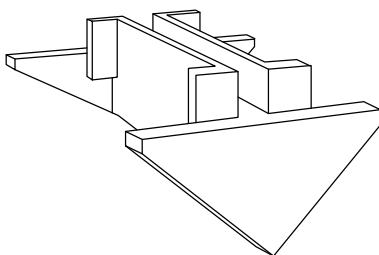
MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE = $\frac{\text{MAXIMUM FACTORED LOADS}}{\text{RESISTANCE FACTOR}}$ (SIDE RESISTANCE + TIP RESISTANCE)

ALL PILES SHALL BE DRIVEN TO PRACTICAL REFUSAL.

MINIMUM PILE LENGTHS SHALL BE IN ACCORDANCE WITH SECTION 702.4.11 OF THE STANDARD SPECIFICATIONS.

PAYMENT FOR PILE SPLICES WILL ONLY BE MADE FOR PILES REACHING LENGTHS BEYOND 40 FEET.

NOTE:
THE PILE POINT REINFORCEMENT SHALL BE A ONE-PIECE UNIT OF CAST STEEL. THE CUTTING EDGES SHALL BE HARDENED. THE PILE POINT SHALL BE DESIGNED TO PENETRATE BOULDERS WITHOUT DAMAGE TO THE PILE. THE PILE POINTS SHALL BE WELDED, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, TO EACH STEEL PILE AT THE END BENT BEFORE DRIVING.



CAST STEEL PILE POINT

GENERAL NOTES:

DESIGN SPECIFICATIONS:

2020 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (9TH ED.)
SEISMIC PERFORMANCE CATEGORY A
2019 AASHTO GUIDELINES FOR GEOMETRIC DESIGN OF VERY LOW-VOLUME LOCAL ROADS (ADT≤400)

CONSTRUCTION SPECIFICATIONS:

MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION
MISSOURI STANDARD PLANS FOR HIGHWAY CONSTRUCTION

DESIGN LOADING:

HS20-44
FATIGUE STRESS - CASE III
FUTURE WEARING SURFACE = 35 LB/SF
EARTH PRESSURE = 120 LB/CF
EQUIVALENT FLUID PRESSURE = 45 LB/CF
SUPERSTRUCTURE:
SIMPLY SUPPORTED NON-COMPOSITE FOR DEAD LOAD.
COMPOSITE FOR LIVE LOAD.

DESIGN UNIT STRESSES:

CLASS B-2 CONCRETE (SUBSTRUCTURE) f_c = 4,000 p.s.i.
CLASS B-2 CONCRETE f_c = 4,000 p.s.i.
REINFORCING STEEL (GRADE 60) f_y = 60,000 p.s.i.
STEEL PILE (ASTM A709 GRADE 50) f_y = 50,000 p.s.i.

FOR PRESTRESSED GIRDER STRESSES, SEE SHEET NO. 19.
FOR PRECAST PRESTRESSED PANEL STRESSES, SEE SHEET NO. 20.

NEOPRENE PADS:

NEOPRENE BEARING PADS SHALL BE 60 DUROMETER AND SHALL BE IN ACCORDANCE WITH SEC 716.

JOINT FILLER:

ALL JOINT FILLER SHALL BE IN ACCORDANCE WITH SEC 1057 FOR PREFORMED SPONGE RUBBER EXPANSION AND PARTITION JOINT FILLER, EXCEPT AS NOTED.

REINFORCING STEEL:

MINIMUM CLEARANCE TO THE REINFORCING STEEL SHALL BE 1-1/2 INCHES, UNLESS OTHERWISE SHOWN.

TRAFFIC HANDLING:

STRUCTURE TO BE CLOSED DURING CONSTRUCTION. TRAFFIC TO BE MAINTAINED ON OTHER ROUTES DURING CONSTRUCTION. SEE ROADWAY PLANS FOR TRAFFIC CONTROL.

PROTECTIVE COATINGS:

STRUCTURAL STEEL PILES TO BE CLEANED AND BITUMINOUS COATED AT 3' BELOW THE BOTTOM OF THE CAP, PER MODOT SPECIFICATION 702.4.8.1
THE CONTRACTOR MAY CHOOSE TO GALVANIZE THE ENTIRE PILE IN LIEU OF BITUMINOUS COATING REQUIREMENTS.
GALVANIZED STRUCTURAL STEEL PILES SHALL BE IN ACCORDANCE WITH MODOT SPECIFICATION 702.4.8.2

ACCEPTANCE OF NU-GIRDERS:

THE FOLLOWING PROCEDURES HAVE BEEN ESTABLISHED FOR THE ACCEPTANCE OF NU-GIRDERS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. THE APPROVAL WILL 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 LOCAL AGENCY OR THEIR CONSULTANT 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 FOLLOWING REPORTS WILL BE REQUIRED.

- CERTIFIED MILL TEST REPORTS, INCLUDING RESULTS OF PHYSICAL TEST ON THE PRESTREESED STRANDS, AND REINFORCEMENT AS REQUIRED.
- TEST REPORTS ON CONCRETE CYLINDER BREAKS.

THE LOCAL AGENCY OR CONSULTANT MUST VERIFY AND DOCUMENT THAT DIMENSIONS OF THE UNITS WERE CHECKED AT THE JOB AND FOUND TO BE IN COMPLIANCE WITH THE SHOP DRAWINGS.

MODOT AND FHWA MAY MAKE INSPECTIONS OF THE WORK AND THE CONTRACTOR SHALL GRANT THEM ACCESS TO ALL PARTS OF THE WORK.

NOTE:

QUANTITIES SHOWN ON THESE PLANS ARE NOT GUARANTEED BY THE OWNER AND ARE USED SOLELY FOR THE PURPOSE OF COMPARING BIDS AND AWARDING THE CONTRACT, AND MAY OR MAY NOT REPRESENT THE ACTUAL QUANTITIES ON THE JOB. SEE SPECIFICATIONS.

ANY ITEMS NOT SHOWN IN BID TAB, SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT FORM 106, TO MISSOURI DEPARTMENT OF NATURAL RESOURCES, HISTORIC PRESERVATION PROGRAM FOR ANY BORROW AREAS TO BE USED ON THIS PROJECT.



REVISIONS		DRAWING INFO.			
NO.	DESCRIPTION	BY	DATE	FIELD BY:	FIELD NO.
				DRAWN BY:	CAD
				CHECK BY:	GDS
				DATE:	11/16/24
				FIELD BOOK:	
				JOB NUMBER:	21KC40005
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BRIDGE QUANTITIES & NOTES
STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER
15
OF 31

5-#5-W12 (EACH FACE) & 5-#4-W11 @ 12" CTRS.

TOP OF SLAB ELEV. 734.51 @ END OF SLAB

5-#5-W12 (EACH FACE) & 5-#4-W11 @ 12" CTRS.

ELEV. 734.20

1-#6-D102 (SF)

1-#6-D103 (SF)

1-#6-D102 (SF)

1-#6-D103 (SF)

ELEV. 734.20

1-#6-D104 (SF)

1-#6-D105 (SF)

1-#6-D106 (SF)

1-#6-D107 (SF)

#6-W13

1-#6-D108 (FF)

1-#6-D109 (FF)

1-#6-D110 (FF)

1-#6-D111 (FF)

4-#5-W14

4-#5-W14

ELEV. 726.75

4-#7-B11

2-#6-B12

1'-6" (TYP.)

4-#7-D101
(TYP.)

#6-D108 (TYP.)

#6-D109 (TYP.)

#6-D110 (TYP.)

#6-D111 (TYP.)

#5-T11
STRAND TIE BAR

#6-B12
(TYP.)

#5-U12

4-#7-B11
(TYP.)

4-#7-B11
(TYP.)

Technical drawing of a wall section showing dimensions and reinforcement details. The drawing includes the following elements:

- Dimensions:**
 - Overall height: 7'-9"
 - Section 1 height: 3'-6"
 - Section 2 height: 4'-3"
 - Section 3 height: 14 1/2"
 - Section 4 height: 6'-8"
 - Section 5 height: 2'-6"
- Reinforcement:**
 - #5-U14 (Upper reinforcement)
 - #5-V11 (Vertical reinforcement)
- Other Details:**
 - CONST. JOINT (TYP.) (Construction joint typical)
 - 2'-6" (Horizontal dimension)

Diagram illustrating the cross-section of a road surface. The diagram shows a 2% cross slope, the top of the slab, the crown of the slab, and the profile grade. The dimensions are given as 2'-0" on either side of the centerline (C/L ROADWAY), totaling 4'-0" for the width of the slab. The vertical clearance from the top of the slab to the profile grade is indicated as 1" / 4" on both sides.

12'-6"

25 - #5 - U16 SPA. @ 12"

SYMMETRICAL ABOUT
 CL OF ROADWAY
 CL OF STRUCTURE

#5 - D113

CONST. JOINT

$\frac{3}{8}$ "

$\frac{3}{8}$ "

Diagram of a 1/2 inch thick plate with a 4 inch wide central hole. The plate has a total width of 8 inches. The hole is centered, with 4 inches of material on either side. The plate is labeled "C/L BEARING".

GENERAL NOTES:

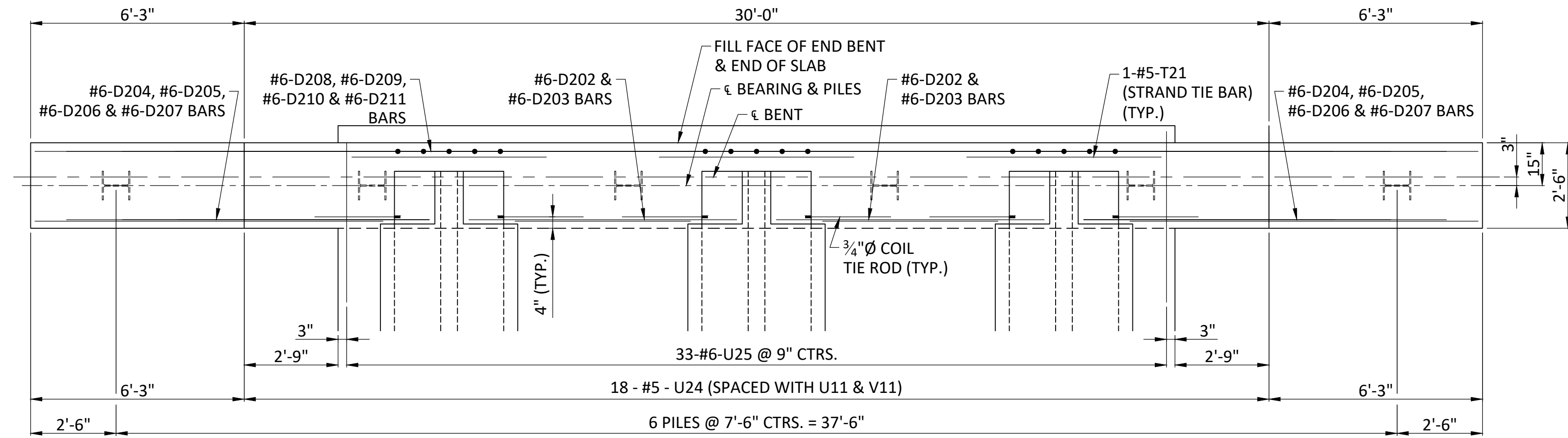
WORK THIS SHEET WITH SHEET NO. 16.

ALL U BARS AND PAIRS OF V BARS SHALL BE PLACED PARALLEL TO CENTERLINE OF ROADWAY.

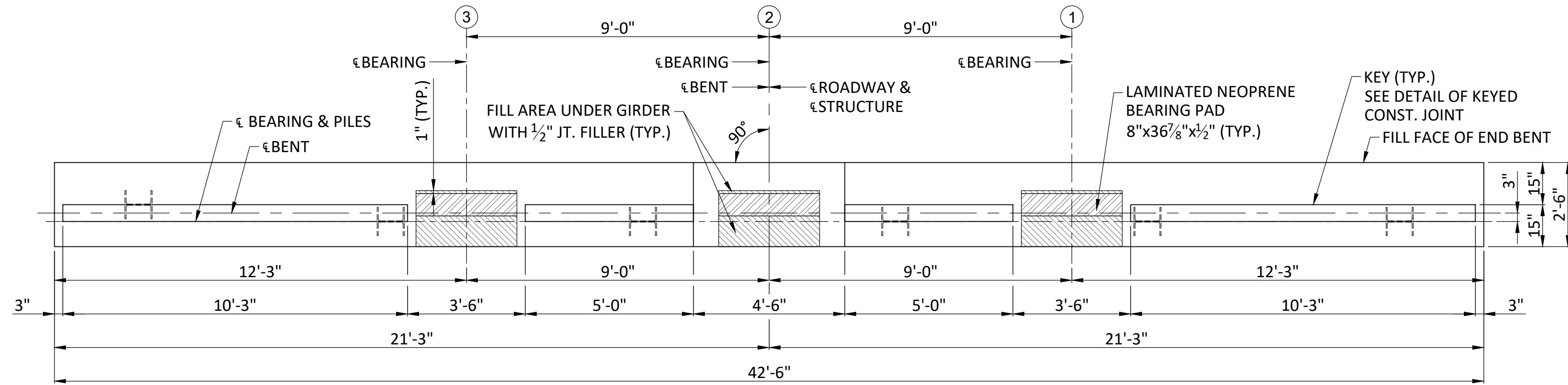
ALL CONCRETE IN THE END BENT ABOVE TOP OF BEAM AND BELOW TOP OF SLAB SHALL BE CLASS B-2.

REVISIONS				DRAWING INFO.	
NO.	DESCRIPTION	BY	DATE	FIELD BY:	
				DRAWN BY:	CAW
				CHECK BY:	GDS
				DATE:	1/16/24
				FIELD BOOK:	
				JOB NUMBER:	21KC40005

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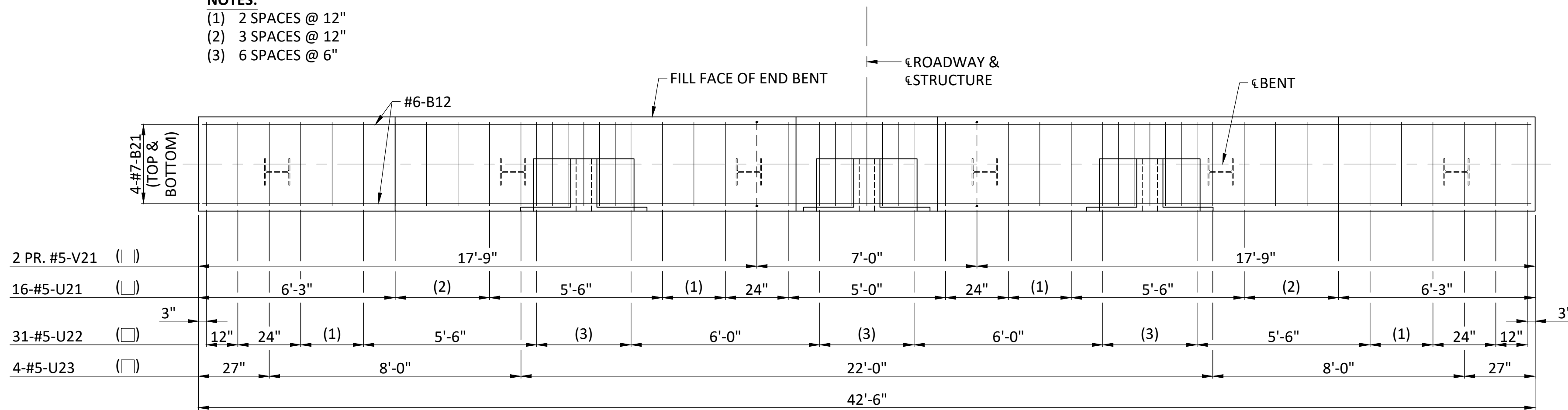


PART PLAN



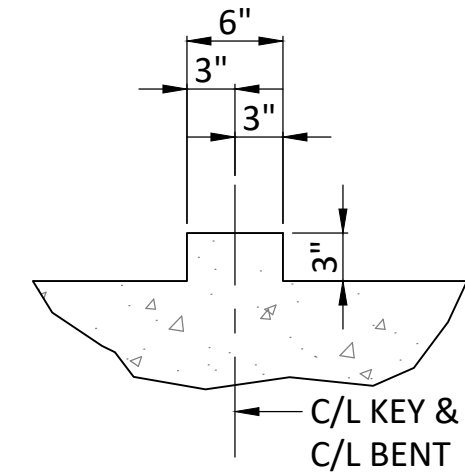
PLAN OF BEAM

- NOTES:
- (1) 2 SPACES @ 12"
 - (2) 3 SPACES @ 12"
 - (3) 6 SPACES @ 6"

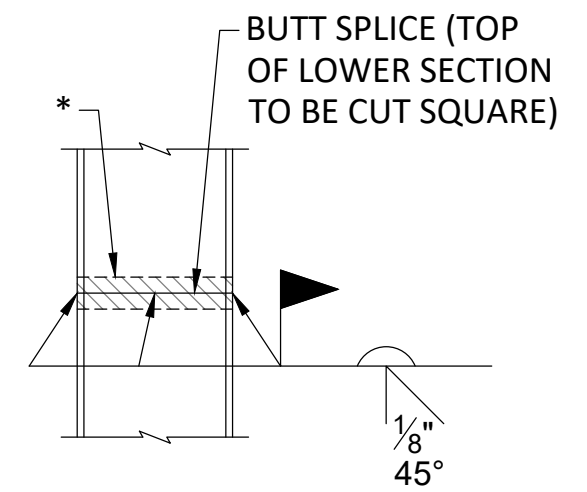


PLAN OF BEAM SHOWING REINFORCEMENT

KEYS NOT SHOWN FOR CLARITY.



KEYED CONSTRUCTION JOINT



STEEL PILE SPlice

(IF REQUIRED)

* GALVANIZING MATERIAL SHALL BE OMITTED OR REMOVED ONE INCH CLEAR OF WELD LOCATIONS IN ACCORDANCE WITH SEC 702.

GENERAL NOTES:

WORK THIS SHEET WITH SHEET NO. 19.
ALL U BARS AND PAIRS OF V BARS SHALL BE PLACED PARALLEL TO CENTERLINE OF ROADWAY.
REINFORCING STEEL SHALL BE SHIFTED TO CLEAR PILES.
U BARS SHALL CLEAR PILES BY AT LEAST 1 1/2 INCHES.

SUBSTRUCTURE QUANTITY TABLE FOR BENT NO. 2

ITEM	QUANTITY
CLASS 1 EXCAVATION	CU. YARD 27.1
STRUCTURAL STEEL PILES (10 IN.)	LINEAR FOOT 369
PILE POINT REINFORCEMENT	EACH 6
CLASS B-2 CONCRETE (SUBSTRUCTURE)	CU. YARD 13.8

THESE QUANTITIES ARE INCLUDED IN THE ESTIMATED QUANTITIES TABLE ON SHEET NO. 14

NO.	REVISIONS	DESCRIPTION	BY	DATE	DRAWING INFO	FIELD BY:	DATE	CAW	GDS	1/16/24	FIELD BOOK:	JOB NUMBER:	21KC40005

2'-6"

END OF SLAB (TYP.)

#6-D212

#5-T21 STRAND TIE BAR

FILL FACE (TYP.)

#5-U23

CHAMFER DETAIL (TYP.)

6"

#5-U24

#6-U23 (TYP.)

#5-D213

#5-U26

#6-D202

#6-D202

#6-D202

#6-D203

#5-U21

2 1/2" CL. (TYP.)

Technical drawing of a wall section showing dimensions and reinforcement details. The drawing includes the following elements:

- Dimensions:**
 - Overall height: 7'-9"
 - Height from base to #5-V21 reinforcement: 3'-6"
 - Height from base to #5-U24 reinforcement: 4'-3"
 - Height from base to top of wall: 14 1/2"
 - Height from base to top of wall (excluding #5-U24): 6'-8"
 - Width of wall: 2'-6"
- Reinforcement:**
 - #5-U24 (Horizontal reinforcement)
 - #5-V21 (Vertical reinforcement)
- Other Details:**
 - CONST. JOINT (TYP.) (Typical Construction Joint)
 - 2'-6" (Width of wall)

4-#6-W23

#4-W21

#5-W22

#5-U23

#6-D204

#6-D205

#6-D206

#6-D207

2'-6"

The diagram illustrates a cross-section of a 4'-0" wide concrete slab. A vertical dashed line marks the centerline (C/L) of the roadway. The slab is sloped at a 2% cross slope. The top surface is labeled 'TOP OF SLAB' and the 'CROWN OF SLAB' is indicated. A dashed line represents the 'PROFILE GRADE'. The vertical distance from the top of the slab to the profile grade is 1 1/4" on the right side. The horizontal distance from the centerline to the edge of the slab is 2'-0" on both sides.

12'-6"

25 - #5 - U26 SPA. @ 12"

SYMMETRICAL ABOUT
CL OF ROADWAY
CL OF STRUCTURE

#5 - D213

CONST. JOINT

$\frac{3}{8}$ "

$\frac{3}{8}$ "

[illegible]

GENERAL NOTES:

WORK THIS SHEET WITH SHEET NO. 18.

ALL U BARS AND PAIRS OF V BARS SHALL BE PLACED PARALLEL TO CENTERLINE OF ROADWAY.

ALL CONCRETE IN THE END BENT ABOVE TOP OF BEAM AND BELOW TOP OF SLAB SHALL BE CLASS B-2.



REVISIONS				DRAWING INFO.	
NO.	DESCRIPTION	BY	DATE	FIELD BY:	
				DRAWN BY:	CAW
				CHECK BY:	GDS
				DATE:	1/16/24
				FIELD BOOK:	
				JOB NUMBER:	21KCA0005

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END BENT NO. 2
STOENNER ROAD BRIDGE REPLACEMENT
BRO-8048(059)
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI



REVISIONS		DRAWING INFO.	
NO.	DESCRIPTION	BY	DATE
		FIELD BY:	CAW
		DRAWN BY:	GDS
		CHECK BY:	1/1/24
		DATE:	
		FIELD BOOK:	
		JOB NUMBER:	21KC40005

SLAB PLAN & DETAILS

STOENNER ROAD BRIDGE REPLACEMENT
BRO-B048(059)

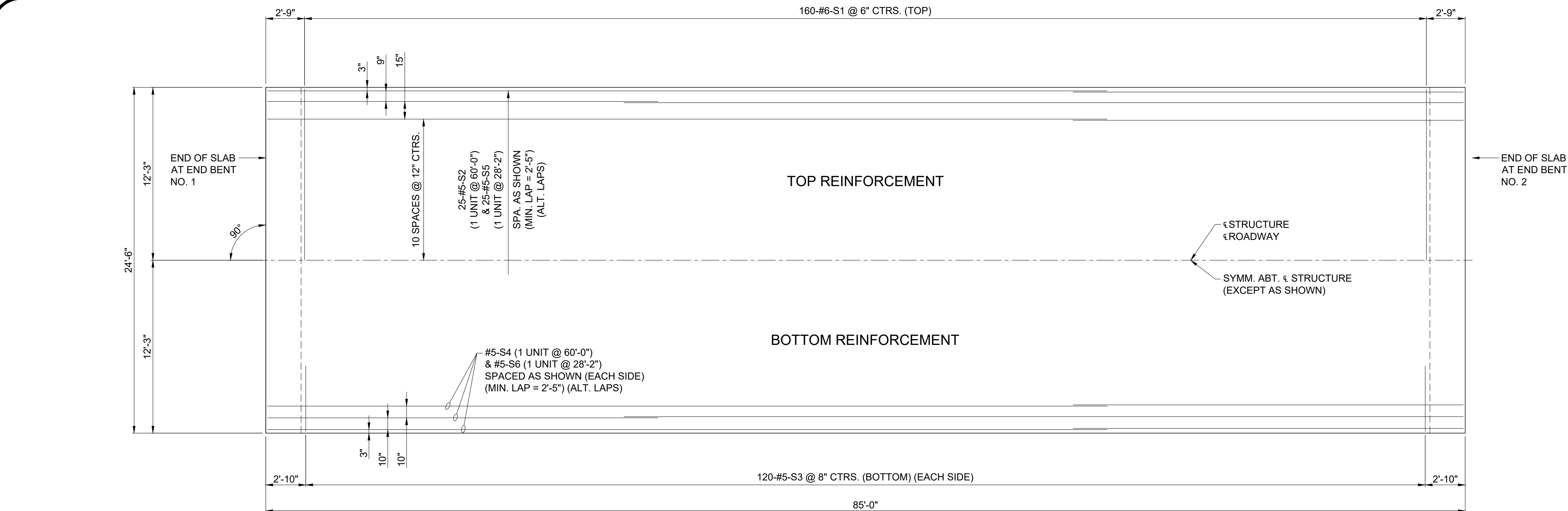
SEC. 19, T50N, R29W
JACKSON COUNTY, MISSOURI

SHEET NUMBER

22

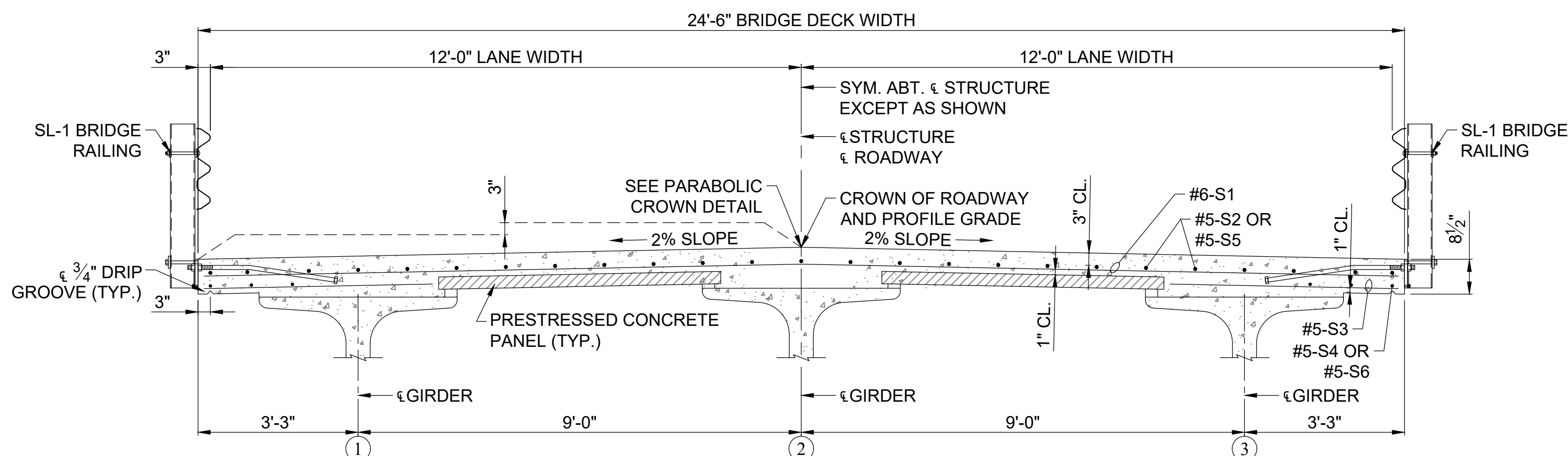
OF 31

© Standard drawings © Jackson County - Jackson BridgeCAD/DrawB - Plans & Details



PLAN OF SLAB SHOWING REINFORCEMENT

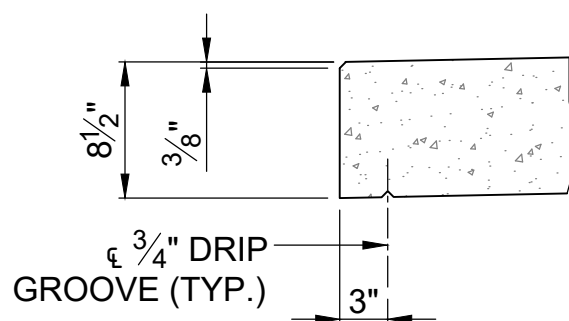
1/4" = 1'-0"



TYPICAL SECTION - BRIDGE

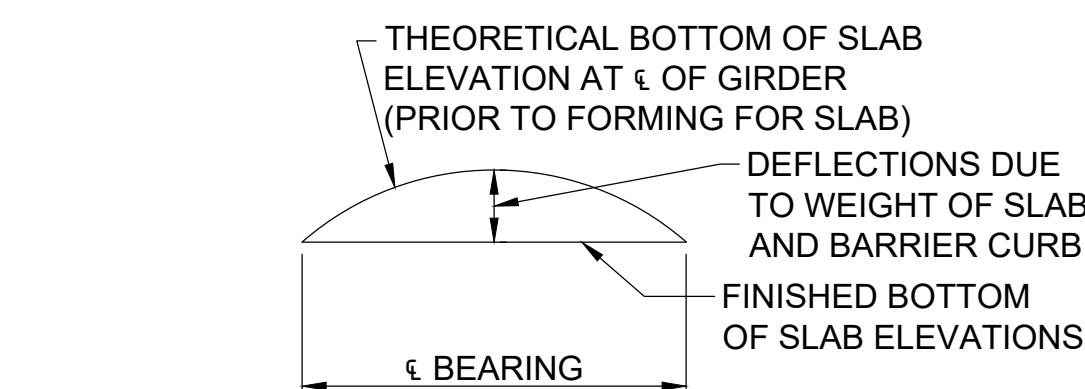
1/2" = 1'-0"

NOTE: SILANE SEALER TO BE APPLIED TO BRIDGE DECK, DECK OVERHANG EDGES, AND BENEATH DECK OVERHANGS.



DRIP GROOVE DETAIL

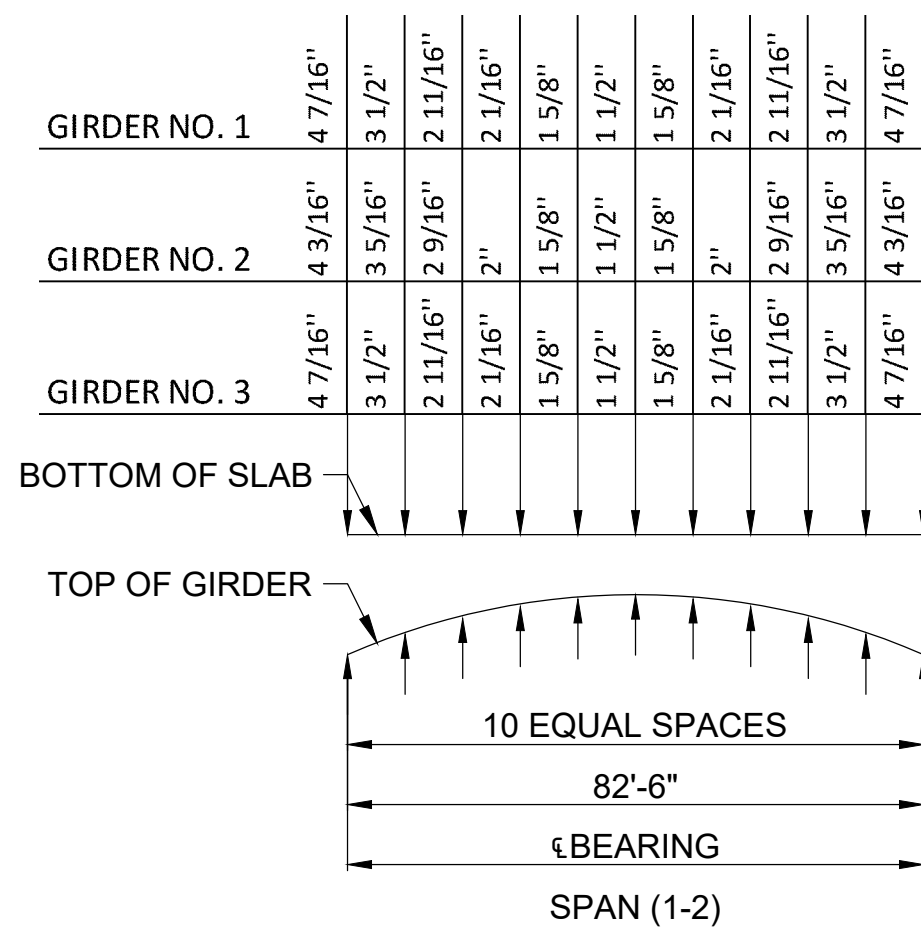
N.T.S.



TYPICAL SLAB ELEVATIONS DIAGRAM

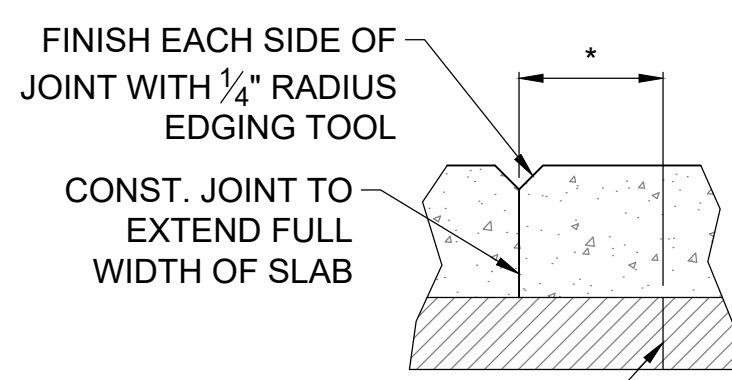
THEORETICAL BOTTOM OF SLAB ELEVATIONS AT C/L OF GIRDER (PRIOR TO FORMING FOR SLAB) **											
GIRDER NUMBER	SPAN (1-2) (82'-6" C/L BRG. - C/L BRG.)										
	C/L BRG.	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	C/L BRG.
1	733.61	733.62	733.63	733.62	733.61	733.58	733.54	733.49	733.43	733.35	733.28
2	733.77	733.79	733.80	733.80	733.79	733.76	733.72	733.67	733.60	733.52	733.44
3	733.61	733.62	733.63	733.62	733.61	733.58	733.54	733.49	733.43	733.35	733.28

** ELEVATIONS ARE BASED ON A CONSTANT SLAB THICKNESS OF 8 1/2" AND INCLUDE ALLOWANCE FOR THEORETICAL DEAD LOAD DEFLECTIONS DUE TO WEIGHT OF SLAB (INCLUDING PRECAST PANEL).



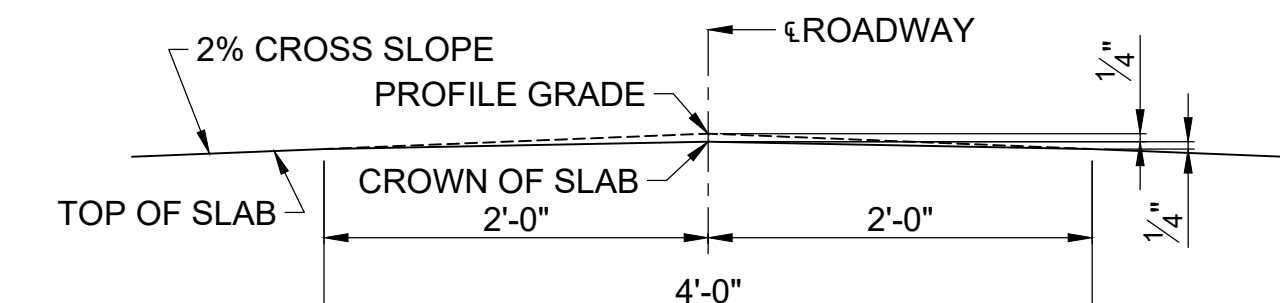
THEORETICAL SLAB HAUNCHING DIAGRAM

* ADJUST THE CONSTRUCTION JOINT TO A CLEARANCE OF 6 INCHES MINIMUM FROM THE PANEL JOINT.



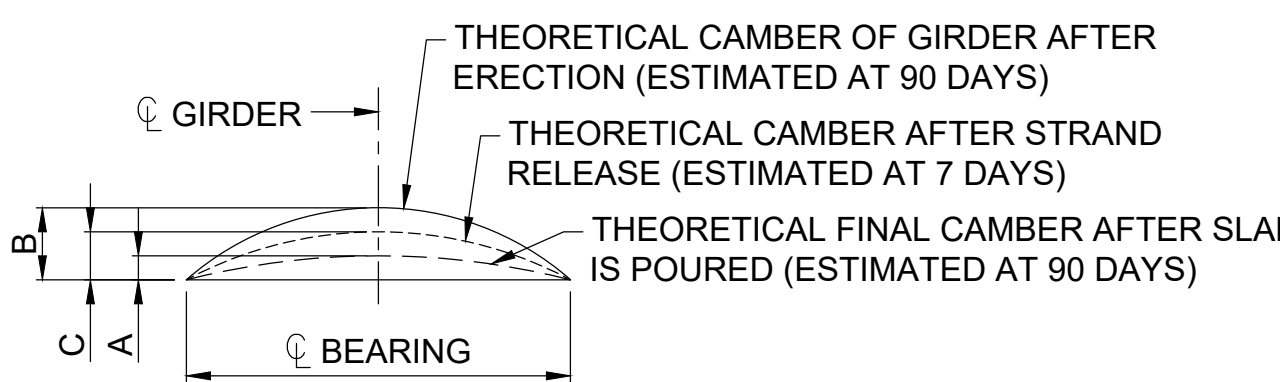
SLAB CONSTRUCTION JOINT

N.T.S.



PARABOLIC CROWN DETAIL

N.T.S.



GIRDER	SPAN (1-2)		
	A	B	C
EXTERIOR	2 7/8"	4 1/2"	2 3/4"
INTERIOR	2 5/8"		

GIRDER CAMBER DIAGRAM

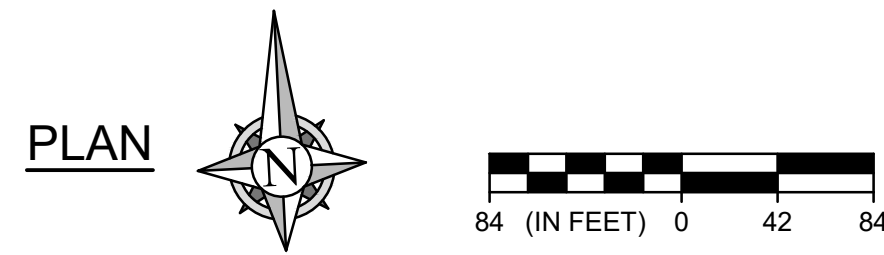
IF GIRDER CAMBER IS DIFFERENT FROM THAT SHOWN IN THE CAMBER DIAGRAM, IN ORDER TO MAINTAIN MINIMUM SLAB THICKNESS, ADJUSTMENT OF THE SLAB HAUNCHES, AN INCREASE IN SLAB THICKNESS OR A RAISE IN GRADE UNIFORMLY THROUGHOUT THE STRUCTURE SHALL BE NECESSARY. NO PAYMENT WILL BE MADE FOR ADDITIONAL LABOR OR MATERIALS REQUIRED FOR VARIATION IN HAUNCHING, SLAB THICKNESS OR GRADE ADJUSTMENT.

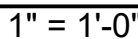
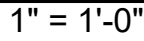
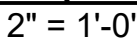
CONCRETE IN THE SLAB HAUNCHES IS INCLUDED IN THE ESTIMATED QUANTITIES FOR SLAB ON CONCRETE NU-GIRDER.

CONVERSION FACTORS FOR GIRDER CAMBER (ESTIMATED AT 90 DAYS)

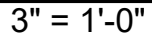
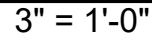
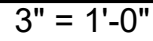
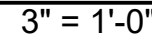
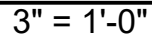
0.1 PT. = 0.314 x 0.5 PT.
0.2 PT. = 0.593 x 0.5 PT.
0.3 PT. = 0.813 x 0.5 PT.
0.4 PT. = 0.952 x 0.5 PT.

0.25 PT. = 0.7125 x 0.5 PT.





EXPANSION SPLICES IN THREE BEAM RAIL ARE NORMALLY NOT REQUIRED, BUT SHALL BE PROVIDED AT LOCATIONS SO THAT THE MAXIMUM LENGTH WITHOUT EXPANSION PROVISIONS DOES NOT EXCEED 200 FEET. AT EXPANSION SLOTS IN THE THREE BEAM RAILS, TIGHTEN BOLTS, BACK OFF ONE-HALF TURN AND BURR THREADS.

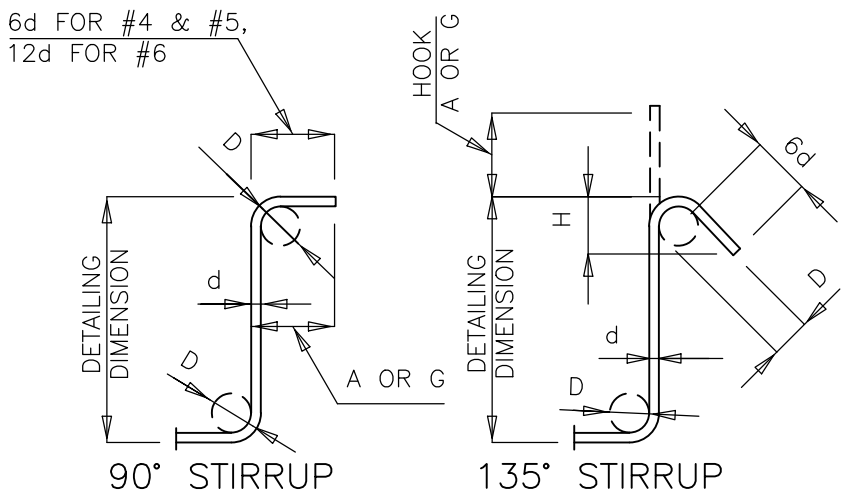


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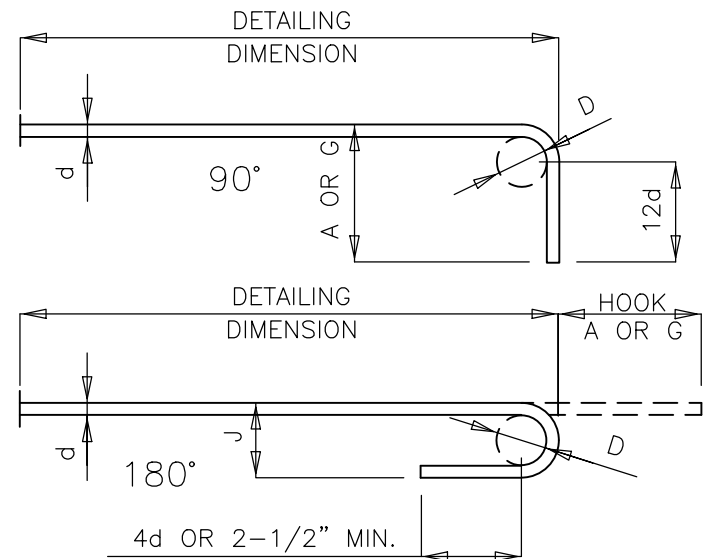
THE BREAKAWAY CABLE ASSEMBLY MUST BE TAUT. A LOCKING DEVICE (VICE GRIPS OR CHANNEL LOCK PLIERS) SHOULD BE USED TO PREVENT THE CABLE FROM TWISTING WHEN TIGHTENING NUTS.

BILL OF REINFORCING STEEL																									
NO. REQD.	MARK NO.	LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH		ACTUAL LENGTH		WEIGHT
									B		C		D		E		F		H						
	SIZE								MARK	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	
SUPERSTRUCTURE																									
END BENT 1																									
8	7 B11	BEAM	E	20					42	3.000								42	3	42	3	691			
4	6 B12	BEAM	E	20					42	3.000								42	3	42	3	254			
4	7 D101	DIAPHRAGM	E	20					30	0.000								30	0	30	0	245			
6	6 D102	DIAPHRAGM	E	20					7	10.125								7	10	7	10	71			
2	6 D103	DIAPHRAGM	E	20					5	1.625								5	2	5	2	16			
2	6 D104	DIAPHRAGM	E	20					7	8.125								7	8	7	8	23			
2	6 D105	DIAPHRAGM	E	20					9	2.250								9	2	9	2	28			
2	6 D106	DIAPHRAGM	E	20					10	8.375								10	8	10	8	32			
2	6 D107	DIAPHRAGM	E	20					10	2.375								10	2	10	2	31			
1	6 D108	DIAPHRAGM	E	20					34	6.125								34	6	34	6	52			
1	6 D109	DIAPHRAGM	E	20					37	6.250								37	6	37	6	56			
1	6 D110	DIAPHRAGM	E	20					40	6.500								40	7	40	7	61			
1	6 D111	DIAPHRAGM	E	20					42	3.000								42	3	42	3	63			
3	6 D112	DIAPHRAGM	E	20					5	6.000								5	6	5	6	25			
25	5 D113	DIAPHRAGM	E	20					24	0.000								24	0	24	0				
3	5 T11	STRAND TIE	E	20					5	8.375								5	8	5	8	18			
16	5 U11	BEAM	E	10	S					6	10.250	2	2.000					15	11	15	9	263			
31	5 U12	BEAM	E	13	S				2	2.000	3	1.000	2	2.000	3	1.000		11	5	11	1	358			
4	5 U13	BEAM	E	10	S					3	1.000	2	2.000					8	4	8	2	34			
20	5 U14	BEAM	E	10	S					3	6.375	2	2.000					9	3	9	1	189			
33	6 U15	DIAPHRAGM	E	19	S				3	6.375	4	6.000						8	0	7	10	388			
25	5 U16	DIAPHRAGM	E	14																					
4	5 V11	BEAM	E	20					6	10.250								6	10	6	10	29			
10	4 W11	WING	E	10						0	8.000	2	2.000					3	6	3	4	22			
20	5 W12	WING	E	20		V	4		2	5.750								2	6	2	6	73			
		INCREMENT = 6.000 INCH							4	5.625								4	6	4	6				
8	6 W13	WING	E	15					2	6.625	6	8.250				1	1.125	2	3.750	9	3	111			
8	5 W14	WING	E	21					1	10.125			2	0.000		1	7.875	0	9.875	3	10	3	31		
END BENT 2																									
8	7 B21	BEAM	E	20					42	3.000								42	3	42	3	691			
4	6 B22	BEAM	E	20					42	3.000								42	3	42	3	254			
4	7 D201	DIAPHRAGM	E	20					30	0.000								30	0	30	0	245			
6	6 D202	DIAPHRAGM	E	20					7	10.125								7	10	7	10	71			
2	6 D203	DIAPHRAGM	E	20					5	1.625								5	2	5	2	16			
2	6 D204	DIAPHRAGM	E	20					7	8.125								7	8	7	8	23			
2	6 D205	DIAPHRAGM	E	20					9	2.250								9	2	9	2	28			
2	6 D206	DIAPHRAGM	E	20					10	8.375								10	8	10	8	32			
2	6 D207	DIAPHRAGM	E	20					10	2.375								10	2	10	2	31			
1	6 D208	DIAPHRAGM	E	20					34	6.125								34	6	34	6	52			
1	6 D209	DIAPHRAGM	E	20					37	6.250								37	6	37	6	56			
1	6 D210	DIAPHRAGM	E	20					40	6.500								40	7	40	7	61			
1	6 D211	DIAPHRAGM	E	20					42	3.000								42	3	42	3	63			
3	6 D212	DIAPHRAGM	E	20					5	6.000								5	6	5	6	25			
25	5 D213	DIAPHRAGM	E	20					24	0.000								24	0	24	0				
3	5 T21	STRAND TIE	E	20					5	8.375								5	8	5	8	18			
16	5 U21	BEAM	E	10	S					6	10.250	2	2.000					15	11	15	9	263			
31	5 U22	BEAM	E	13	S				2	2.000	3	1.000	2	2.000	3	1.000		11	5	11	1	358			
4	5 U23	BEAM	E	10	S					3	1.000	2	2.000					8	4	8	2	34			
20	5 U24	BEAM	E	10	S					3	6.375	2	2.000					9	3	9	1	189			
33	6 U25	DIAPHRAGM	E	19	S				3	6.375	4	6.000						8	0	7	10	388			
25	5 U26	DIAPHRAGM	E	14																					
4	5 V21	BEAM	E	20					6	10.250								6	10	6	10	29			
10	4 W21	WING	E	10						0	8.000	2	2.000					3	6	3	4	22			
20	5 W22	WING	E	20		V	4		2	5.750								2	6	2	6	73			
		INCREMENT = 6.000 INCH							4	5.625								4	6	4	6				
8	6 W23	WING	E	15					2	6.625	6	8.250				1	1.125	2	3.750	9	3	9	3	111	
8	5 W24	WING	E	21					1	10.125			2	0.000		1	7.875	0	9.875	3	10	3	31		
SLAB																									
160	6 S1	SLAB	E	20					24	3.000								24	3	24	3	5,828			
25	5 S2	SLAB	E	20					60	0.000								60	0	60	0	1,565			
240	5 S3	SLAB	E	20					4	8.000								4	8	4	8	1,168			
6	5 S4	SLAB	E	20					60	0.000								60	0	60	0	375			
25	5 S5	SLAB	E	20					27	2.000								27	2	27	2	708			
6	5 S6	SLAB	E	20					27	2.000								27	2	27	2	170			



STIRRUP HOOK DIMENSIONS				
GRADES 40 - 50 - 60 KSI				
BAR SIZE	D (IN.)	90° HOOK	135° HOOK	APPROX. H
#4	2"	4-1/2"	4-1/2"	3"
#5	2-1/2"	6"	5-1/2"	3-3/4"
#6	4-1/2"	12"	8"	4-1/2"

NOTE: UNLESS OTHERWISE NOTED
DIAMETER "D" IS THE SAME FOR ALL
BENDS AND HOOKS ON A BAR.



END HOOK DIMENSIONS				
ALL GRADES				
BAR SIZE	D (IN.)	180° HOOKS	90° HOOKS	
#3	2-1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3-3/4"	7"	5"	10"
#6	4-1/2"	8"	6"	12"
#7	5-1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9-1/2"	15"	11-3/4"	19"
#10	10-3/4"	17"	13-1/4"	22"
#11	12"	19"	14-3/4"	2'-0"
#14	18-1/4"	2'-3"	21-3/4"	2'-7"

NOTE:
TWO ADDITIONAL BARS, OF EACH SIZE, ARE REQUIRED FOR TESTING BUT ARE NOT INCLUDED IN THE BAR BILL.
ALL STANDARD HOOKS AND BENDS OTHER THAN 180 DEG. TO BE BENT WITH THE SAME PROCEDURE AS FOR 90 DEG. STD. HOOKS.
HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH THE PROCEDURES AS SHOWN ON THIS SHEET.
E = EPOXY COATED REINFORCEMENT
S = STIRRUP
X = BAR IS INCLUDED IN SUBSTRUCTURE QUANTITIES.
V = BAR DIMENSIONS VARY IN EQUAL INCREMENTS BETWEEN DIMENSIONS SHOWN ON THIS LINE AND THE FOLLOWING LINE.
NO. EA. = NUMBER OF BARS OF EACH LENGTH.
NOMINAL LENGTHS ARE BASED ON OUT TO OUT DIMENSIONS SHOWN IN BENDING DIAGRAMS AND ARE LISTED FOR FABRIATORS USE (NEAREST INCH).
ACTUAL LENGTHS ARE MEASURED ALONG CENTERLINE BAR TO THE NEAREST INCH.
PAYWEIGHTS ARE BASED ON ACTUAL LENGTHS.
FOUR ANGLE OR CHANNEL SPACERS ARE REQUIRED FOR EACH COLUMN SPIRAL. SPACERS ARE TO BE PLACED ON INSIDE OF SPIRALS. LENGTH AND MASS OF COLUMN SPIRALS DO NOT INCLUDE SPLICES OR SPACERS.
REINFORCING STEEL (GRADE 60) = FY 60,000 PSI.

BILL OF REINFORCING STEEL																													
NO. REQD.	MARK NO.		LOCATION	EPOXY (E)	SHAPE NO.	STIRRUP (S)	SUBSTR. (X)	VARIES (V)	NO. EACH	DIMENSIONS												NOMINAL LENGTH		ACTUAL LENGTH		WEIGHT			
	SIZE	MARK								B	C		D		E		F		H		K								
											FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.	IN.	FT.		IN.	FT.	IN.
GRADE CONTROL STRUCTURE 1																													
4	6	H100	GCS1		15					14	9.750	15	1.250	14	9.750	7	5.000	12	10.000	7	5.000	12	10.000	44	9	44	9	269	
2	6	H101	GCS1		15					15	1.500	15	9.125	15	1.500	7	6.750	13	1.250	7	6.750	13	1.250	46	0	46	0	138	
2	6	H102	GCS1		15					15	5.250	16	4.500	15	5.250	7	8.625	13	4.500	7	8.625	13	4.500	47	3	47	3	142	
4	6	H103	GCS1		15					15	9.000	17	0.000	15	9.000	7	10.500	13	7.625	7	10.500	13	7.625	48	6	48	6	291	
2	5	U100	GCS1		10	S						3	0.000	3	6.000									9	6	9	4	19	
GRADE CONTROL STRUCTURE 2																													
4	6	H200	GCS2		15					14	9.750	18	8.000	14	9.750	7	5.000	12	10.000	7	5.000	12	10.000	48	4	48	4	290	
2	6	H201	GCS2		15					15	0.000	19	4.375	15	0.000	7	6.750	13	1.250	7	6.750	13	1.250	49	4	49	4	148	
2	6	H202	GCS2		15					15	5.250	19	11.750	15	5.250	7	8.625	13	4.500	7	8.625	13	4.500	50	10	50	10	153	
4	6	H203	GCS2		15					15	9.000	20	7.375	15	9.000	7	10.500	13	7.625	7	10.500	13	7.625	52	1	52	1	313	
2	5	U200	GCS2		10	S						3	0.000	3	6.000									9	6	9	4	19	
GRADE CONTROL STRUCTURE 3																													
4	6	H300	GCS3		15					14	9.750	18	8.000	14	9.750	7	5.000	12	10.000	7	5.000	12	10.000	48	4	48	4	290	
2	6	H301	GCS3		15					15	0.000	19	4.375	15	0.000	7	6.750	13	1.250	7	6.750	13	1.250	49	4	49	4	148	
2	6	H302	GCS3		15					15	5.250	19	11.750	15	5.250	7	8.625	13	4.500	7	8.625	13	4.500	50	10	50	10	153	
4	6	H303	GCS3		15					15	9.000	20	7.375	15	9.000	7	10.500	13	7.625	7	10.500	13	7.625	52	1	52	1	313	
2	5	U300	GCS3		10	S						3	0.000	3	6.000									9	6	9	4	19	
GRADE CONTROL STRUCTURE 4																													
4	6	H400	GCS4		15					14	9.750	24	1.250	14	9.750	7	5.000	12	10.000	7	5.000	12	10.000	53	9	53	9	323	
2	6	H401	GCS4		15					15	0.000	24	9.125	15	0.000	7	6.750	13	1.250	7	6.750	13	1.250	54	9	54	9	164	
2	6	H402	GCS4		15					15	5.250	25	4.500	15	5.250	7	8.625	13	4.500	7	8.625	13	4.500	56	3	56	3	169	
4	6	H403	GCS4		15					15	9.000	26	0.000	15	9.000	7	10.500	13	7.625	7	10.500	13	7.625	57	6	57	6	345	
2	5	U400	GCS4		10	S						3	0.000	3	6.000									9	6	9	4	19	

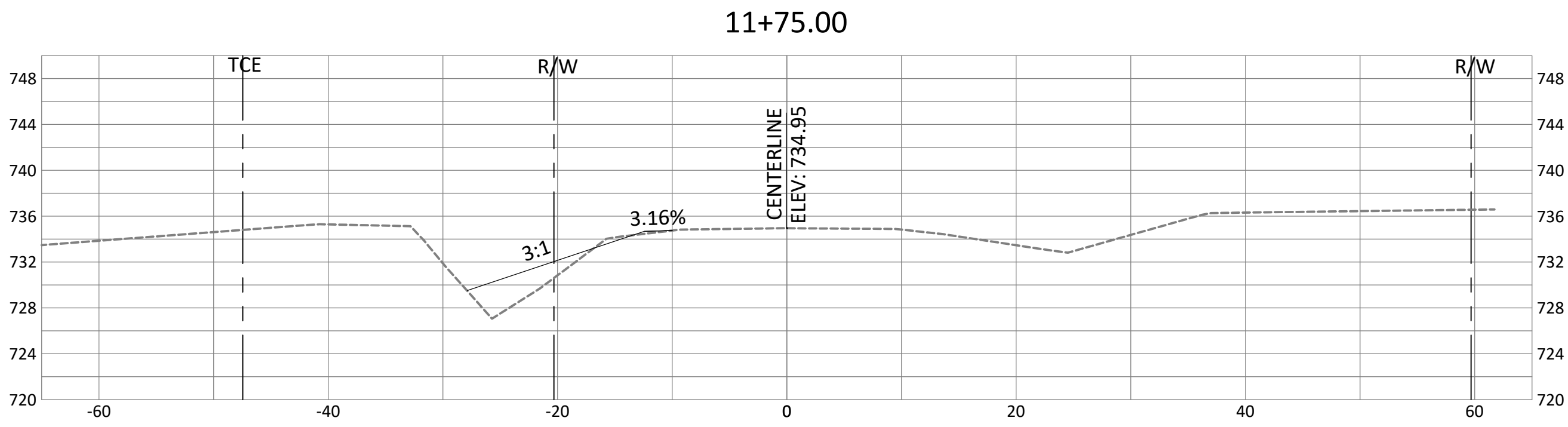
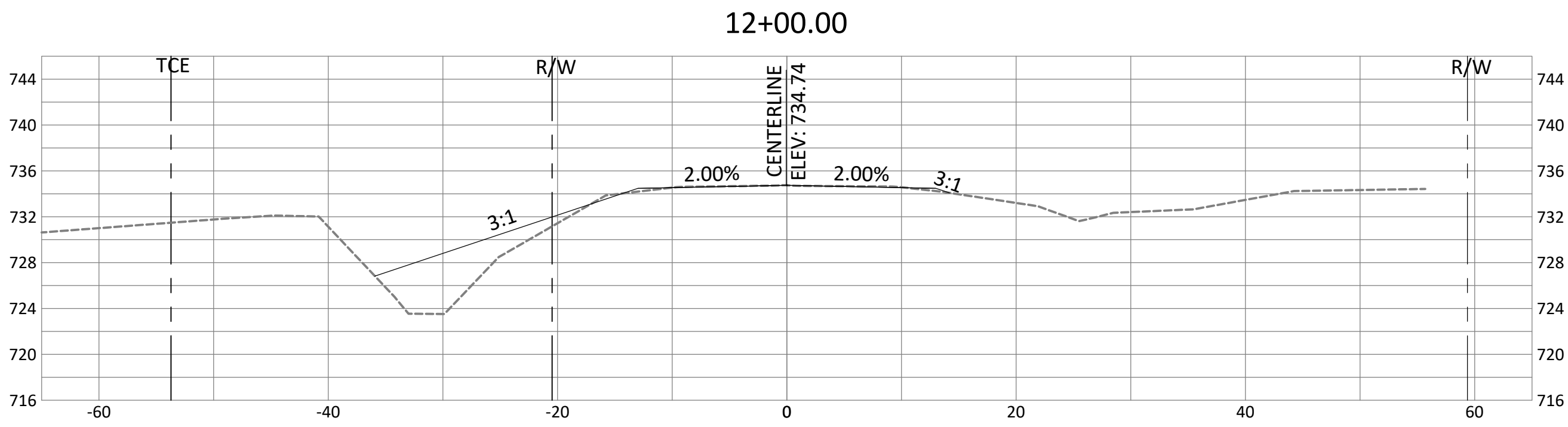
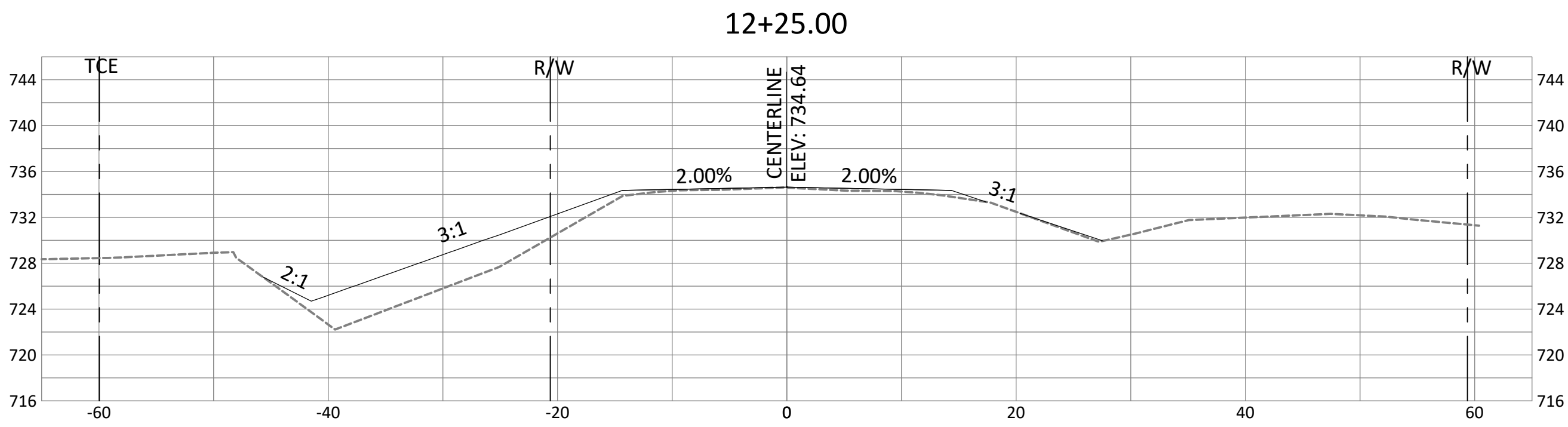
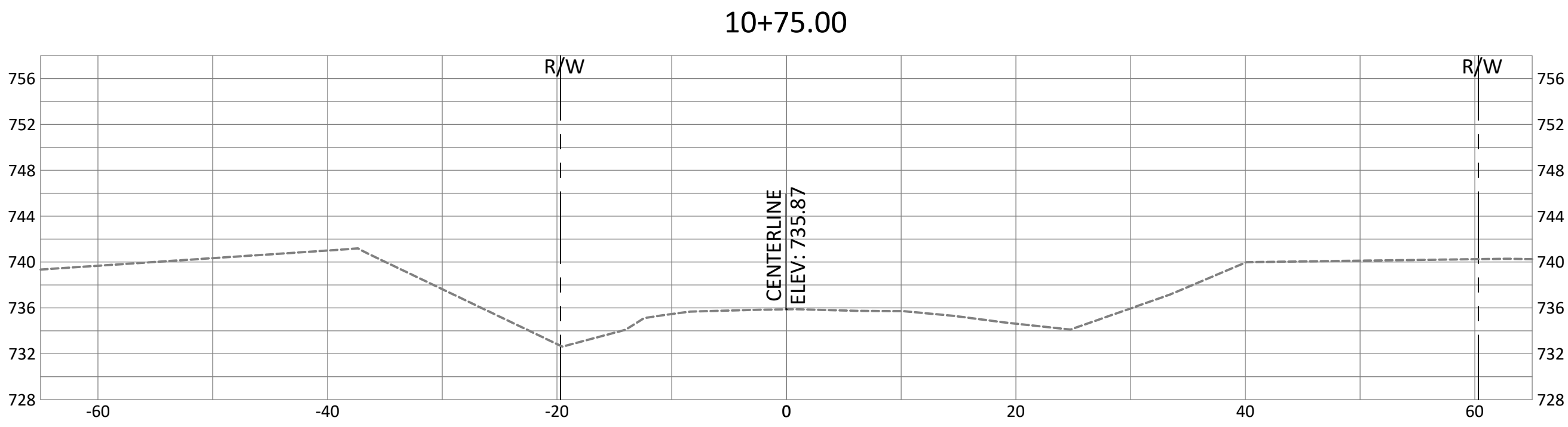
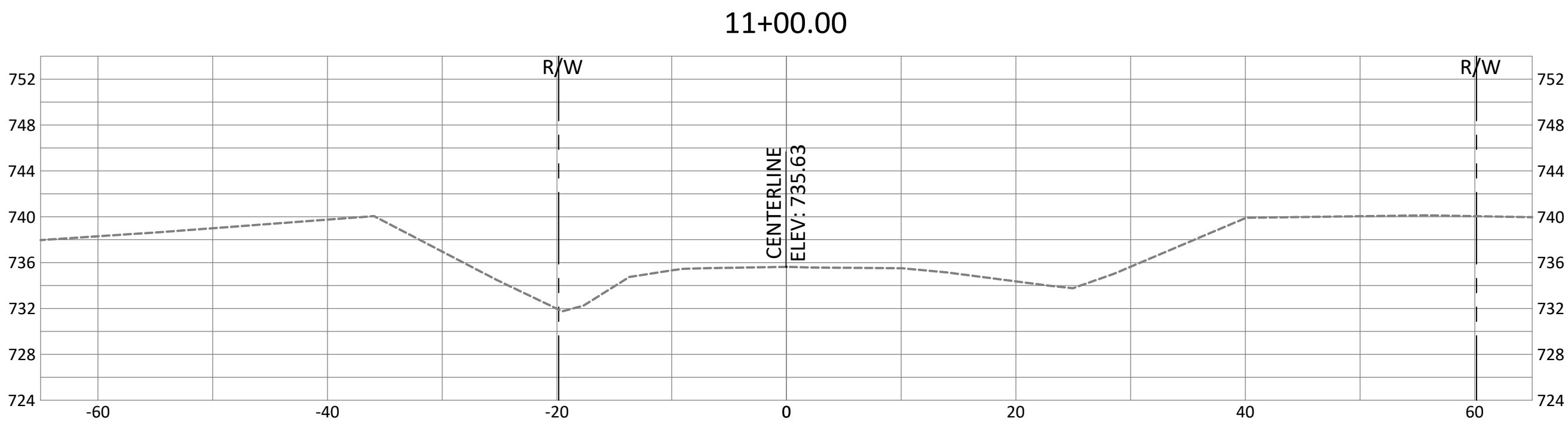
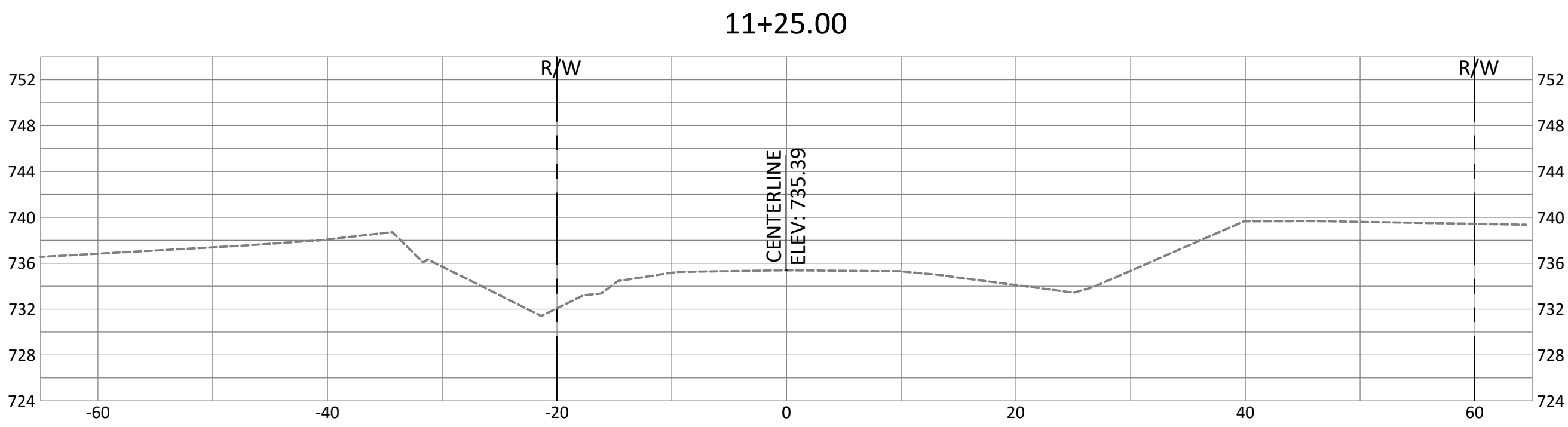
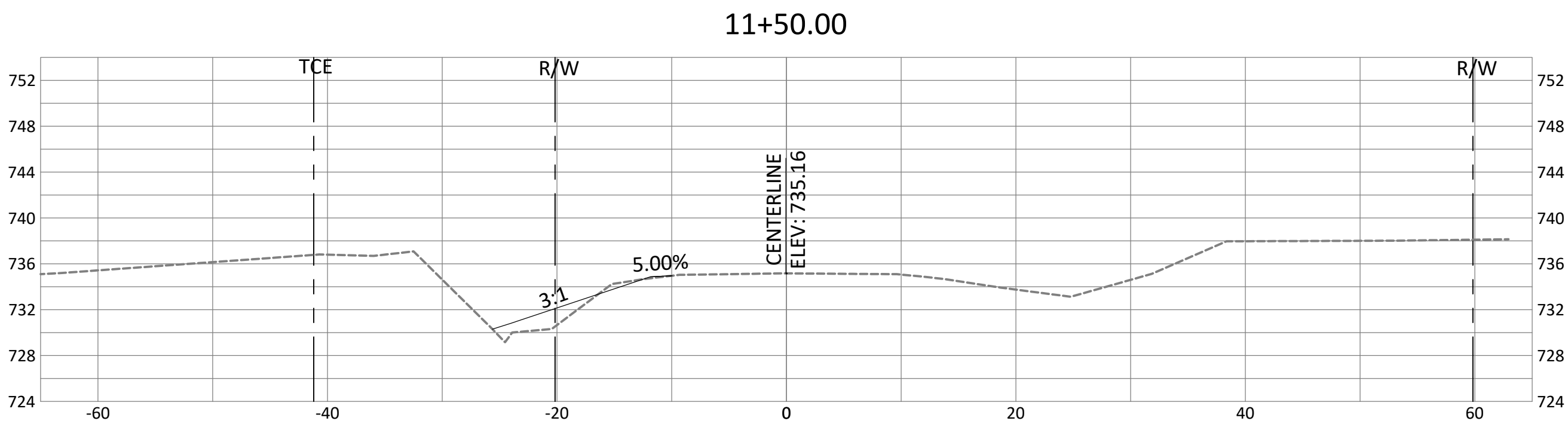
BORING NUMBER B-2
PAGE 1 OF 1

Depth	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOWS (N COUNT)	RECOVERY % (RQD)	UNCONF. COMPR. (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			Pocket Pen. (tsf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALT 3"										
		CRUSHED LIMESTONE BASE										
		(CL) LEAN CLAY, STIFF to VERY STIFF Drk brown clay, stiff	SPT 1	4-5-7 (12)	67			21.2				
5		Drk grey clay, medium stiff	SPT 2	3-4-6 (10)	89			27.8				
		Grey clay, stiff	SPT 3	4-5-5 (10)	61			24.9				
10		Grey clay, stiff	SPT 4	5-5-7 (12)	72			25.0				
		Grey and brown clay with iron staining, stiff	SPT 5	6-7-9 (16)	83			22.3				
20		Grey and orange clay with iron straining, stiff	SPT 6	8-7-7 (14)	33			20.2				
			SPT 7	4-4-5 (9)	56			21.3				
25			SPT 8	8-9-9 (18)	78			21.3				
30		Grey and orange clay with iron straining, stiff										
Bottom of borehole at 30.0 feet.												

BORING NUMBER B-3
PAGE 1 OF 1

Depth	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOWS (N COUNT)	RECOVERY % (RQD)	UNCONF. COMPR. (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			Pocket Pen. (tsf)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		ASPHALT 3"										
		CRUSHED LIMESTONE BASE	SPT 1	4-5-7 (12)	67			22.0				
		(CL) LEAN CLAY, VERY SOFT TO STIFF Drk brown clay, stiff										
5		Grey clay, stiff	ST 2		83	2306	96	26.4	49	25	24	
10		Grey clay, stiff	SPT 3	5-3-5 (8)	78			21.7				
15		Grey clay, stiff	SPT 4	8-9-9 (18)	67			25.3				
20		Grey clay, very soft	SPT 5	2-1-1 (2)	44			29.0				
25		Grey clay, soft	SPT 6	2-1-3 (4)	33			32.0				
30		Grey and orange clay with iron straining, stiff	SPT 7	3-3-6 (9)	83			32.2				
Bottom of borehole at 30.0 feet.												

SHEET NUMBER 27 OF 31	BORING DATA STOENNER ROAD BRIDGE REPLACEMENT BRO-B048(059) SEC. 19, T50N, R29W JACKSON COUNTY, MISSOURI
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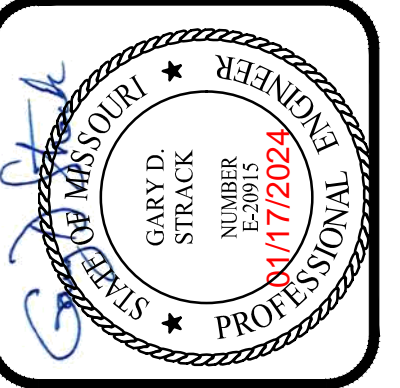
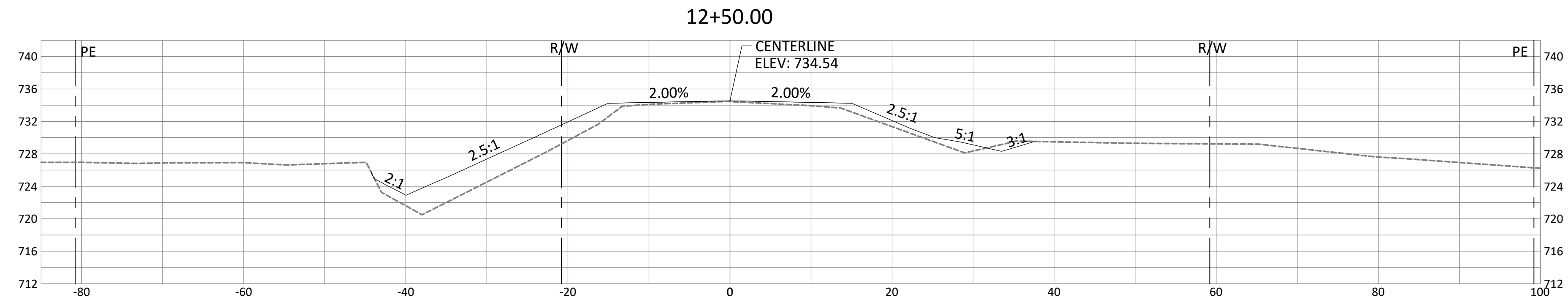
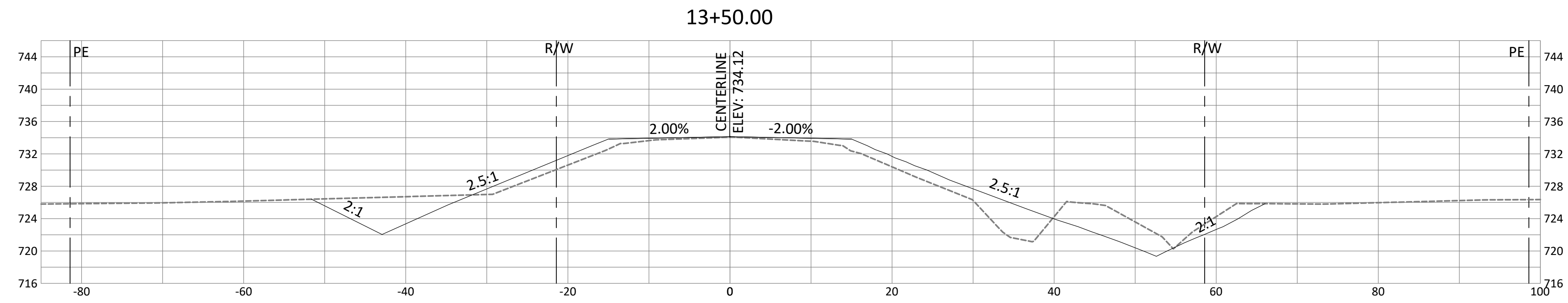
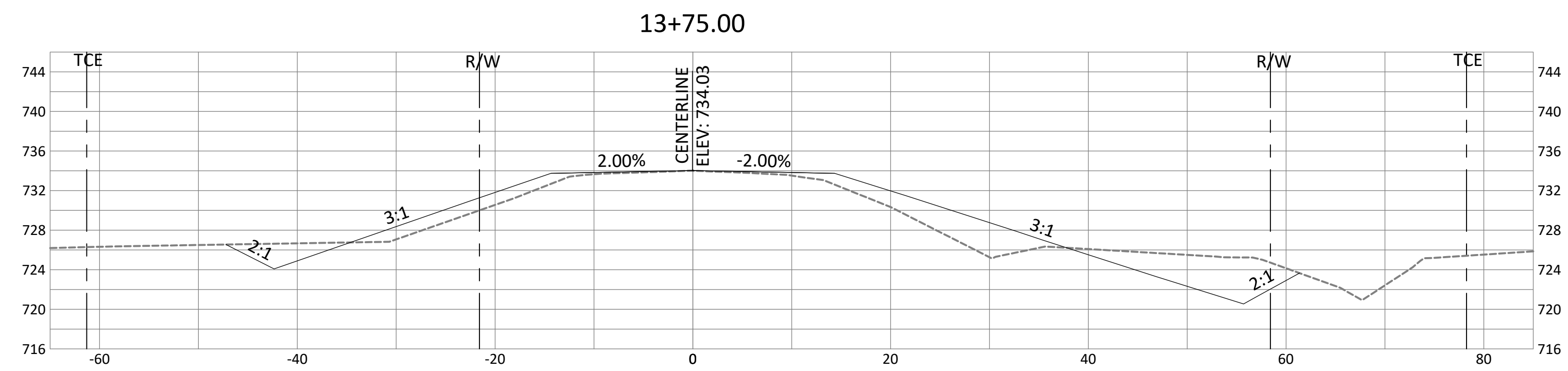
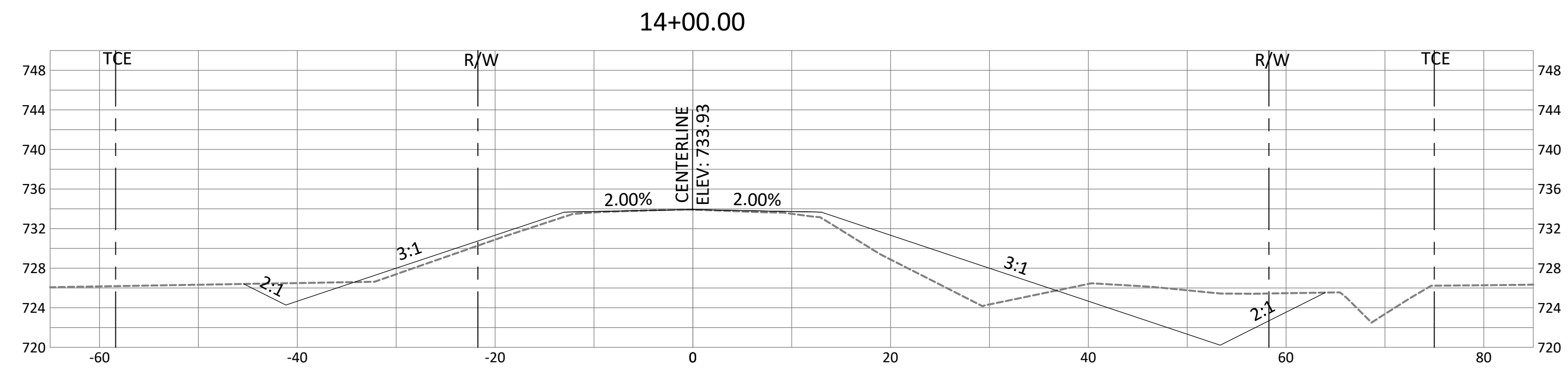
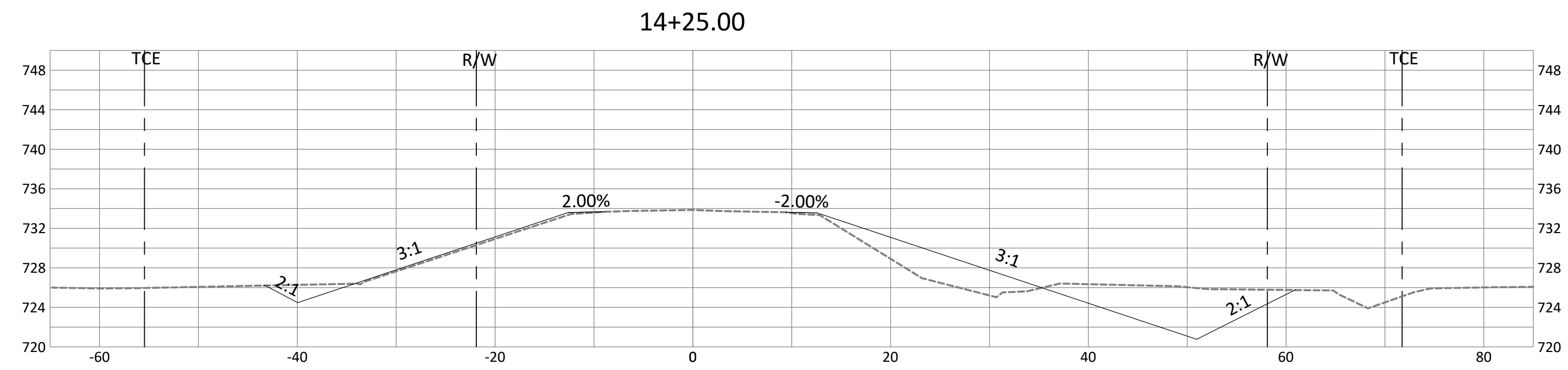
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BRO-B048(059)
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SHEET NUMBER
29
OF 31



REVIEWS		DRAWING INFO	
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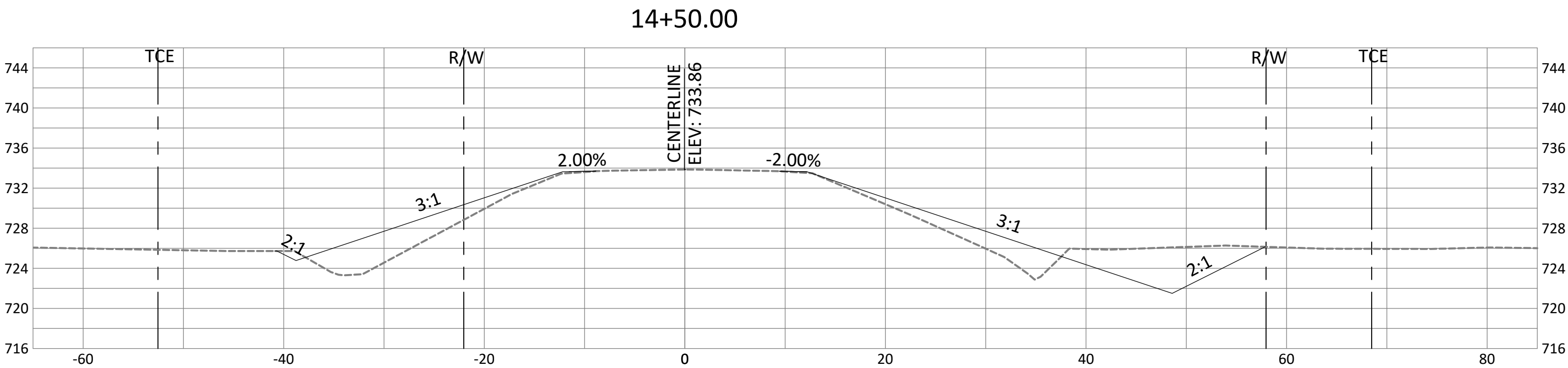
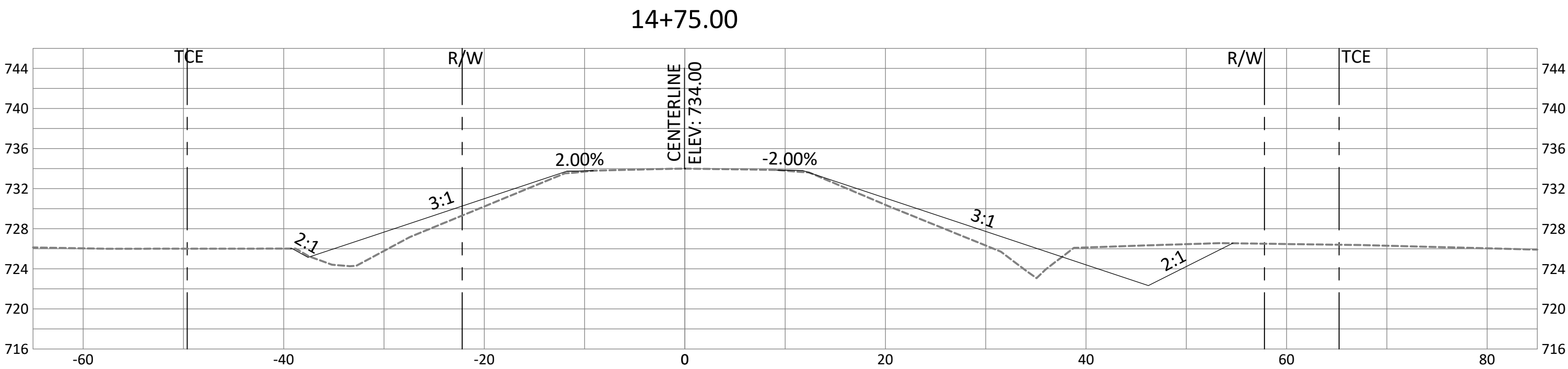
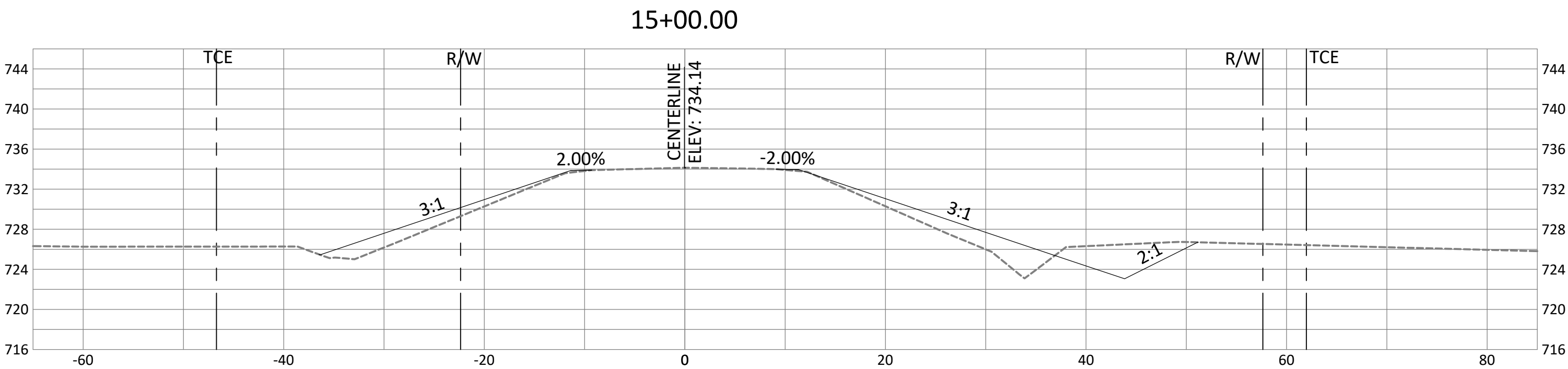
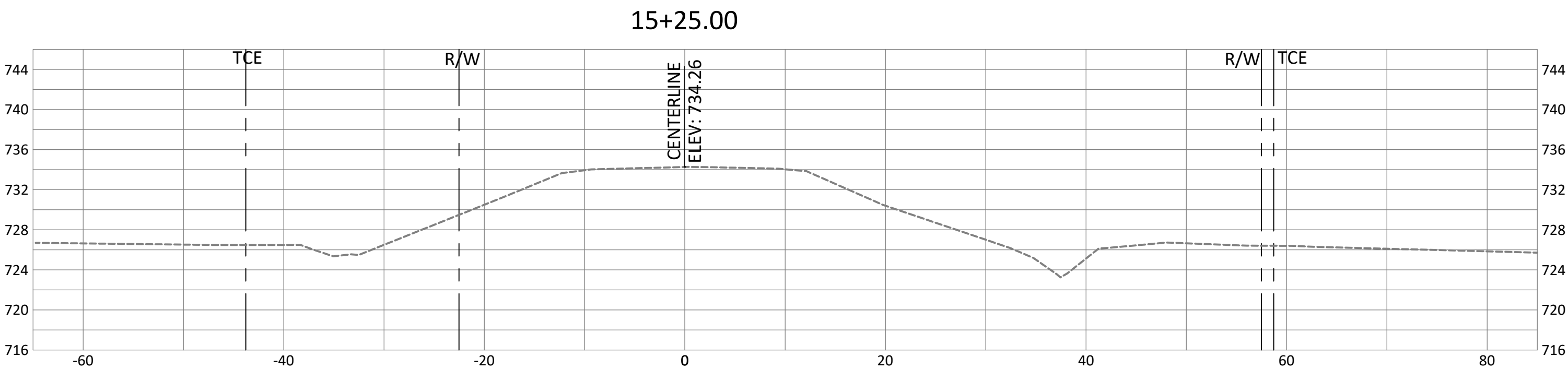
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