



CALL NO. 200

CONTRACT ID. 251007

JEFFERSON COUNTY

FED/STATE PROJECT NUMBER NH 2641 (176)

DESCRIPTION I-264

WORK TYPE BRIDGE WITH GRADE, DRAIN & SURFACE

PRIMARY COMPLETION DATE 6/30/2027

LETTING DATE: March 20,2025

Sealed Bids will be received electronically through the Bid Express bidding service until 10:00 AM EASTERN DAYLIGHT TIME March 20,2025. Bids will be publicly announced at 10:00 AM EASTERN DAYLIGHT TIME.

PLANS AVAILABLE FOR THIS PROJECT.

DBE CERTIFICATION REQUIRED - 10%

REQUIRED BID PROPOSAL GUARANTY: Not less than 5% of the total bid.

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PART I
SCOPE OF WORK

ADMINISTRATIVE DISTRICT - 05

CONTRACT ID - 251007
NH 2641 (176)
COUNTY - JEFFERSON
PCN - DE05602642507
NHPM 2641 (090)

I-264 (MP 20.56) ASPHALT RESURFACING ON I-264 FROM MP 20.590 TO MP 21.280 EB. & MP. 20.560 TO MP 21.020 WB & MP. 22.590 TO MP 22.890 WB (MP 22.89), A DISTANCE OF 02.33 MILES.ASPHALT RESURFACING SYP NO. 05-20017.00.
GEOGRAPHIC COORDINATES LATITUDE 38:16:47.00 LONGITUDE 85:38:10.00
ADT

PCN - DE05602642508
NH 2641 (176)

I-264 / US-42 INTERCHANGE (MP 21.0) RECONSTRUCT/WIDEN 1-264(WATTERSON EXPRESSWAY) FROM WESTPORT ROAD (KY-1447) TO I-71 INCLUDING THE US-42 INTERCHANGE AS A SPUI (MP 22.6), A DISTANCE OF 03.65 MILES.GRADE, DRAIN & SURFACE WITH BRIDGE SYP NO. 05-00804.00.
GEOGRAPHIC COORDINATES LATITUDE 38:16:48.00 LONGITUDE 85:38:11.00
ADT

COMPLETION DATE(S):
COMPLETED BY 06/30/2027 APPLIES TO ENTIRE CONTRACT

CONTRACT NOTES

INSURANCE

Refer to Kentucky Standard Specifications for Road and Bridge Construction, current edition.

PROPOSAL ADDENDA

All addenda to this proposal must be applied when calculating bid and certified in the bid packet submitted to the Kentucky Department of Highways. Failure to use the correct and most recent addenda may result in the bid being rejected.

BID SUBMITTAL

Bidder must use the Department's electronic bidding software. The Bidder must download the bid file located on the Bid Express website (www.bidx.com) to prepare a bid packet for submission to the Department. The bidder must submit electronically using Bid Express.

JOINT VENTURE BIDDING

Joint venture bidding is permissible. All companies in the joint venture must be prequalified in one of the work types in the Qualifications for Bidders for the project. The bidders must get a vendor ID for the joint venture from the Division of Construction Procurement and register the joint venture as a bidder on the project. Also, the joint venture must obtain a digital ID from Bid Express to submit a bid. A joint bid bond of 5% may be submitted for both companies or each company may submit a separate bond of 5%.

UNDERGROUND FACILITY DAMAGE PROTECTION

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. When prescribed in said directives, the contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom shall be contacted through their individual Protection Notification Center. Non-compliance with these directives can result in the enforcement of penalties.

REGISTRATION WITH THE SECRETARY OF STATE BY A FOREIGN ENTITY

Pursuant to KRS 176.085(1)(b), an agency, department, office, or political subdivision of the Commonwealth of Kentucky shall not award a state contract to a person that is a foreign entity required by [KRS 14A.9-010](#) to obtain a certificate of authority to transact business in the Commonwealth ("certificate") from the Secretary of State under [KRS 14A.9-030](#) unless the person produces the certificate within fourteen (14) days of the bid or proposal opening. If the

foreign entity is not required to obtain a certificate as provided in [KRS 14A.9-010](#), the foreign entity should identify the applicable exception. Foreign entity is defined within [KRS 14A.1-070](#).

For all foreign entities required to obtain a certificate of authority to transact business in the Commonwealth, if a copy of the certificate is not received by the contracting agency within the time frame identified above, the foreign entity's solicitation response shall be deemed non-responsive or the awarded contract shall be cancelled.

Businesses can register with the Secretary of State at <https://secure.kentucky.gov/sos/ftbr/welcome.aspx>.

SPECIAL NOTE FOR PROJECT QUESTIONS DURING ADVERTISEMENT

Questions about projects during the advertisement should be submitted in writing to the Division of Construction Procurement. This may be done by email to kytc.projectquestions@ky.gov. The Department will attempt to answer all submitted questions. The Department reserves the right not to answer if the question is not pertinent or does not aid in clarifying the project intent.

The deadline for posting answers will be 3:00 pm Eastern Daylight Time, the day preceding the Letting. Questions may be submitted until this deadline with the understanding that the later a question is submitted, the less likely an answer will be able to be provided.

The questions and answers will be posted for each Letting under the heading "Questions & Answers" on the Construction Procurement website (www.transportation.ky.gov/construction-procurement). The answers provided shall be considered part of this Special Note and, in case of a discrepancy, will govern over all other bidding documents.

HARDWOOD REMOVAL RESTRICTIONS

The US Department of Agriculture has imposed a quarantine in Kentucky and several surrounding states, to prevent the spread of an invasive insect, the emerald ash borer. Hardwood cut in conjunction with the project may not be removed from the state. Chipping or burning on site is the preferred method of disposal.

INSTRUCTIONS FOR EXCESS MATERIAL SITES AND BORROW SITES

Identification of excess material sites and borrow sites shall be the responsibility of the Contractor. The Contractor shall be responsible for compliance with all applicable state and federal laws and may wish to consult with the US Fish and Wildlife Service to seek protection under Section 10 of the Endangered Species Act for these activities.

ACCESS TO RECORDS

The state agency certifies that it is in compliance with the provisions of KRS 45A.150, "Access to contractor's books, documents, papers, records, or other evidence directly pertinent to the contract." The Contractor, as defined in KRS 45A.030, agrees that the contracting agency, the

Finance and Administration Cabinet, the Auditor of Public Accounts, and the Legislative Research Commission, or their duly authorized representatives, shall have access to any books, documents, papers, records, or other evidence, which are directly pertinent to this agreement for the purpose of financial audit or program review. The Contractor also recognizes that any books, documents, papers, records, or other evidence, received during a financial audit or program review shall be subject to the Kentucky Open Records Act, KRS 61.870 to 61.884. Records and other prequalification information confidentially disclosed as part of the bid process shall not be deemed as directly pertinent to the agreement and shall be exempt from disclosure as provided in KRS 61.878(1)(c).

BOYCOTT PROVISIONS

If applicable, the contractor represents that, pursuant to [KRS 45A.607](#), they are not currently engaged in, and will not for the duration of the contract engage in, the boycott of a person or an entity based in or doing business with a jurisdiction with which Kentucky can enjoy open trade. **Note:** The term Boycott does not include actions taken for bona fide business or economic reasons, or actions specifically required by federal or state law.

If applicable, the contractor verifies that, pursuant to KRS 41.480, they do not engage in, and will not for the duration of the contract engage in, in energy company boycotts as defined by KRS 41.472.

LOBBYING PROHIBITIONS

The contractor represents that they, and any subcontractor performing work under the contract, have not violated the agency restrictions contained in [KRS 11A.236](#) during the previous ten (10) years, and pledges to abide by the restrictions set forth in such statute for the duration of the contract awarded.

The contractor further represents that, pursuant to [KRS 45A.328](#), they have not procured an original, subsequent, or similar contract while employing an executive agency lobbyist who was convicted of a crime related to the original, subsequent, or similar contract within five (5) years of the conviction of the lobbyist.

Revised: 1/1/2025

1.0 BUY AMERICA REQUIREMENT.

Follow the “Buy America” provisions as required by 23 U.S.C. § 313 and 23 C.F.R. § 635.410. Except as expressly provided herein all manufacturing processes of steel or iron materials including but not limited to structural steel, guardrail materials, corrugated steel, culvert pipe, structural plate, prestressing strands, and steel reinforcing bars shall occur in the United States of America, including the application of:

- Coating,
- Galvanizing,
- Painting, and
- Other coating that protects or enhances the value of steel or iron products.

The following are exempt, unless processed or refined to include substantial amounts of steel or iron material, and may be used regardless of source in the domestic manufacturing process for steel or iron material:

- Pig iron,
- Processed, pelletized, and reduced iron ore material, or
- Processed alloys.

The Contractor shall submit a certification stating that all manufacturing processes involved with the production of steel or iron materials occurred in the United States.

Produce, mill, fabricate, and manufacture in the United States of America all aluminum components of bridges, tunnels, and large sign support systems, for which either shop fabrication, shop inspection, or certified mill test reports are required as the basis of acceptance by the Department.

Use foreign materials only under the following conditions:

- 1) When the materials are not permanently incorporated into the project; or
- 2) When the delivered cost of such materials used does not exceed 0.1 percent of the total Contract amount or \$2,500.00, whichever is greater.

The Contractor shall submit to the Engineer the origin and value of any foreign material used.

2.0 – BUILD AMERICA, BUY AMERICA (BABA)

Contractor shall comply with the Federal Highway Administration (FHWA) Buy America Requirement in 23 C.F.R. § 635.410 and all relevant provisions of the Build America, Buy America Act (BABA), contained within the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, §§ 70901-52 enacted November 15, 2021. The BABA requires iron, steel, manufactured products, and construction materials used in infrastructure projects funded by federal financial assistance to be produced in the United States. Comply with 2 C.F.R § 184.

BABA permits FHWA participation in the Contract only if domestic steel and iron will be used on the Project. To be considered domestic, all steel and iron used, and all products manufactured from steel and iron must be produced in the United States and all manufacturing processes, including application of a coating, for these materials must occur in the United States. Coating includes all processes that protect or enhance the value of the material to which the coating is applied. This requirement does not preclude a minimal use of foreign steel and iron materials, provided the cost of such materials does not exceed 0.1% of the total contract amount under the Contract or \$2,500.00 whichever is greater.

BABA permits FHWA participation in the Contract only if all “construction materials” as defined in the Act are made in the United States. The Buy America preference applies to the following construction materials

SPECIAL NOTE – BUY AMERICA REQUIREMENTS AND BUILD
AMERICA, BUY AMERICA (BABA) ACT

10/26/2023

incorporated into infrastructure projects: non-ferrous metals; plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables); glass (including optic glass); Fiber optic cable; optical fiber; lumber; engineered wood; and drywall. Contractor will be required to use construction materials produced in the United States on this Project. The Contractor shall submit a certification stating that all construction materials are certified to be BABA compliant.

Finally, BABA permits the continuation of FHWA's current general applicability waivers for manufactured products, raw materials, and ferryboat parts, but these waivers are subject to reevaluation, specifically the general applicability waiver for manufactured products.

The Contractor has completed and submitted, or shall complete and submit, to the Cabinet a Buy America/Build America, Buy America Certificate prior to the Cabinet issuing the notice to proceed, in the format below. After submittal, the Contractor is bound by its original certification.

A false certification is a criminal act in violation of 18 U.S.C. § 1001. The Contractor has the burden of proof to establish that it is in compliance.

At the Contractor's request, the Cabinet may, but is not obligated to, seek a waiver of Buy America requirements if grounds for the waiver exist under 23 C.F.R. § 635.410(c) or will comply with the applicable Buy America requirements if a waiver of those requirements is not available or not pursued by the Cabinet.

Please refer to the Federal Highway Administration's Buy America webpage for more information.

[Buy America - Construction Program Guide - Contract Administration - Construction - Federal Highway Administration \(dot.gov\)](#)

October 26, 2023 Letting

SPECIAL NOTE – BUY AMERICA REQUIREMENTS AND BUILD AMERICA, BUY AMERICA (BABA) ACT

10/26/2023

BUY AMERICA / BUILD AMERICA, BUY AMERICA (ACT) MATERIALS CERTIFICATE OF COMPLIANCE

The Contractor hereby certifies that it will comply with all relevant provisions of the Build America, Buy America Act, contained within the Infrastructure Investment and Jobs Act, Pub. L. NO. 117-58, §§ 70901-52, the requirements of 23 U.S.C. § 313, 23 C.F.R. § 635.410 and 2 C.F.R § 184.

Date Submitted:_____

Contractor:_____

Signature:_____

Printed Name:_____

Title:_____

NOTE: THIS CERTIFICATION IS IN ADDITION TO ANY AND ALL REQUIREMENTS OUTLINED IN THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND/OR SPECIAL NOTES CONTAINED IN THE PROJECT PROPOSAL.

FEDERAL CONTRACT NOTES

The Kentucky Department of Highways, in accordance with the Regulations of the United States Department of Transportation 23 CFR 635.112 (h), hereby notifies all bidders that failure by a bidder to comply with all applicable sections of the current Kentucky Standard Specifications, including, but not limited to the following, may result in a bid not being considered responsive and thus not eligible to be considered for award:

- | | |
|--------------------------------|----------------------------------------------|
| 102.02 Current Rating | 102.08 Preparation and Delivery of Proposals |
| 102.13 Irregular Bid Proposals | 102.14 Disqualification of Bidders |
| 102.09 Proposal Guaranty | |

CIVIL RIGHTS ACT OF 1964

The Kentucky Transportation Cabinet, Department of Highways, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, disability, income- level, or Limited English Proficiency (LEP) in consideration for an award.

NOTICE TO ALL BIDDERS

To report bid rigging activities call: 1-800-424-9071.

The U.S. Department of Transportation (DOT) operates the above toll-free “hotline” Monday through Friday, 8:00 a.m. to 5:00 p.m. eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the “hotline” to report such activities.

The “hotline” is part of the DOT’s continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SECOND TIER SUBCONTRACTS

Second tier subcontracts are acceptable per Section 108.01 of the Standard Specifications for Road and Bridge Construction. Sub-Contractors fulfilling a disadvantaged business enterprise goal on a project may enter into a 2nd tier subcontract with a Non-DBE Subcontractor. However, in this instance, none of the work subcontracted to the Non-DBE Contractor will count toward fulfilling the established Disadvantaged Goal for the project.

DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

It is the policy of the Kentucky Transportation Cabinet (“the Cabinet”) that Disadvantaged Business Enterprises (“DBE”) shall have the opportunity to participate in the performance of highway construction projects financed in whole or in part by Federal Funds in order to create a level playing field for all businesses who wish to contract with the Cabinet. To that end, the Cabinet will comply with the regulations found in 49 CFR Part 26, and the definitions and requirements contained therein shall be adopted as if set out verbatim herein.

The Cabinet, contractors, subcontractors, and sub-recipients shall not discriminate on the basis of race, color, national origin, or sex in the performance of work performed pursuant to Cabinet contracts. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted highway construction projects. The contractor will include this provision in all its subcontracts and supply agreements pertaining to contracts with the Cabinet.

Failure by the contractor to carry out these requirements is a material breach of its contract with the Cabinet, which may result in the termination of the contract or such other remedy as the Cabinet deems necessary.

DBE GOAL

The Disadvantaged Business Enterprise (DBE) goal established for this contract, as listed on the front page of the proposal, is the percentage of the total value of the contract.

The contractor shall exercise all necessary and reasonable steps to ensure that Disadvantaged Business Enterprises participate in a least the percent of the contract as set forth above as goals for this contract.

OBLIGATION OF CONTRACTORS

Each contractor prequalified to perform work on Cabinet projects shall designate and make known to the Cabinet a liaison officer who is assigned the responsibility of effectively administering and promoting an active program for utilization of DBEs.

If a formal goal has not been designated for the contract, all contractors are encouraged to consider DBEs for subcontract work as well as for the supply of material and services needed to perform this work.

Contractors are encouraged to use the services of banks owned and controlled by minorities and women.

CERTIFICATION OF CONTRACT GOAL

Contractors shall include the following certification in bids for projects for which a DBE goal has been established. BIDS SUBMITTED WHICH DO NOT INCLUDE CERTIFICATION OF DBE PARTICIPATION WILL NOT BE ACCEPTED. These bids will not be considered for award by the Cabinet and they will be returned to the bidder.

“The bidder certifies that it has secured participation by Disadvantaged Business Enterprises (“DBE”) in the amount of _____ percent of the total value of this contract and that the DBE participation is in compliance with the requirements of 49 CFR 26 and the policies of the Kentucky Transportation Cabinet pertaining to the DBE Program.”

The certification statement is located in the electronic bid file. All contractors must certify their DBE participation on that page. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted.

DBE PARTICIPATION PLAN

Lowest responsive bidders must submit the *DBE Plan/ Subcontractor Request*, form TC 14-35 DBE, within **5** days of the letting. This is necessary before the Awards Committee will review and make a recommendation. **The project will not be considered for award prior to submission and approval of the apparent low bidder’s DBE Plan/Subcontractor Request.**

The DBE Participation Plan shall include the following:

1. Name and address of DBE Subcontractor(s) and/or supplier(s) intended to be used in the proposed project;
2. Description of the work each is to perform including the work item, unit, quantity, unit price and total amount of the work to be performed by the individual DBE. The Proposal Line Number, Category Number, and the Project Line Number can be found in the “material listing” on the Construction Procurement website under the specific letting;
3. The dollar value of each proposed DBE subcontract and the percentage of total project contract value this represents. DBE participation may be counted as follows:
 - a) If DBE suppliers and manufactures assume actual and contractual responsibility, the dollar value of materials to be furnished will be counted toward the goal as follows:
 - The entire expenditure paid to a DBE manufacturer;
 - 60 percent of expenditures to DBE suppliers that are not manufacturers provided the supplier is a regular dealer in the product involved. A regular dealer must be engaged in, as its principal business and in its own name, the sale of products to the public, maintain an inventory and own and operate distribution equipment; and
 - The amount of fees or commissions charged by the DBE firms for a bona fide service, such as professional, technical, consultant, or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, supplies, delivery of materials and supplies or for furnishing bonds, or insurance, providing such fees or commissions are determined to be reasonable and customary.
 - b) The dollar value of services provided by DBEs such as quality control testing, equipment repair and maintenance, engineering, staking, etc.;

- c) The dollar value of joint ventures. DBE credit for joint ventures will be limited to the dollar amount of the work actually performed by the DBE in the joint venture;
- 4. Written and signed documentation of the bidder's commitment to use a DBE contractor whose participation is being utilized to meet the DBE goal; and
- 5. Written and signed confirmation from the DBE that it is participating in the contract as provided in the prime contractor's commitment.

AFTER PROJECT AWARD AND BEFORE NOTICE TO PROCEED/WORK ORDER IS ISSUED (SEE SECTION 103.06, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION)

Prime Contractors awarded a federally funded project with a DBE Goal greater than zero will be required to submit a fully executed DBE Subcontract, along with the attached FHWA 1273 and Certificate of Liability Insurance for each DBE Firm submitted as part of the previously approved DBE Utilization Plan (TC 14-35). A signed quote or purchase order shall be attached when the DBE subcontractor is a material supplier or broker.

The Certificate of Liability Insurance submitted must meet the requirements outlined in Section 107.18 of the Standard Specifications for Road and Bridge Construction.

Changes to **APPROVED** DBE Participation Plans must be approved by the Office for Civil Rights & Small Business Development. The Cabinet may consider extenuating circumstances including, but not limited to, changes in the nature or scope of the project, the inability or unwillingness of a DBE to perform the work in accordance with the bid, and/or other circumstances beyond the control of the prime contractor.

CONSIDERATION OF GOOD FAITH EFFORTS REQUESTS

If the DBE participation submitted in the bid by the apparent lowest responsive bidder does not meet or exceed the DBE contract goal, the apparent lowest responsive bidder must submit a Good Faith Effort Package to satisfy the Cabinet that sufficient good faith efforts were made to meet the contract goals prior to submission of the bid. Efforts to increase the goal after bid submission will not be considered in justifying the good faith effort, unless the contractor can show that the proposed DBE was solicited prior to the letting date. DBEs utilized in achieving the DBE goal must be certified and prequalified for the work items at the time the bid is submitted. One complete set (hard copy along with an electronic copy) of this information must be received in the Division of Contract Procurement no later than 12:00 noon of the tenth calendar day after receipt of notification that they are the apparent low bidder.

Where the information submitted includes repetitious solicitation letters it will be acceptable to submit a sample representative letter along with a distribution list of the firms solicited. Documentation of DBE quotations shall be a part of the good faith effort submittal as necessary to demonstrate compliance with the factors listed below which the Cabinet considers in judging good faith efforts. This documentation may include written subcontractors' quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

The Good Faith Effort Package shall include, but may not be limited to information showing evidence of the following:

1. Whether the bidder attended any pre-bid meetings that were scheduled by the Cabinet to inform DBEs of subcontracting opportunities;
2. Whether the bidder provided solicitations through all reasonable and available means;
3. Whether the bidder provided written notice to all DBEs listed in the DBE directory at the time of the letting who are prequalified in the areas of work that the bidder will be subcontracting;
4. Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested. If a reasonable amount of DBEs within the targeted districts do not provide an intent to quote or no DBEs are prequalified in the subcontracted areas, the bidder must notify the Disadvantaged Enterprise Business Liaison Officer (DEBLO) in the Office for Civil Rights and Small Business Development to give notification of the bidder's inability to get DBE quotes;
5. Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise perform these work items with its own forces;
6. Whether the bidder provided interested DBEs with adequate and timely information about the plans, specifications, and requirements of the contract;
7. Whether the bidder negotiated in good faith with interested DBEs not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached;
8. Whether quotations were received from interested DBE firms but were rejected as unacceptable without sound reasons why the quotations were considered unacceptable. The fact that the DBE firm's quotation for the work is not the lowest quotation received will not in itself be considered as a sound reason for rejecting the quotation as unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a DBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy DBE goals;
9. Whether the bidder specifically negotiated with subcontractors to assume part of the responsibility to meet the contract DBE goal when the work to be subcontracted includes potential DBE participation;
10. Whether the bidder made any efforts and/or offered assistance to interested DBEs in obtaining the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal; and
11. Any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include DBE participation.

FAILURE TO MEET GOOD FAITH REQUIREMENT

Where the apparent lowest responsive bidder fails to submit sufficient participation by DBE firms to meet the contract goal and upon a determination by the Good Faith Committee based upon the information submitted that the apparent lowest responsive bidder failed to make sufficient reasonable efforts to meet the contract goal, the bidder will be offered the opportunity to meet in person for administrative reconsideration. The bidder will be notified of the Committee's decision within 24 hours of its decision. The bidder will have 24 hours to request reconsideration of the Committee's decision. The reconsideration meeting will be held within two days of the receipt of a request by the bidder for reconsideration.

The request for reconsideration will be heard by the Office of the Secretary. The bidder will have the opportunity to present written documentation or argument concerning the issue of whether it met the goal or made an adequate good faith effort. The bidder will receive a written decision on the reconsideration explaining the basis for the finding that the bidder did or did not meet the goal or made adequate Good Faith efforts to do so.

The result of the reconsideration process is not administratively appealable to the Cabinet or to the United States Department of Transportation.

The Cabinet reserves the right to award the contract to the next lowest responsive bidder or to rebid the contract in the event that the contract is not awarded to the low bidder as the result of a failure to meet the good faith requirement.

SANCTIONS FOR FAILURE TO MEET DBE REQUIREMENTS OF THE PROJECT

Failure by the prime contractor to fulfill the DBE requirements of a project under contract or to demonstrate good faith efforts to meet the goal constitutes a breach of contract. When this occurs, the Cabinet will hold the prime contractor accountable, as would be the case with all other contract provisions. Therefore, the contractor's failure to carry out the DBE contract requirements shall constitute a breach of contract and as such the Cabinet reserves the right to exercise all administrative remedies at its disposal including, but not limited to the following:

- Suspension of Prequalification;
- Disallow credit toward the DBE goal;
- Withholding progress payments;
- Withholding payment to the prime in an amount equal to the unmet portion of the contract goal; and/or
- Termination of the contract.

PROMPT PAYMENT

The prime contractor will be required to pay the DBE and Non-DBE Subcontractors within seven (7) working days after he or she has received payment from the Kentucky Transportation Cabinet for work performed or materials furnished.

CONTRACTOR REPORTING

All contractors must keep detailed records and provide reports to the Cabinet on their progress in meeting the DBE requirement on any highway contract. These records may include, but shall not be limited to payroll, lease agreements, cancelled payroll checks, executed subcontracting agreements, etc. Prime contractors will be required to complete and submit a **signed and notarized** Affidavit of Subcontractor Payment (TC 18-7) and copies of checks for any monies paid to each DBE subcontractor or supplier utilized to meet a DBE goal. These documents must be completed and signed within 7 days of being paid by the Cabinet.

Payment information that needs to be reported includes date the payment is sent to the DBE, check number, Contract ID, amount of payment and the check date. Before Final Payment is made on this contract, the Prime Contractor will certify that all payments were made to the DBE subcontractor and/or DBE suppliers.

***** IMPORTANT *****

Please mail the original, signed and completed TC (18-7) Affidavit of Subcontractor Payment form and all copies of checks for payments listed above to the following address:

Office for Civil Rights and Small Business Development
6th Floor West 200 Mero Street
Frankfort, KY 40622

The prime contractor should notify the KYTC Office for Civil Rights and Small Business Development seven (7) days prior to DBE contractors commencing work on the project. The contact in this office is Mr. Tony Youssefi. Mr. Youssefi's current contact information is email address – tyousseffi@ky.gov and the telephone number is (502) 564-3601.

DEFAULT OR DECERTIFICATION OF THE DBE

If the DBE subcontractor or supplier is decertified or defaults in the performance of its work, and the overall goal cannot be credited for the uncompleted work, the prime contractor may utilize a substitute DBE or elect to fulfill the DBE goal with another DBE on a different work item. If after exerting good faith effort in accordance with the Cabinet's Good Faith Effort policies and procedures, the prime contractor is unable to replace the DBE, then the unmet portion of the goal may be waived at the discretion of the Cabinet.

PROHIBITION ON TELECOMMUNICATIONS EQUIPMENT OR SERVICES

In accordance with the FY 2019 National Defense Authorization Act (NDAA), 2 CFR 200.216, and 2 CFR 200.471, Federal agencies are prohibited, after August 13, 2020, from obligating or expending financial assistance to obtain certain telecommunications and video surveillance services and equipment from specific producers. As a result of these regulations, contractors and subcontractors are prohibited, on projects with federal funding participation, from providing telecommunication or video surveillance equipment, services, or systems produced by:

- Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities)
- Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities)

**LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – CARGO
PREFERENCE ACT (CPA).**

(REV 12-17-15) (1-16)

SECTION 7 is expanded by the following new Article:

102.10 Cargo Preference Act – Use of United States-flag vessels.

Pursuant to Title 46CFR Part 381, the Contractor agrees

- To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
- To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph 1 of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
- To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

ASPHALT MIXTURE

Unless otherwise noted, the Department estimates the rate of application for all asphalt mixtures to be 110 lbs/sy per inch of depth.

INCIDENTAL SURFACING

The Department has included in the quantities of asphalt mixtures established in the proposal estimated quantities required for resurfacing or surfacing mailbox turnouts, farm field entrances, residential and commercial entrances, curve widening, ramp gores and tapers, and road and street approaches, as applicable. Pave these areas to the limits as shown on Standard Drawing RPM-110-06 or as directed by the Engineer. In the event signal detectors are present in the intersecting streets or roads, pave the crossroads to the right of way limit or back of the signal detector, whichever is the farthest back of the mainline. Surface or resurface these areas as directed by the Engineer. The Department will not measure placing and compacting for separate payment but shall be incidental to the Contract unit price for the asphalt mixtures.

ASPHALT PAVEMENT RIDE QUALITY CATEGORY A

The Department will apply Pavement Rideability Requirements on this project in accordance with Section 410, Category A.

OPTION A

Be advised that the Department will accept compaction of asphalt mixtures furnished for driving lanes and ramps, at 1 inch (25mm) or greater, on this project according to OPTION A in accordance with Section 402 and Section 403 of the current Standard Specifications. The Department will require joint cores as described in Section 402.03.02 for surface mixtures only. The Department will accept compaction of all other asphalt mixtures according to OPTION B.

MATERIAL TRANSFER VEHICLE (MTV)

Provide and use a MTV in accordance with Sections 403.02.10 and 403.03.05.



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County:

Jefferson

Item No.:

5-804.00

Federal Project No.:

00STP2641176

Project Description:

Reconstruct/Widen I-264 (Watterson Expressway) from Westport Road (KY 1447) to I-71 including the US 42 Interchange as a SPUI.

I-264

Roadway Classification:

☒ Urban

☐ Rural

☐ Local

☐ Collector

☐ Arterial

☒ Interstate

ADT (current)

56,775

AM Peak Current

5,910

PM Peak Current

5,770

% Trucks

21%

Project Designation:

☒ Significant

☐ Other:

Traffic Control Plan Design:

Taper and Diversion Design Speeds

55 MPH

Minimum Lane Width

11'

Minimum Shoulder Width

2'

Minimum Bridge Width

N/A

Minimum Radius

4,320'

Maximum Grade

2.5%

Minimum Taper Length

N/A

Minimum Intersection Level of Service

N/A

Existing Traffic Queue Lengths

N/A

Projected Traffic Queue Lengths

N/A

Comments:

Traffic Queue Lengths on I-264 were not calculated since the current two or three lanes of traffic are required to be open at all times. Disincentives are applied for any lane closures or the closure of I-264



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Item No. 5-804

US 42

Roadway Classification: ☒ Urban ☐ Rural
☐ Local ☐ Collector ☒ Arterial ☐ Interstate

ADT (current) 39,805 AM Peak Current 3,980 PM Peak Current 3,980 % Trucks 1%

Project Designation: ☒ Significant ☐ Other: _____

Traffic Control Plan Design:

Taper and Diversion Design Speeds 35 MPH

Minimum Lane Width 11' Minimum Shoulder Width 0'

Minimum Bridge Width 46'

Minimum Radius N/A Maximum Grade 0.6%

Minimum Taper Length N/A Minimum Intersection Level of Service N/A

Existing Traffic Queue Lengths N/A Projected Traffic Queue Lengths N/A

Comments:

The Project Team decided to not perform any level of service or queue length calculations due to the number of potential alternative routes available to avoid the US 42 interchange. Predicting the traffic that would still use the US 42 intersection during construction would be very subjective. The Public Information Plan will keep the public up to date on lane reductions on US 42 and any alternative routes.



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Discussion:

1) Public Information Plan			
a) Prepare with assistance from <input checked="" type="checkbox"/> KYTC or <input type="checkbox"/> _____			
b) Identify Trip Generators	Referenced	f) Railroad Involvement	N/A
c) Identify Types of Road Users	Referenced	g) Address Pedestrians, Bikes Mass Transit	Referenced
d) Public Information Message	Referenced	h) Address Timing, Frequency, Updates, Effectiveness of Plan	Referenced
e) Public Information Strategies to be used	Referenced	i) Police & Other Emergency Services	Referenced



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**ITEM #5-0804.00
JEFFERSON COUNTY**

**RECONSTRUCT/WIDEN I-264 (WATTERSON EXPRESSWAY)
FROM WESTPORT ROAD (KY-1447) TO I-71,
INCLUDING THE US-42 INTERCHANGE AS A SPU.**

PUBLIC INFORMATION PLAN

The primary goal of the Public Information Plan (PIP) is to inform the motoring public and area stakeholders of project information including Maintenance of Traffic (MOT) lane and road closures. The KYTC District 5 Public Information Officer (PIO) will coordinate and disseminate to stakeholders and the media appropriate information regarding the construction plans.

LOCAL STAKEHOLDERS

Elected Officials

- State Senator (D26) Karen Berg - (502) 564-8100; Karen.Berg@kylegislature.gov
- State Representative (D48) Ken Fleming - (502) 502-564-8100;
Ken.Fleming@kylegislature.gov
- State Representative (D32) Tina Bojanowski – (502) 564-8100;
Tina.Bojanowski@kylegislature.gov
- Mayor Craig Greenberg - (502) 574-2003; craig.greenberg@louisvilleky.gov
- Metro Councilwoman (D7) Paula McCraney – (502) 574-1107;
paula.mccraney@louisvilleky.gov
- Metro Councilman (D16) Scott Reed - (502) 574-1116; scott.reed@louisvilleky.gov
Legislative Assistant to Scott Reed: Jared Townes – (502) 574-3461;
Jared.Townes@louisvilleky.gov

Local Agencies

- Donald Robinson, Director of Transportation for Jefferson County Public Schools – (502) 485-3472; donald.robinson@jefferson.kyschools.us
- Ozzy Gibson, Transit Authority of the River City (TARC) – (502) 585-1234.
ogibson@ridetarc.org or info@ridetarc.org
- Louisville Metro Police Department Traffic Division – (502) 574-2258
- Louisville Metro Public Works Director, Jennifer Caummisar-Kern; 502-574-5810;
jennifer.kern@louisvilleky.gov
- Mark Giuffre, UPS – (502) 329-3060; mgiuffre@ups.com
- Chief Brian C. O'Neill, Louisville Fire Department – (502) 574-370.
- Ballard High School (principal) – (502) 485-8206
- Nick Clark (Fire Chief), St Matthews Fire & EMS; 502-893-7825; Email:
info@stmfldky.gov
- Executive Assistant Chief Kevin Tyler (currently Interim Fire Chief); Anchorage Middletown Fire and EMS; 502-245-7555 ext. 105; Email: kt Tyler@amfems.org
- Morgan Woodrum (KYTC District 5 PIO) – (502) 764-0481. Morgan.Woodrum@ky.gov



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- Virgie Long, over dimensional Permits – (502) 564-7150; virgie.long@ky.gov
- [VA Louisville Health Care, Public Affairs Office – \(502\) 287-5502; Jarrad Hensley-Jarrad.Hensley@va.gov](#)

Utility Companies

- Local utility companies are kept apprised of this project at the monthly utility coordination meetings hosted by District 5.

TRUCKING FIRMS AND OUT OF STATE STAKEHOLDERS

Information will be distributed electronically to trucking firms via Rick Taylor at the Department of Vehicle Regulation (502-564-4540; rick.taylor@ky.gov). Information will also be posted on the 511 website (www.511.ky.gov) and on the 511-telephone information system.

PRESENTATIONS

A project description including anticipated schedule will be provided to the media, stakeholders, and other emergency service agencies via e-mail prior to construction. Information will be provided to these groups via traffic advisories, press releases, the District 5 website and the weekly District 5 Road Show of Construction and Maintenance Activities.

MEDIA RELATIONS

The District PIO will prepare an initial news release regarding the contract award for the project. The PIO will conduct interviews with the media throughout the project duration to keep the public informed of construction progress. Traffic advisories will be submitted to the media when a change in the MOT occurs. The contractor must provide to the PIO via the Resident Engineer notification of any change in the MOT at least five (5) days prior to the change.



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2) Temporary Traffic Control Plan I-264 Phases 2A & 5A	
Exposure Control Measures	Positive Protection Measures
a) Is Road Closure Allowed Type: N/A	a) Address Drop Off Protection Criteria Referenced
b) Detour Conditions N/A	b) Temporary Barrier Requirements Referenced
c) Working Hour Restrictions Referenced	c) Evaluation of Existing Guardrail Conditions Referenced
d) Holiday or Special Event Work Restrictions Referenced	d) Address Temporary Drainage Referenced
e) Evaluation of Intersection LOS N/A	Uniformed Law Enforcement Officers Referenced
f) Evaluation of Queue Lengths N/A	Payment for Traffic Control*
g) Evaluation of User Costs and Incentives/Disincentives Referenced	a) Method of Project Bidding Referenced
h) Address Pedestrians, Bikes, Mass Transit N/A	b) Special Notes Referenced
Work Vehicles and Equipment Referenced	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction
Comments:	
Road Closures are not allowed on I-264 at any time. Disincentive Fees are included. Road and Lane Closures and Blasting are not allowed on specified Holidays and Special Events Dates.	



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Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 5-804

2) Temporary Traffic Control Plan US 42 Phases 1, 2, 3, 4A, 4B, 5 & 6	
Exposure Control Measures	Positive Protection Measures
a) Is Road Closure Allowed Type: Referenced	a) Address Drop Off Protection Criteria Referenced
b) Detour Conditions N/A	b) Temporary Barrier Requirements Referenced
c) Working Hour Restrictions Referenced	c) Evaluation of Existing Guardrail Conditions Referenced
d) Holiday or Special Event Work Restrictions Referenced	d) Address Temporary Drainage Referenced
e) Evaluation of Intersection LOS N/A	Uniformed Law Enforcement Officers Referenced
f) Evaluation of Queue Lengths N/A	Payment for Traffic Control*
g) Evaluation of User Costs and Incentives/Disincentives N/A	a) Method of Project Bidding Referenced
h) Address Pedestrians, Bikes, Mass Transit Referenced	b) Special Notes Referenced
Work Vehicles and Equipment Referenced	*Payment for traffic control items shall be in accordance with the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction
Comments:	
Road Closures of US 42 are only allowed for up to 20 minutes and are not allowed during 6:00 AM to 9:00 AM and 3:00 PM and 6:00 PM. Stoppages will also not be allowed on Holidays and Special Events Dates. Disincentives are provided for any road closures in these time frames.	



Kentucky Transportation Cabinet
Division of Highway Design
TRAFFIC MANAGEMENT PLAN

Item No. 5-804

APPROVAL:

Keith Downs 1/28/2025
Project Manager Date

Stan RL M 1/29/25
Project Delivery and Preservation Manager Date

Ken Bailey 1/29/25
Engineering Support Manager Date

NOT REQUIRED
FHWA Representative Date

Revisions to the TMP require review/approval by the signatories.

MAINTENANCE OF TRAFFIC NOTES – GENERAL NOTES

1. TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE STANDARD DRAWINGS.

2. ANY TEMPORARY TRAFFIC CONTROL ITEMS, DEVICES, MATERIALS AND INCIDENTALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR, UNLESS OTHERWISE ADDRESSED, WHEN NO LONGER NEEDED.

3. THE CONTRACTOR SHALL COMPLETELY COVER ANY SIGNS, EITHER EXISTING PERMANENT, OR TEMPORARY WHICH DO NOT PROPERLY APPLY TO THE CURRENT TRAFFIC PHASING, AND SHALL MAINTAIN THE COVERING UNTIL THE SIGNS ARE REMOVED. THE CONTRACTOR MAY RELOCATE ANY EXISTING SIGN DISTURBED BY ACTIVE CONSTRUCTION, WHICH REMAINS APPLICABLE WHILE CONSTRUCTION IS OCCURRING, TO A LOCATION AS APPROVED BY THE ENGINEER.

4. IN GENERAL, ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED STARTING AND PROCEEDING IN THE DIRECTION OF THE FLOW OF TRAFFIC AND BE MOVED DURING CONSTRUCTION ACTIVITIES TO ACCOMMODATE THE FLOW OF TRAFFIC. TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE MOVED DURING CONSTRUCTION ACTIVITIES TO ACCOMMODATE THE GREATEST LANE WIDTH AVAILABLE FOR ALL TRAVEL LANES.

5. THE ENGINEER AND THE CONTRACTOR, OR THEIR AUTHORIZED REPRESENTATIVES, SHALL REVIEW THE SIGNING BEFORE TRAFFIC IS ALLOWED TO USE ANY LANE CLOSURE, CROSSOVERS OR DETOURS. ALL SIGNING SHALL BE APPROVED BY THE ENGINEER BEFORE WORK CAN BE STARTED BY THE CONTRACTOR.

6. IF THE CONTRACTOR DESIRES TO DEVIATE FROM THE TRAFFIC CONTROL SCHEME AND CONSTRUCTION SCHEDULE OUTLINED IN THESE PLANS AND THIS PROPOSAL, HE SHALL PREPARE AN ALTERNATE PLAN AND PRESENT IT IN WRITING TO THE ENGINEER. THIS ALTERNATE PLAN CAN BE USED ONLY AFTER REVIEW AND APPROVAL OF THE DIVISIONS OF TRAFFIC, DESIGN AND CONSTRUCTION, AND THE FEDERAL HIGHWAY ADMINISTRATION, WHERE APPLICABLE.

7. 9H COORDINATION - THE CONTRACTOR SHALL NOTIFY JEFFERSON COUNTY 9H SERVICE TWO WEEKS PRIOR TO ANY RAMP CLOSURES.

8. LAW ENFORCEMENT OFFICERS
THE CONTRACTOR SHALL PROVIDE LAW ENFORCEMENT OFFICER UNITS, CONSISTING OF ON OFF - DUTY POLICE OFFICER AND OF POLICE VEHICLE OPERATOR, TO MAINTAIN TRAFFIC CONTROL DURING CONSTRUCTION. THE POLICE OFFICER SHALL BE AN OFF-DUTY POLICE OFFICER FROM ANY POLICE AGENCY IN JEFFERSON COUNTY, KENTUCKY. PAYMENT AT THE CONTRACT UNIT PRICE PER HOUR SHALL BE FULL COMPENSATION FOR ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS FOR THE POLICE UNIT CONSISTING OF ONE POLICE OFFICER AND ONE VEHICLE. LOCATIONS REQUIRING LAW ENFORCEMENT OFFICERS SHALL BE COORDINATED WITH AND AS DIRECTED BY THE ENGINEER.

9. EXCEPT FOR THE ROADWAY AND TRAFFIC CONTROL BID ITEMS LISTED, ALL ITEMS OF WORK NECESSARY TO MAINTAIN AND CONTROL TRAFFIC WILL BE PAID FOR AT THE LUMP SUM BID PRICE TO MAINTAIN AND CONTROL TRAFFIC, AS SET FORTH IN THE CURRENT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION UNLESS OTHERWISE PROVIDED FOR IN THESE PLANS. ITEM #2653 LANE CLOSURE FOR ALL LANE CLOSURES TO BE LEFT IN OVER 3 DAYS AND ITEM #2659N RELOCATE SIGNAL HEADS ARE NOT BID ITEMS ON THIS PROJECT. THE RELOCATION OF SIGNAL HEADS AND LANE CLOSURES WILL BE INCIDENTAL TO ITEM #2650 MAINTAIN & CONTROL TRAFFIC WITH NO DIRECT PAYMENT.

10. TEMPORARY WIDENING OF RAMPS WILL BE PAID FOR AS TEMPORARY PAVEMENT AND IS INCLUDED IN THE MOT TOTALS ON THE PAVING SUMMARY. THERE WILL BE NO DIRECT PAYMENT FOR DIVERSIONS.

11. THE CONTRACTOR SHALL PROVIDE PORTABLE VARIABLE MESSAGE SIGNS FOR EACH APPROACH TO THE PROJECT. MESSAGE SIGNS SHALL BE THE TYPE THAT ALLOWS THE DISPLAYED MESSAGE TO BE CHANGED FROM A REMOTE LOCATION AND SHALL BE LOCATED AS DIRECTED AND APPROVED BY THE ENGINEER. THE PORTABLE VARIABLE MESSAGE SIGNS SHALL BE USED WHEN NECESSARY TO ALERT THE PUBLIC OF POSSIBLE DELAYS AND SHALL BE IN OPERATION AT ALL TIMES. IN THE EVENT OF DAMAGE OR MECHANICAL/ELECTRICAL FAILURE, THE CONTRACTOR SHALL REPAIR OR REPLACE THE PORTABLE VARIABLE MESSAGE SIGN IMMEDIATELY. A SPARE PORTABLE VARIABLE MESSAGE SIGN SHALL BE KEPT ON THE PROJECT AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN THE PORTABLE VARIABLE MESSAGE SIGNS IN FULL OPERATIONAL CONDITION. PORTABLE VARIABLE MESSAGE SIGNS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR UPON COMPLETION OF THE PROJECT.

12. THE CONTRACTOR WILL PREPARE AND SUBMIT A DETAILED TRAFFIC MANAGEMENT PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST ONE MONTH PRIOR TO ANY CONSTRUCTION ACTIVITY BEGINNING. THIS PLAN WILL INCLUDE, BUT NOT BE LIMITED TO: A PUBLIC INFORMATION PLAN TO BE USED TO INFORM THE PUBLIC OF THE PROJECT AND THE TRAFFIC MANAGEMENT PLAN; A PLAN FOR THE PROTECTION OF THE CONTROL PERSONNEL AND EQUIPMENT; CONSTRUCTION EQUIPMENT TO BE USED ON AND AROUND ROAD PASSAGE OR RESTRICTION OF WIDE LOADS; AND SAFETY OF TRAFFIC AND CONSTRUCTION PERSONNEL. THE PLAN WILL ALSO CONFORM TO AND INCLUDE THE PROCEDURES OUTLINED IN THE TRAFFIC MANAGEMENT PLAN DOCUMENT FOR PUBLIC AND STAKEHOLDER COMMUNICATION AND INVOLVEMENT.

13. CONSTRUCTION OPERATIONS USING SHOULDER CLOSURES WILL BE ALLOWED DURING ALL DAYLIGHT HOURS (EXCEPT HOLIDAYS) PROVIDED ANY RESULTING TEMPORARY DROP-OFF CONDITIONS AND SIGNING REQUIREMENTS ARE ADEQUATELY ADDRESSED.

14. REASONABLE MEANS OF INGRESS AND EGRESS SHALL BE MAINTAINED TO ALL PROPERTIES WITHIN THE PROJECT LIMITS. ACCESS TO THE FIRE HYDRANTS MUST ALSO BE MAINTAINED AT ALL TIMES.

15. PAVEMENT DROP-OFF
A PAVEMENT EDGE THAT TRAFFIC IS NOT EXPECTED TO CROSS, EXCEPT ACCIDENTALLY, SHOULD BE TREATED AS FOLLOWS:
- LESS THAN TWO INCHES - NO PROTECTION REQUIRED. WARNING SIGNS SHOULD BE PLACED IN ADVANCE OF AND THROUGHOUT THE DROP-OFF AREA.
- TWO TO FOUR INCHES - SHALL BE PROTECTED BY PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES EVERY 100 FEET ON TANGENT SECTIONS FOR SPEEDS OF 50 MPH OR GREATER. CONES MAY BE USED IN PLACE OF PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES DURING DAYLIGHT HOURS. SIGNING WITH 500 FEET ADVANCE WARNING SHALL BE USED THROUGHOUT THE DROP-OFF AREA. ALL CURVED SECTIONS SHALL BE PROTECTED BY PLASTIC DRUMS, VERTICAL PANELS, OR BARRICADES EVERY 50 FEET. SPACING OF DEVICES ON TAPERED SECTIONS SHOULD BE IN ACCORDANCE WITH MUTCD, CURRENT EDITION.
- GREATER THAN FOUR INCHES - POSITIVE SEPARATION OR WEDGE WITH 3x1 OR FLATTER NEEDED. IF THERE IS FIVE FEET OR MORE DISTANCE BETWEEN THE EDGE OF THE PAVEMENT AND THE DROP-OFF, THEN DRUMS, PANEL, OR BARRICADES MAY BE USED. IF THERE IS LESS THAN FIVE FEET DISTANCE BETWEEN THE EDGE OF THE PAVEMENT AND THE DROP-OFF, THEN DRUMS, PANEL, OR BARRICADES MUST BE USED. USED, SPECIAL REFLECTIVE DEVICES OR STEADY BURN LIGHTS SHOULD BE USED FOR OVERNIGHT INSTALLATIONS.

16. BLASTING OPERATIONS
THE CONTRACTOR WHEN USING EXPLOSIVE CHARGES OF ANY KIND FOR THE PURPOSE OF EXCAVATING, REMOVAL, ETC., ON THIS PROJECT SHALL HALT AT A SAFE DISTANCE ON EITHER SIDE OF THE BLAST AREA. SUITABLE EQUIPMENT SHALL BE ON HAND TO REMEDIATE ANY BLASTING OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY INSPECT THE PAVEMENTS FOR ANY DEBRIS THAT MAY BE A HAZARD TO TRAFFIC BEFORE ALLOWING TRAFFIC TO PROCEED ON THE AFFECTED SECTION. WHEN BLASTING, THE CONTRACTOR SHALL HALT TRAFFIC BLAST, CLEAN THE EXISTING PAVEMENTS AND RETURN TRAFFIC TO NORMAL OPERATION IN 20 MINUTES. BLASTING WILL NOT BE PERMITTED ON WEEKDAYS BETWEEN HOURS OF 6:00AM TO 9:00AM OR BETWEEN THE HOURS OF 3:00PM AND 6:00PM OR ANYTIME ON HOLIDAYS ON SPECIAL EVENT DAYS. BLAST BLANKETS WILL ALSO BE REQUIRED.

17. BRIDGE REMOVAL OPERATIONS SHALL BE RESTRICTED TO THE BETWEEN THE HOURS OF 8:00 PM TO 6:00 AM. LAW ENFORCEMENT PRESENCE WILL BE REQUIRED DURING THE REMOVAL OF THE EXISTING US 42 BRIDGE OVER I-264 WHEN I-264 IS CLOSED TO THE AID OF LAW ENFORCEMENT FOR TRAFFIC CONTROL. WILL BE ROUTED ONTO THE I-264 OFF AND ON RAMPS AND OVER US 42 WITH THE AID OF LAW ENFORCEMENT FOR TRAFFIC CONTROL.

18. A DISINCENTIVE FEE WILL BE CHARGED FOR FAILURE TO REOPEN I-264 WITHIN 20 MINUTES, AS NOTED BELOW:
20 TO 40 MINUTES - \$10,000
40 TO 60 MINUTES - \$20,000
60 TO 80 MINUTES - \$40,000
AFTER 80 MINUTES - \$10,000 PER MINUTE

19. NO LANE CLOSURES WILL BE ALLOWED DURING THE OBSERVANCE OF ALL NATIONAL HOLIDAYS IDENTIFIED IN SECTION 101 OF THE KYTC DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTIONS UNLESS APPROVED BY THE ENGINEER. UNDER SPECIAL CIRCUMSTANCES, KYTC REQUIRES THE RIGHT TO RESTRICT THE USE OF LANE CLOSURES DUE TO UNFORESEEN SPECIAL EVENTS.

20. TRAFFIC STOPPAGE AND LANE CLOSURES
ALL ROAD AND LANE CLOSURE RESTRICTIONS LISTED SHALL APPLY TO MAINLINE I-264 AND ALL APPROACHES, RAMPS, AND SIDE ROADS. ANY DEVIATION MUST BE PREAPPROVED BY THE ENGINEER.

21. LISTED BELOW ARE DATES AND TIMES FOR HOLIDAYS AND SPECIAL EVENTS WHEN ROAD CLOSURES, LANE CLOSURES AND BLASTING WILL NOT BE ALLOWED.

2025

THUNDER OVER LOUISVILLE	6:00 AM FRIDAY, APRIL 11	TO 6:00 AM MONDAY, APRIL 14
EASTER	6:00 AM FRIDAY, APRIL 18	TO 6:00 AM MONDAY, APRIL 21
KENTUCKY DERBY	6:00 AM FRIDAY, APRIL 25	TO 6:00 AM MONDAY, MAY 5
INDEPENDENCE DAY	6:00 AM TUESDAY, JULY 1	TO 6:00 AM MONDAY, JULY 7
JULY 4TH	6:00 AM TUESDAY, JULY 1	TO 6:00 AM MONDAY, JULY 7
LABOR DAY	6:00 AM FRIDAY, AUGUST 29	TO 6:00 AM TUESDAY, SEPTEMBER 2
THANKSGIVING	6:00 AM WEDNESDAY, NOVEMBER 26	TO 6:00 AM MONDAY, DECEMBER 1
CHRISTMAS/NEW YEARS	6:00 AM FRIDAY, DECEMBER 19	TO 6:00 AM FRIDAY, JANUARY 2
ST. VALENTINE'S DAY	6:00 AM FRIDAY, FEBRUARY 14	TO 6:00 AM MONDAY, FEBRUARY 18
LOUDER THAN LIFE	6:00 AM THURSDAY, SEPTEMBER 18	TO 6:00 AM MONDAY, SEPTEMBER 22

FUTURE HOLIDAY DATES SHALL BE DETERMINED BY THE DEPARTMENT IF NECESSARY, COMPARABLE TO ABOVE DATES. THE ABOVE DATES ARE SUBJECT TO CHANGE IF THE DEPARTMENT DEMANDS NECESSARY.

22. IF CONSTRUCTION ADJACENT TO THE TRAVELED WAY IS NOT COMPLETED DURING A PERIOD ALLOWING LANE CLOSURES, THEN THE LANE CLOSURE MUST BE REMOVED.

23. LANE CLOSURES SHALL NOT BE LEFT IN PLACE DURING NON-WORKING HOURS.

ADDITIONALLY, LIQUIDATED DAMAGES WILL BE CHARGED FOR EACH HOUR OR PORTION OF AN HOUR THAT A MAINLINE I-264 LANE CLOSURE, THAT REDUCES TRAFFIC TO ONE LANE, IS LEFT IN PLACE DURING NON-WORKING HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF THE LANE CLOSURE DURING TIMES PROHIBITED IN THE PROJECT PHASING AND CONSTRUCTION PROCEDURES. A PENALTY OF \$7,500 WILL BE ASSESSED FOR THE FIRST 15 MINUTES TRAFFIC IS REDUCED TO ONE LANE. AN ADDITIONAL PENALTY OF \$2,500 WILL BE ASSESSED FOR THE SECOND 15 MINUTES TRAFFIC IS REDUCED TO ONE LANE. AN ADDITIONAL PENALTY OF \$2,500 WILL BE ASSESSED FOR THE THIRD 15 MINUTES TRAFFIC IS REDUCED TO ONE LANE, AND AN ADDITIONAL PENALTY OF \$2,500 WILL BE ASSESSED FOR THE FINAL 15 MINUTES OF THE FIRST HOUR TRAFFIC IS REDUCED TO ONE LANE. A PENALTY OF \$7,500 PER HOUR, PER LANE CLOSURE, WILL BE ASSESSED FOR THE SECOND HOUR, OR PORTION OF AN HOUR, AND ALL SUCCESSIVE HOURS, OR PORTION OF AN HOUR, THAT TRAFFIC IS REDUCED TO ONE LANE DURING TIMES PROHIBITED IN THE PROJECT PHASING AND CONSTRUCTION PROCEDURES.

THE CONTRACTOR IS CAUTIONED THAT THE ENGINEER MAY, WITH A MINIMUM OF 48 HOURS WRITTEN NOTICE, PROHIBIT LANE CLOSURES ON HOLIDAYS OR OTHER SPECIAL DATES WHEN THE LANE CLOSURES WILL BE DETRIMENTAL TO THE FLOW OF TRAFFIC.

24. REMOVAL OF PAVEMENT MARKINGS
PAVEMENT MARKINGS SHALL BE REMOVED BY ULTRA-HIGH PRESSURE WATER BLASTING IN ACCORDANCE WITH SECTION 713.03.04 OF THE KYTC STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (CURRENT EDITION).

25. RAISED BARRIER MEDIAN REMOVAL ON BRIDGE - THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE BRIDGE IF ANY DAMAGE OCCURS TO THE BRIDGE DECK DURING REMOVAL OF THE BARRIER MEDIAN. A QUANTITY OF TEMPORARY PAVEMENT IS INCLUDED IN THE MOT TOTALS ON THE PAVING SUMMARY TO REPAIR MINOR DAMAGES DUE TO THE REMOVAL OF THE RAISED BARRIER MEDIAN AND TO KEEP THE BRIDGE DECK IN GOOD CONDITION. TEMPORARY PAVEMENT IS TO BE USED TO REPAIR MINOR DAMAGE OCCURRING FROM THE REMOVAL OF THE CONCRETE MEDIAN. EXTRA PAYMENT WILL NOT BE MADE TO REPAIR MAJOR DAMAGE OCCURRING FROM REMOVAL OF THE RAISED BARRIER MEDIAN.

26. A QUANTITY OF TEMPORARY PAVEMENT (57 TONS OF CL2 ASPH SURF 0.380 PG 64-221) IS INCLUDED IN THE MOT TOTALS ON THE PAVING SUMMARY TO OVERLAY THE BRIDGE DECK WITH 1.5 INCHES OF BITUMINOUS MATERIAL DURING PHASE 1.

27. TEMPORARY TAPE - ITEM NO. 6550 - PAVE STRIPING - TEMP REM TAPE-W AND ITEM NO. 6551 - PAVE STRIPING - TEMP REM TAPE-Y WILL BE USED FOR TEMPORARY STRIPING ON THE EXISTING AND PROPOSED BRIDGE DECKS.

28. PAVEMENT, BARRIER WALLS, AND DRAINAGE
ANY LOCATIONS WHERE THE PROPOSED SHOULDERS ARE TO BE USED FOR MAINTENANCE OF TRAFFIC, THEY SHALL BE PAVED TO FILL DEPTH MATCHING MAINLINE PAVEMENT. ANY LOCATIONS WHERE THE PROPOSED SHOULDERS ARE NOT TO BE USED FOR MAINTENANCE OF TRAFFIC, THEY SHALL BE PAVED TO MATCH EXISTING PAVEMENT. WIDENING OF EXISTING PAVEMENT WITH TEMPORARY RAMP ACCESS POINTS ARE INCLUDED IN THE PLANS. WHERE PORTIONS OF PERMANENT BARRIER WALLS ARE CONSTRUCTED, ALL END POINTS WITHIN THE CLEAR ZONE ARE TO BE PROTECTED WITH TEMPORARY CRASH CUSHIONS. WHERE BARRIER DRAINAGE INLETS ARE CONSTRUCTED BEFORE THE WALL, THE BOTTOM PHASES SHALL BE COVERED WITH A STEEL PLATE OR REINFORCED CONCRETE CAP TO THE SATISFACTION OF THE ENGINEER (THE CAP TO BE INCLUDED IN THE BID PRICE FOR THE BOX INLET).

29. TEMPORARY SPEED LIMITS - DURING CONSTRUCTION THE SPEED LIMITS POSTED ON I-264 SHALL BE 45 MPH WITH 30 MPH POSTED ON US 42.

30. IF TRAFFIC SHOULD BE STOPPED DUE TO CONSTRUCTION OPERATIONS AND AN EMERGENCY VEHICLE ON AN OFFICIAL EMERGENCY RUN ARRIVES AT THE SCENE, THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE PASSAGE OF THAT VEHICLE AS QUICKLY AS POSSIBLE.

31. A MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED ON ALL ROADWAYS WITHIN THE PROJECT LIMITS AT ALL TIMES UNLESS OTHERWISE NOTED IN THE PAVEMENT DROP-OFF.

32. TRAFFIC CONTROL COORDINATOR
THE CONTRACTOR SHALL EMPLOY A TRAFFIC CONTROL COORDINATOR. THE TRAFFIC COORDINATOR SHALL INSPECT THE PROJECT MAINTENANCE OF TRAFFIC AT LEAST ONCE A DAY, MONDAY THROUGH FRIDAY, AND TWICE A DAY MORNING AND EVENING SATURDAY AND SUNDAY FOR THE LIFE OF THE PROJECT. ADDITIONALLY, THE TRAFFIC COORDINATOR SHALL REPORT ALL INCIDENTS THROUGHOUT THE WORK ZONE TO THE ENGINEER ON THE PROJECT. A TRAFFIC COORDINATOR SHALL BE ON THE PROJECT AT ALL TIMES WHEN LANE CLOSURES ARE IN USE TO INSPECT THE TRAFFIC CONTROL, MAINTAIN THE SIGNING AND DEVICES AND RELOCATE VARIABLE MESSAGE BOARDS AS NEEDED OR AS DIRECTED BY THE ENGINEER. A TRAFFIC COORDINATOR SHALL BE ON CALL 24 HOURS A DAY, 7 DAYS A WEEK FOR THE PROJECT. THE TRAFFIC COORDINATOR SHALL BE RESPONSIBLE FOR THE TRAFFIC CONTROL DURING CONSTRUCTION. THE CONTRACTOR SHALL FURNISH THE NAME AND TELEPHONE NUMBER WHERE THE TRAFFIC COORDINATOR CAN BE CONTACTED AT ANY TIME. THE TRAFFIC COORDINATOR SHALL HAVE ACCESS ON THE PROJECT TO A RADIO OR TELEPHONE TO BE USED IN CASE OF EMERGENCIES OR ACCIDENTS.

FILE NAME: C:\PM\WORKDIR\JASON\DM50589\MOI-US42-NOTES.DGN

DATE PLOTTED: January 27, 2025

SHEET NAME: R017A.PLT

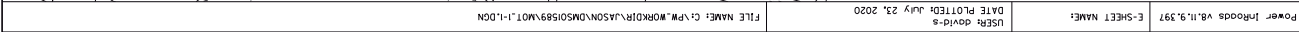
5-SHEET: 98.11.9.297

MAINTENANCE OF TRAFFIC NOTES

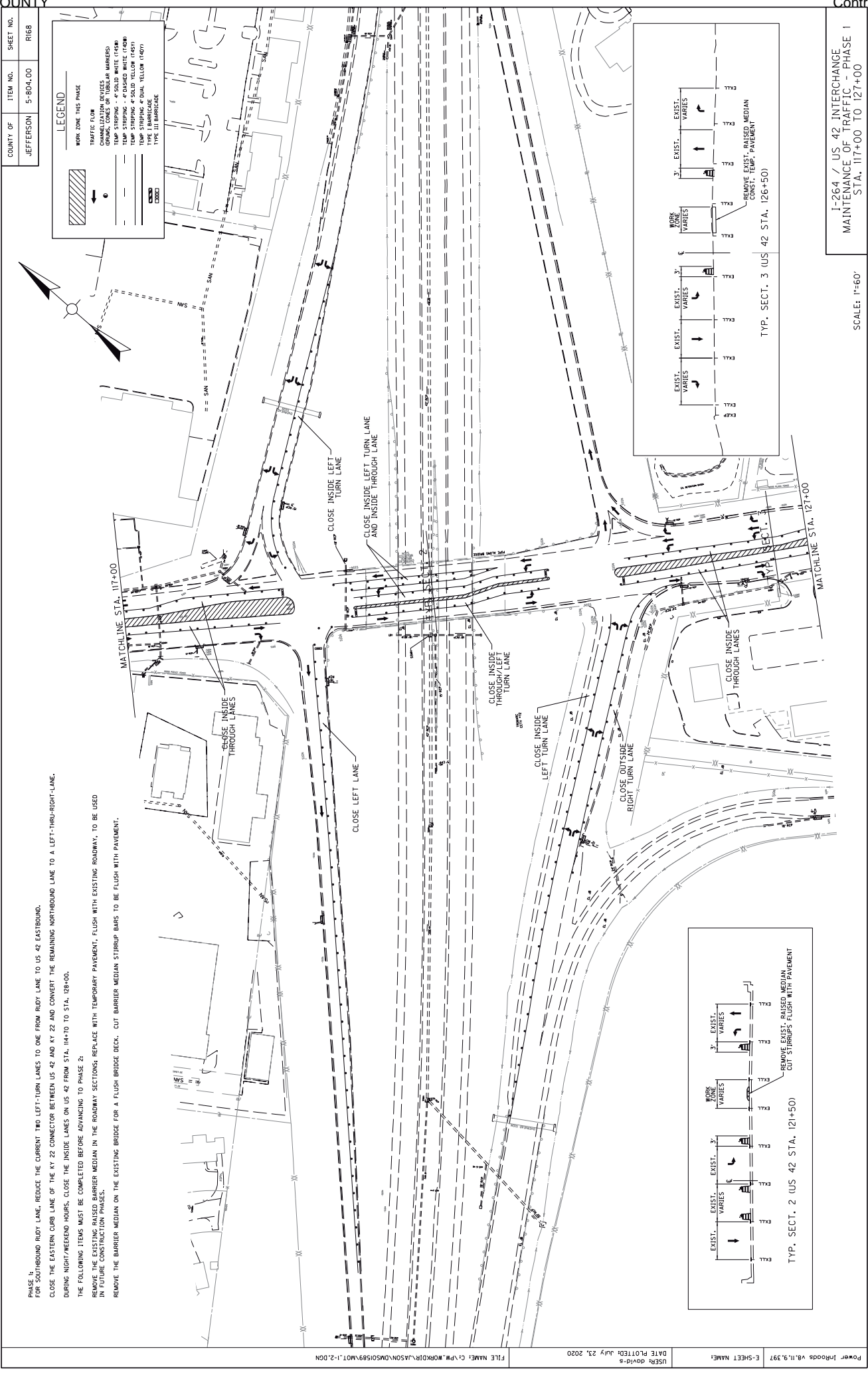
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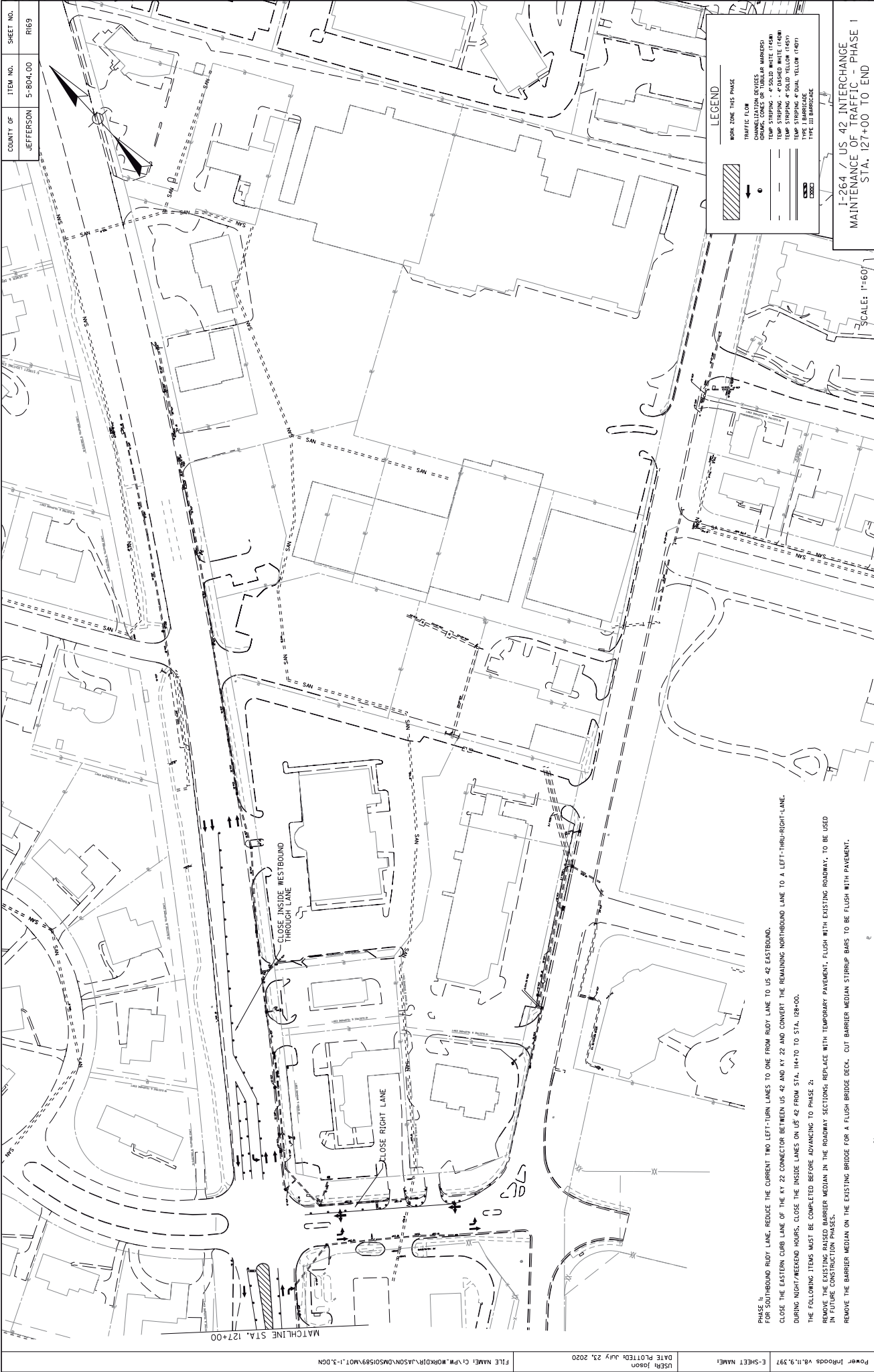
COUNTY OF JEFFERSON				ITEM NO. 5-804.00	SHEET NO. R166
MAINTENANCE OF TRAFFIC PHASING NOTES					
<p>PHASE 5A:</p> <p>INCLUDES CONSTRUCTION ALONG THE I 264 EASTBOUND AND WESTBOUND LANES, I 71 NORTHBOUND AND SOUTHBOUND RAMP, WESTPORT ROAD RAMP AND RAMPS A, D, E AND H.</p> <p>WITH USE OF APPROPRIATE TRAFFIC CONTROL DEVICES, THE CONTRACTOR SHALL TEMPORARILY SHIFT THE TRAFFIC ALONG THE I 264 EASTBOUND AND WESTBOUND LANES, I 71 NORTHBOUND AND SOUTHBOUND RAMP, WESTPORT ROAD RAMP AND RAMPS A, D, E AND H AS DEPICTED WITHIN THE TMP. THE CONTRACTOR SHALL THEN CONSTRUCT THE BARRIER WALL TYPE 3T AND CRASH CUSHIONS 1T 41, CLASS B1, 1L3 WHERE APPLICABLE AS DEPICTED WITHIN THE TMP AT THE FOLLOWING APPROXIMATE LOCATIONS:</p> <p>WESTPORT RAMP OUTSIDE SHOULDER: LT. STA. 8+50 TO LT. STA. 23+56 RT. STA. 5076+65 TO LT. STA. 5100+65 RT. STA. 5076+65 TO LT. STA. 5080+65 RAMP D OUTSIDE SHOULDER: LT. STA. 4009+50 TO LT. STA. 4061+88 RT. STA. 5073+50 TO RT. STA. 5100+29 I 264 EASTBOUND OUTSIDE SHOULDER: RT. STA. 5105+00 TO RT. STA. 5128+50 RT. STA. 5100+39 TO RT. STA. 5144+09 RAMP E OUTSIDE SHOULDER: LT. STA. 5100+39 TO RT. STA. 5144+09 RAMP H OUTSIDE SHOULDER: RT. STA. 2006+90 TO LT. STA. 2011+90 I 71 SOUTHBOUND RAMP (RIGHT SHOULDER): RT. STA. 37+00 TO RT. STA. 59+75 RT. STA. 54+50 TO RT. STA. 59+75 LT. STA. 70+00 TO LT. STA. 76+00 I 71 NORTHBOUND RAMP: LT. STA. 77+50 TO LT. STA. 88+70</p> <p>WITH TRAFFIC BEING MAINTAINED THROUGH THE CORRIDOR, THE CONTRACTOR SHALL CONSTRUCT THE FOLLOWING REMAINING PROPOSED ITEMS:</p> <p>DRAINAGE STRUCTURES, ROADWAY WIDENING AND BRIDGE WIDENING.</p> <p>FINAL PAVEMENT COURSES, GUARDRAIL, STRIPING & SIGNAGE, PERMANENT SEEDING AND PROTECTION AND ANY OTHER REMAINING PLAN ITEMS SHALL BE CONSTRUCTED UNDER TRAFFIC AS NEEDED.</p> <p>PHASE 6:</p> <p>MODIFY PHASE 5 TEMPORARY STRIPING TO PHASE 6 SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS.</p> <p>NOW USING ALL OF THE PREVIOUSLY CONSTRUCTED THE PROPOSED BRIDGE, MAINTAIN TWO THROUGH LANES IN EACH DIRECTION.</p> <p>RAMP TRAFFIC WILL CONSIST OF THE FOLLOWING:</p> <p>LEFT-TURN TRAFFIC PROPOSED RAMP B TO EASTBOUND US 42 WILL BE TWO LEFT-TURN LANES.</p> <p>LEFT-TURN TRAFFIC FROM EASTBOUND US 42 TO PROPOSED RAMP H WILL BE REDUCED TO ONE LEFT-TURN LANE.</p> <p>LEFT-TURN TRAFFIC FROM WESTBOUND US 42 TO PROPOSED RAMP D WILL BE TWO LEFT-TURN LANES.</p> <p>LEFT-TURN TRAFFIC FROM PROPOSED RAMP F TO WESTBOUND US 42 WILL BE TWO LEFT-TURN LANES.</p> <p>COMPLETE CONSTRUCTION OF PROPOSED RAMP A UNDER TRAFFIC UTILIZING PART-WIDTH CONSTRUCTION.</p> <p>WHILE USING THE PREVIOUSLY CONSTRUCTED TEMPORARY PAVEMENT 6A-1 TO MAINTAIN RIGHT TURNS FROM EASTBOUND US 42 ON TO RAMP C.</p> <p>COMPLETE CONSTRUCTION OF PROPOSED RAMP C.</p> <p>COMPLETE CONSTRUCTION OF PROPOSED RAMP E UNDER TRAFFIC UTILIZING PART-WIDTH CONSTRUCTION.</p> <p>COMPLETE CONSTRUCTION OF THE TIE TO PROPOSED RAMP G UNDER TRAFFIC.</p> <p>MAINTAIN RUDY LANE TRAFFIC SOUTH OF US 42 AS ONE LANE EACH WAY ON THE NEWLY COMPLETED SOUTHWEST SIDE OF RUDY LANE WHILE RECONSTRUCTING THE NORTHEAST SIDE OF RUDY LANE.</p> <p>MAINTAIN KY 22 TRAFFIC AS ONE LANE EACH WAY ON THE NEWLY COMPLETED SOUTH SIDE OF KY 22 WHILE RECONSTRUCTING THE NORTH SIDE OF KY 22.</p> <p>CONSTRUCT THE ISLANDS ON US 42, THE KY 22 CONNECTOR, AND ANY REMAINING WORK ON THE PROJECT.</p> <p>PHASE 7:</p> <p>FINAL SURFACING FOR THE PROJECT ALONG WITH PERMANENT STRIPING SHALL BE COMPLETED DURING THIS PHASE.</p> <p>THIS WORK SHALL BE PERFORMED USING MOVABLE LANE CLOSURE OPERATIONS WITH FLAGGERS AND SHALL BE PERFORMED DURING PERIODS OF LOW TRAFFIC FLOW OR AT TIMES APPROVED BY THE ENGINEER. TEMPORARY STRIPING SHALL BE PLACED AS NEEDED DURING THESE OPERATIONS AND AT ANY TIME WORK CEASES.</p>					
Power InRoads v8.11.9.397	E-SHEET NAME: R0170A.PL	USDR Jeason	DATE PLOTTED: January 27, 2025	FILE NAME: C:\PW\WORKDIR\JASDR\DWG\SOI89\A-M01-US42-NOTES.DGN	
MAINTENANCE OF TRAFFIC NOTES					

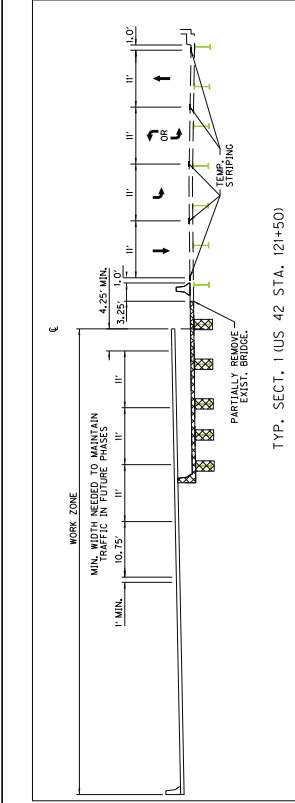
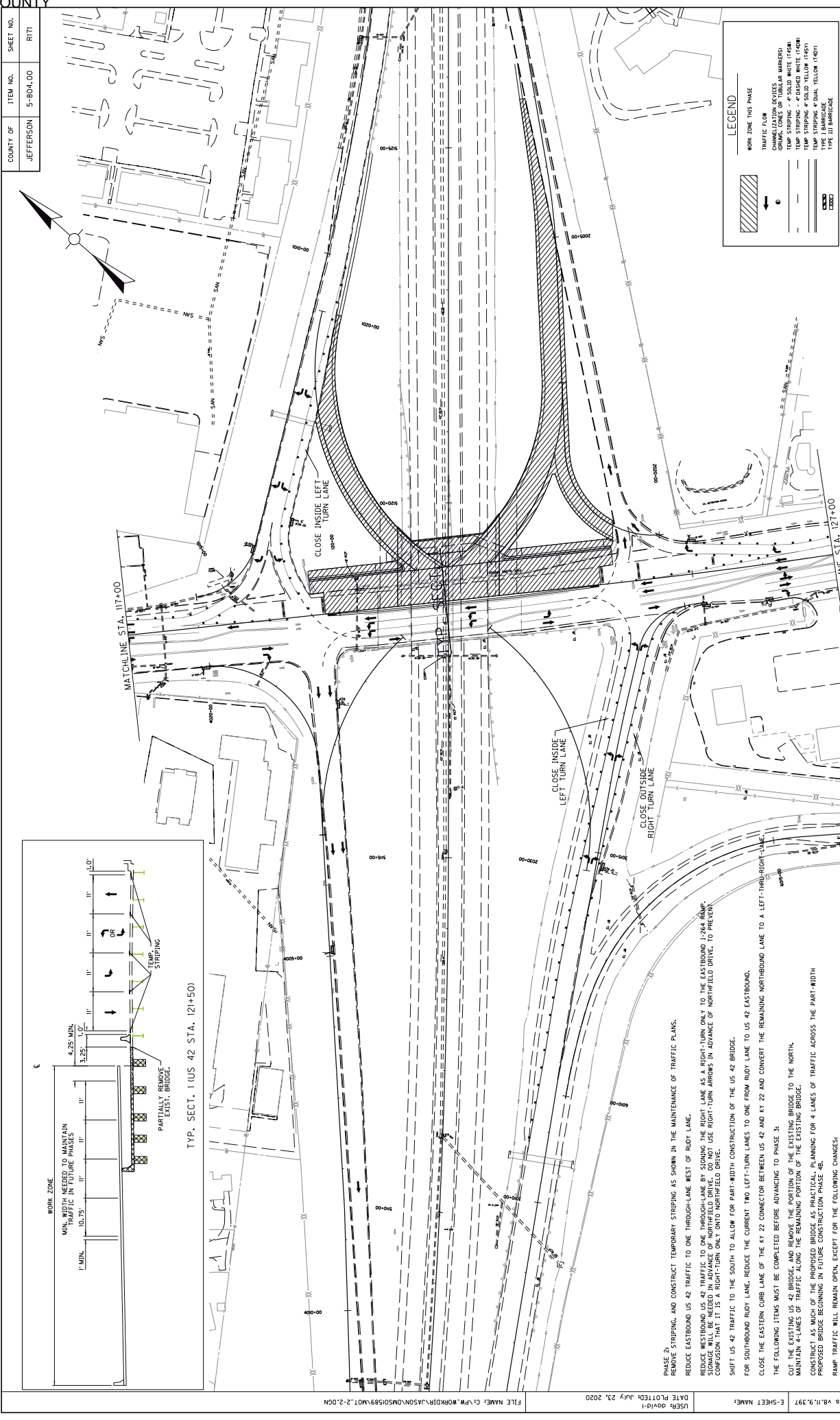
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I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE I
BEGIN TO STA. 117+00





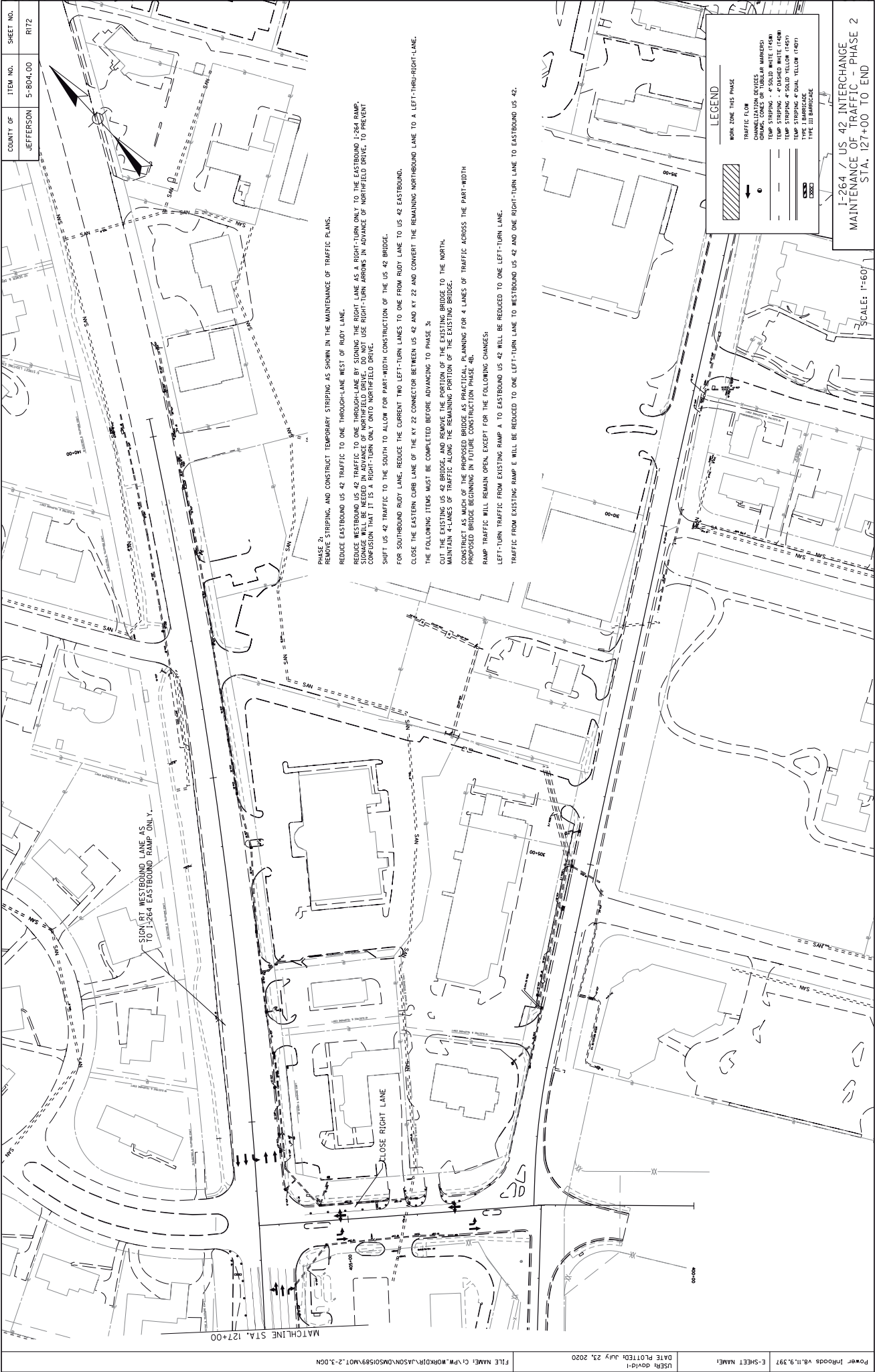


USERS: davis-1 DATE PLOTTED: July 23, 2020 FILE NAME: C:\PW\WORKDIR\JASOM\DWG\50189\AMT-2-2.DGN

Power InRoads v8.11.937 E-SHEET NAME: 1-264 / US 42 INTERCHANGE MAINTENANCE OF TRAFFIC - PHASE 2 STA. 117+00 TO 121+00

SCALE: 1"=60'

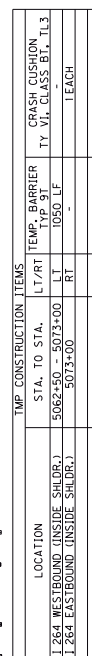
1-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 2
STA. 117+00 TO 121+00



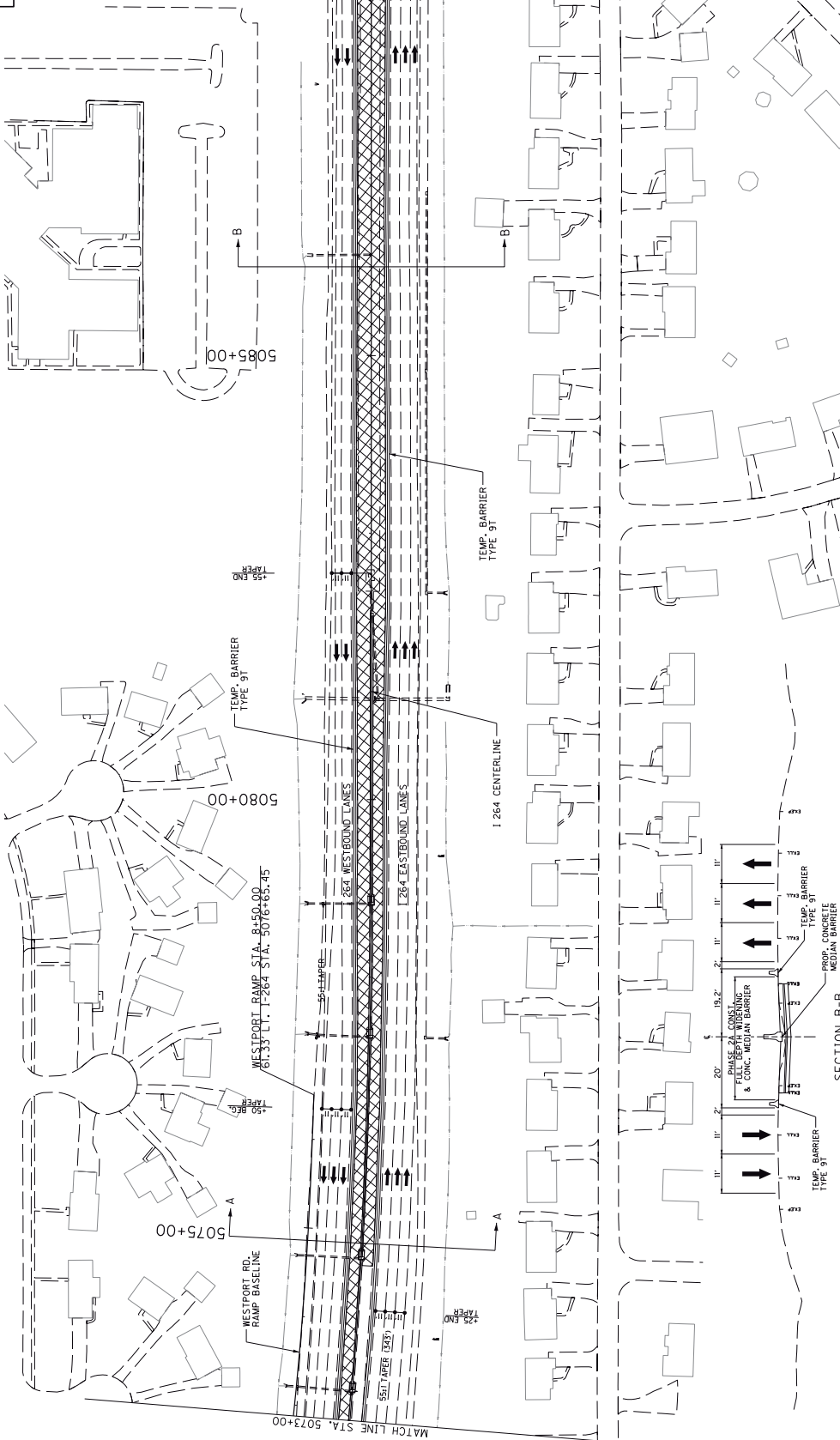
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-R04.00	R172

FILE NAME: C:\PW\WORKDIR\MJ\TCH,THOMAS@aecom.com\DM597239\R1730MT.DGN

Microsoft on 8/11/9, 867	E-SHEET NAME:	USER: chodwick.collins DATE PLOTTED: June 12, 2020
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LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES
(BORDERS, CONES OR TUBULIN MARKERS)

TYPE I BARRICADE

TYPE III BARRICADE

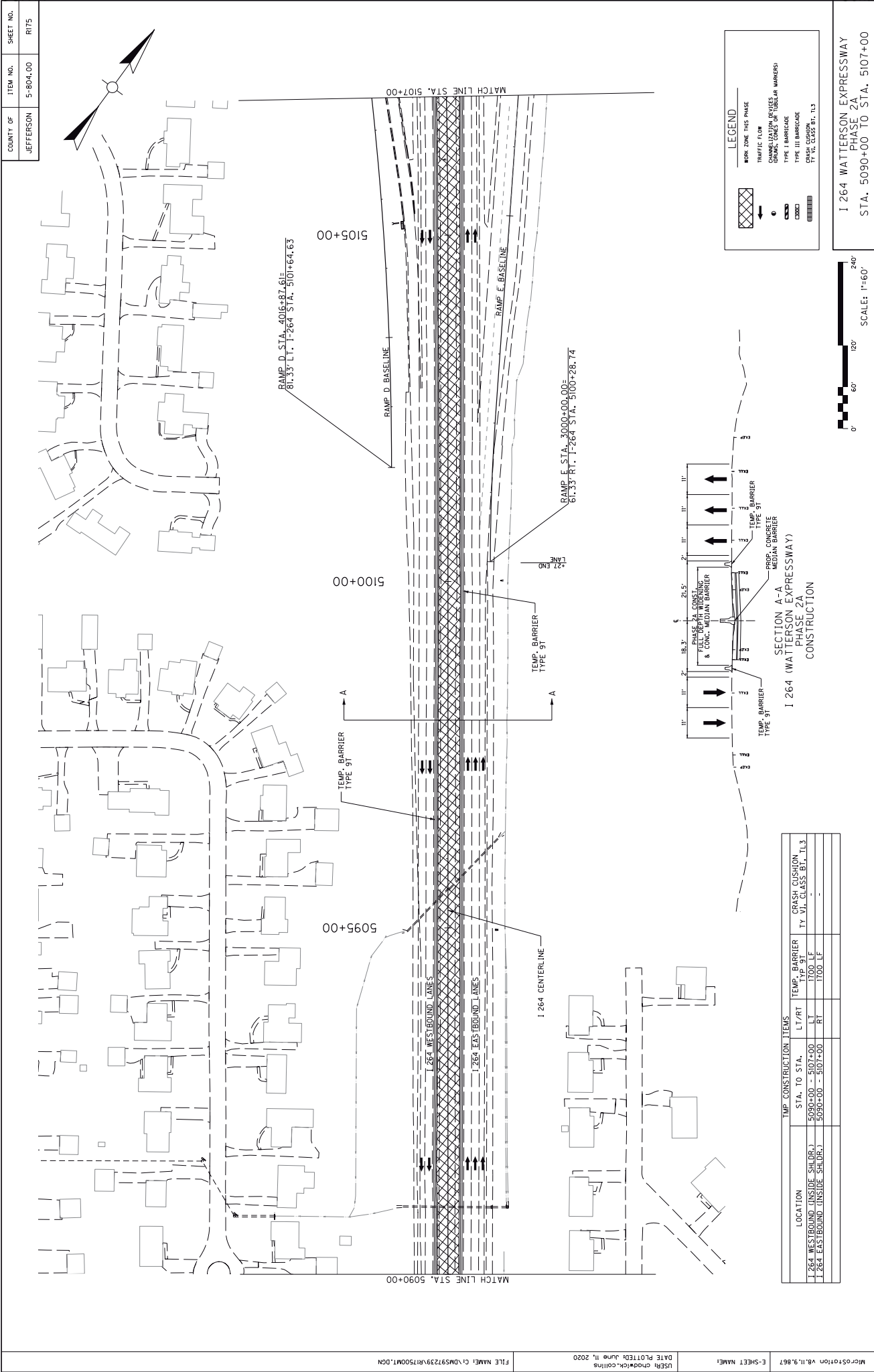
CRASH CUSHION
TY VI, CLASS B1, TL3

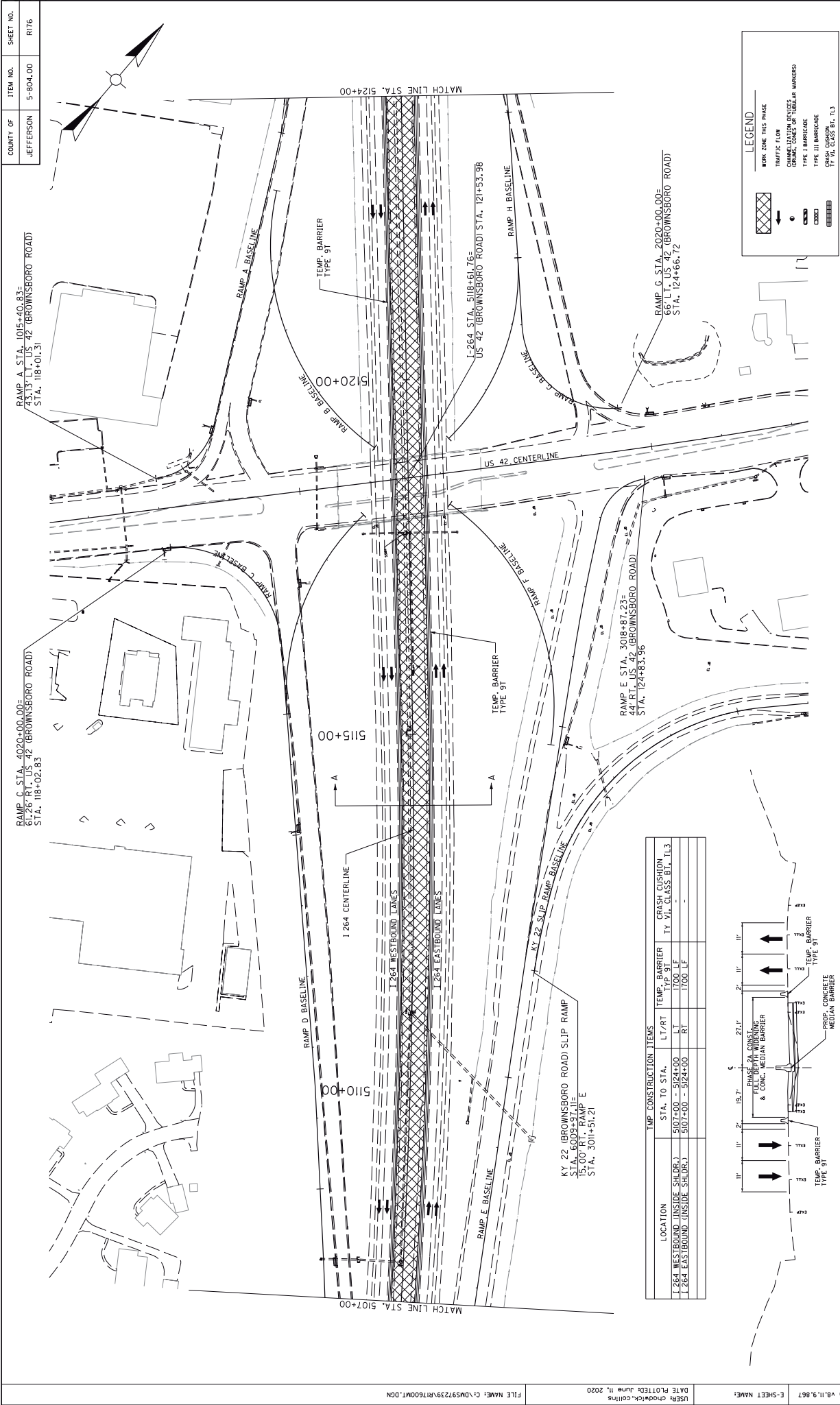
SCALE: 1"=60'

I 264 WATTERSON EXPRESSWAY
PHASE 2A
STA. 5073+00 TO STA. 5090+00

SECTION B-B
I 264 (WATTERTON EXPRESSWAY)
PHASE 2A
CONSTRUCTION

SECTION A-A
I 264 (WATTERSON EXPRESSWAY)
PHASE 2A
CONSTRUCTION





USERS: chadwick, collins	DATE PLOTTED: June 11, 2020	FILE NAME: C:\MS97239\NH2640M1.DGN
E-SHEET NAME:		
MicroStation v8.11.9.867		

SECTION A-A

I 264 (WATERSON EXPRESSWAY)

PHASE 2A CONSTRUCTION

0' 60' 120' 240'

SCALE: 1"=60'

WORK ZONE THIS PHASE

TRAFFIC FLOW

CRASH CUSHION

CONCRETE MEDIAN BARRIER

TEMP. BARRIER TYPE I

TEMP. BARRIER TYPE III

CRASH CUSHION TY VII CLASS B1, T13

COUNTY OF

ITEM NO.

SHEET NO.

JEFFERSON

5-804.00

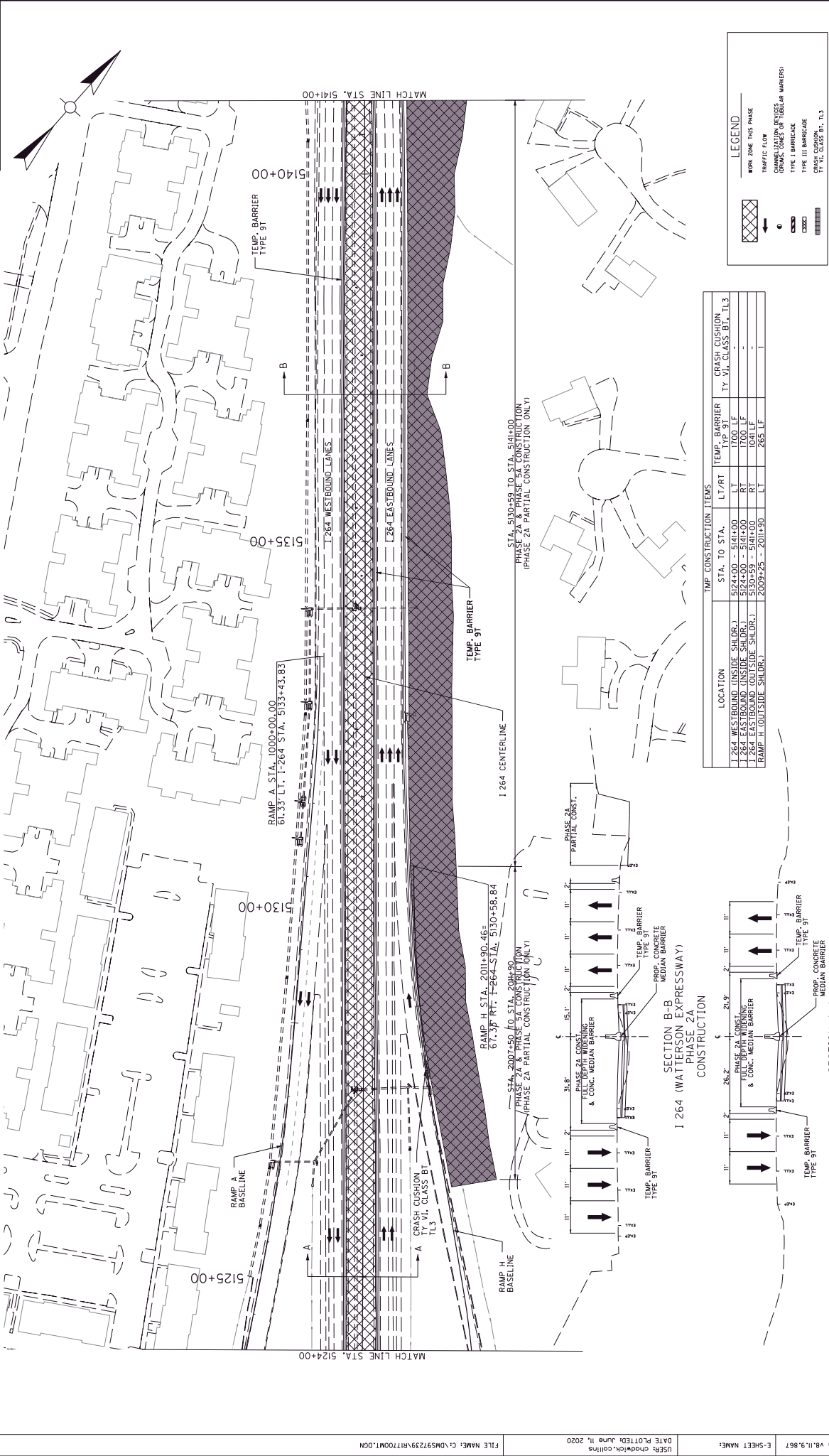
R176

I 264 WATERSON EXPRESSWAY

PHASE 2A

STA. 5107+00 TO STA. 5124+00

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LOCATION	TMP CONSTRUCTION ITEMS			CRASH CUSHION TY VI, CLASS B1, TL3
	STA. TO STA.	LT/RT	TEMP. BARRIER TYPE 9T	
1 264 WESTBOUND (INSIDE SHLR.)	5124+00 - 5141+00	LT	1700 LF	-
1 264 EASTBOUND (INSIDE SHLR.)	5124+00 - 5141+00	RT	1700 LF	-
1 264 EASTBOUND (OUTSIDE SHLR.)	5130+59 - 5141+00	RT	1041 LF	-
1 264 EASTBOUND (OUTSIDE SHLR.)	5139+25 - 2011+90	LT	265 LF	1
RAMP H (OUTSIDE SHLR.)				

LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES
(CUMULUS, CONES OR TUBES)

TYPE I BARRICADE

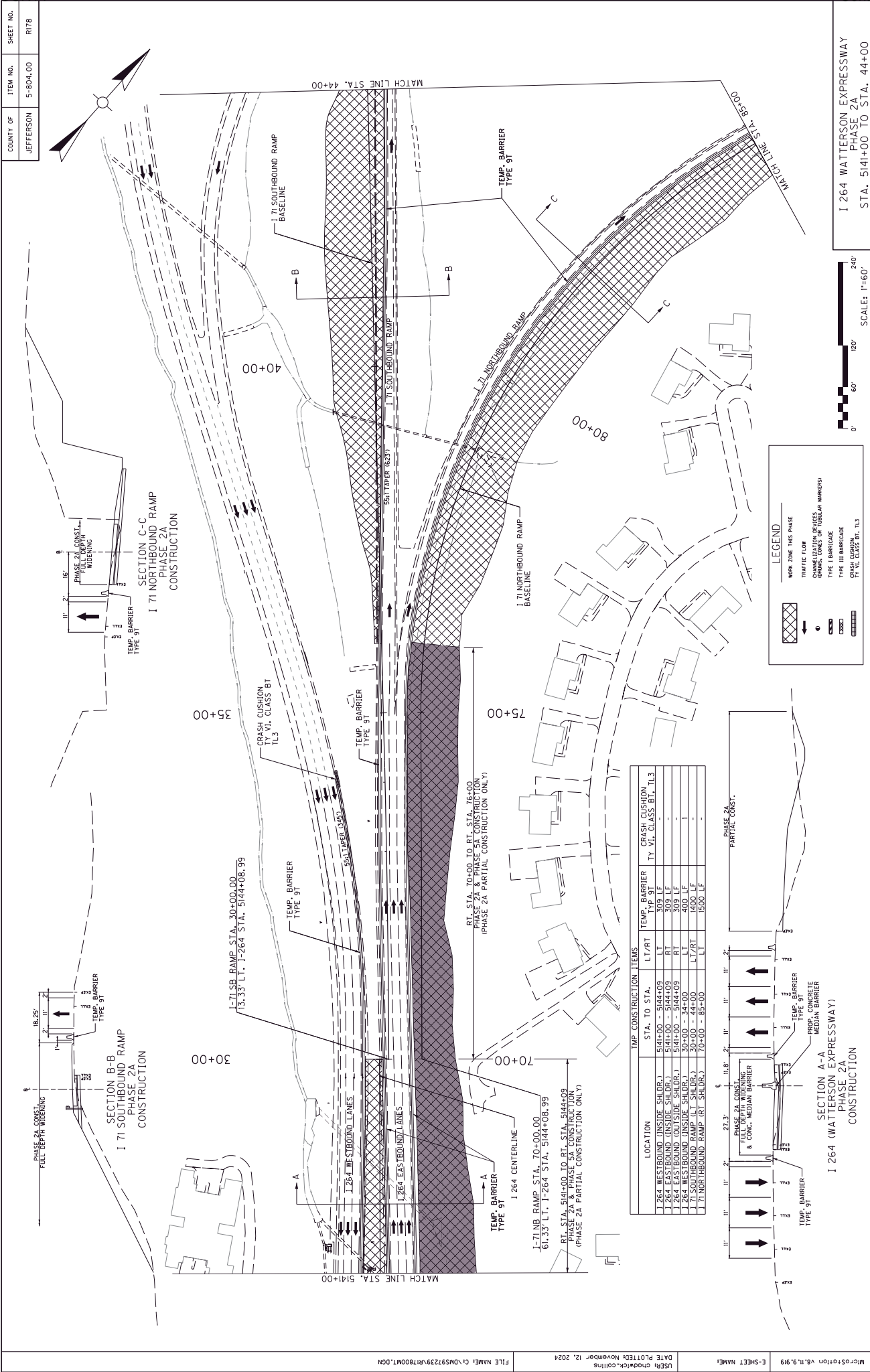
TYPE III BARRICADE

CRASH CUSHION
TY VUL. CLASS. BT, TL3

0' 60' 120' 240'

SCALE: 1"=60'

I 264 WATTERSON EXPRESSWAY
PHASE 2A
STA. 5124+00 TO STA. 5141+00



LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CRASH CUSHION (TYPE VI, CLASS B1, L1.3)

TYPE I BARRICADE

TYPE II BARRICADE

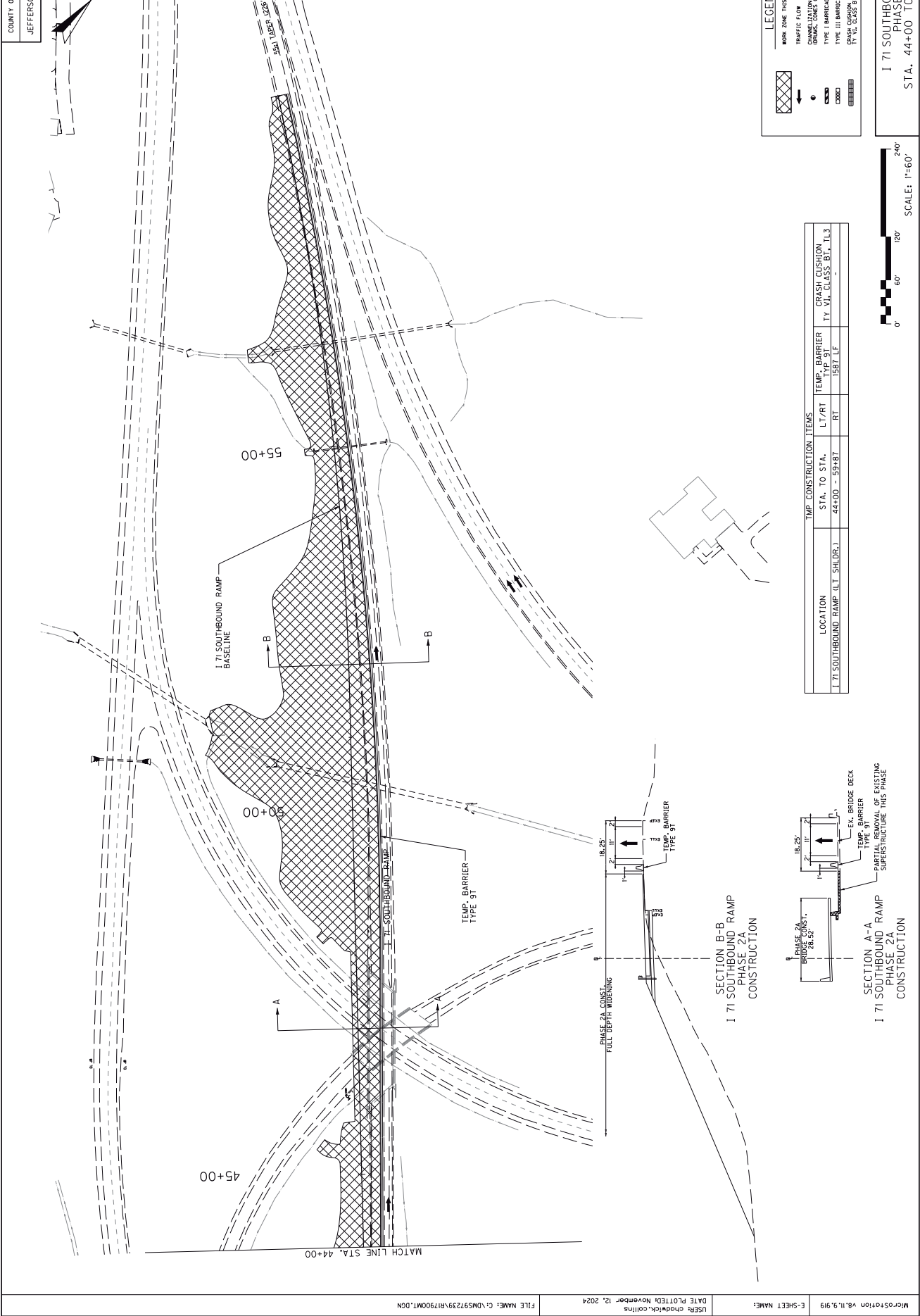
CRASH CUSHION

TYPE VI, CLASS B1, L1.3



I 264 WATTERSON EXPRESSWAY
PHASE 2A
STA. 5141+00 TO STA. 44+00

LOCATION		TMP CONSTRUCTION ITEMS		CRASH CUSHION	
		STA. TO STA.	LY/RT	TYPE	TY VI, CLASS B1, L1.3
I 264 WESTBOUND (INSIDE SHOULDER)		5141+00 - 5144+09	LT	309 LF	-
I 264 EASTBOUND (INSIDE SHOULDER)		5141+00 - 5144+09	RT	309 LF	-
I 264 WESTBOUND (OUTSIDE SHOULDER)		5141+00 - 5144+09	LT	309 LF	-
I 264 EASTBOUND (OUTSIDE SHOULDER)		5141+00 - 5144+09	RT	309 LF	-
I 71 NORTHBOUND RAMP (LT SHOULDER)		30+00 - 44+00	LT/RT	1400 LF	-
I 71 SOUTHBOUND RAMP (RT SHOULDER)		70+00 - 85+00	LT	1500 LF	-



COUNTY OF
JEFFERSON

ITEM NO.
5-8004.00

SHEET NO.
R179

WORK ZONE THIS PHASE

TRAFFIC FLOW

CONSTRUCTION DEVICES

CONES, CONES OF TUBULAR MARKERS

TYPE I BARRICADE

TYPE III BARRICADE

CRASH CUSHION

11 VI CLASS B1, I, J, 3

SECTION A-A
I 71 SOUTHBOUND RAMP
PHASE 2A
CONSTRUCTION

SECTION B-B
I 71 SOUTHBOUND RAMP
PHASE 2A
CONSTRUCTION

LOCATION

I 71 SOUTHBOUND RAMP (LT. SHOULDR.)

STA. TO STA.

44+00 - 59+87

TEMP. BARRIER

TYPE 91

L1/R1

RT

CRASH CUSHION

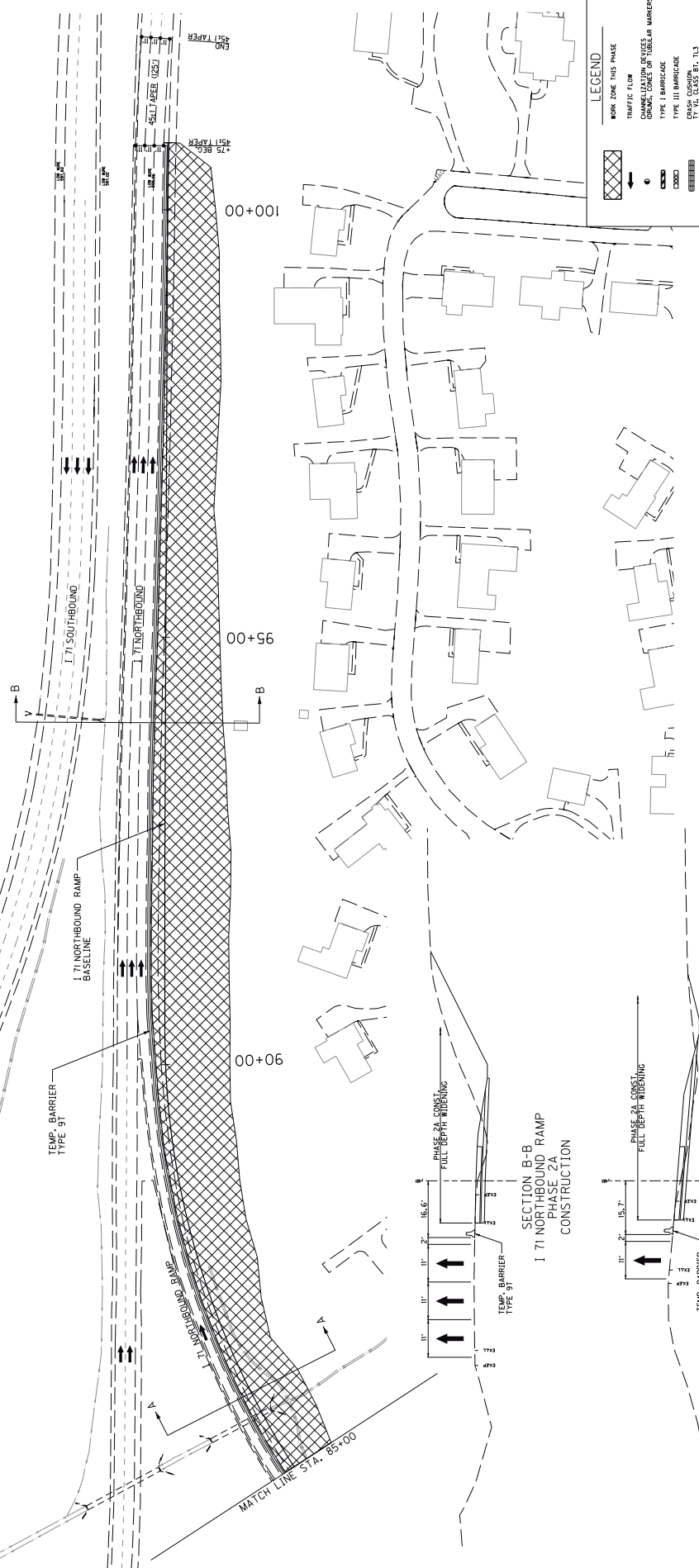
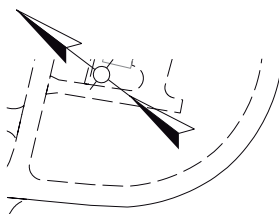
11 VI CLASS B1, I, J, 3

I 71 SOUTHBOUND RAMP







PHASE 2A

STA. 44+00 TO STA. 60+00

TMP CONSTRUCTION ITEMS		CRASH CUSHION
LOCATION	STA. TO STA.	TY VI. CLASS BT. TL3
(I 71 NORTHBOUND RAMP (RT SHLD.R))	85+00 - 100+75	-
	L.T	1575 LF

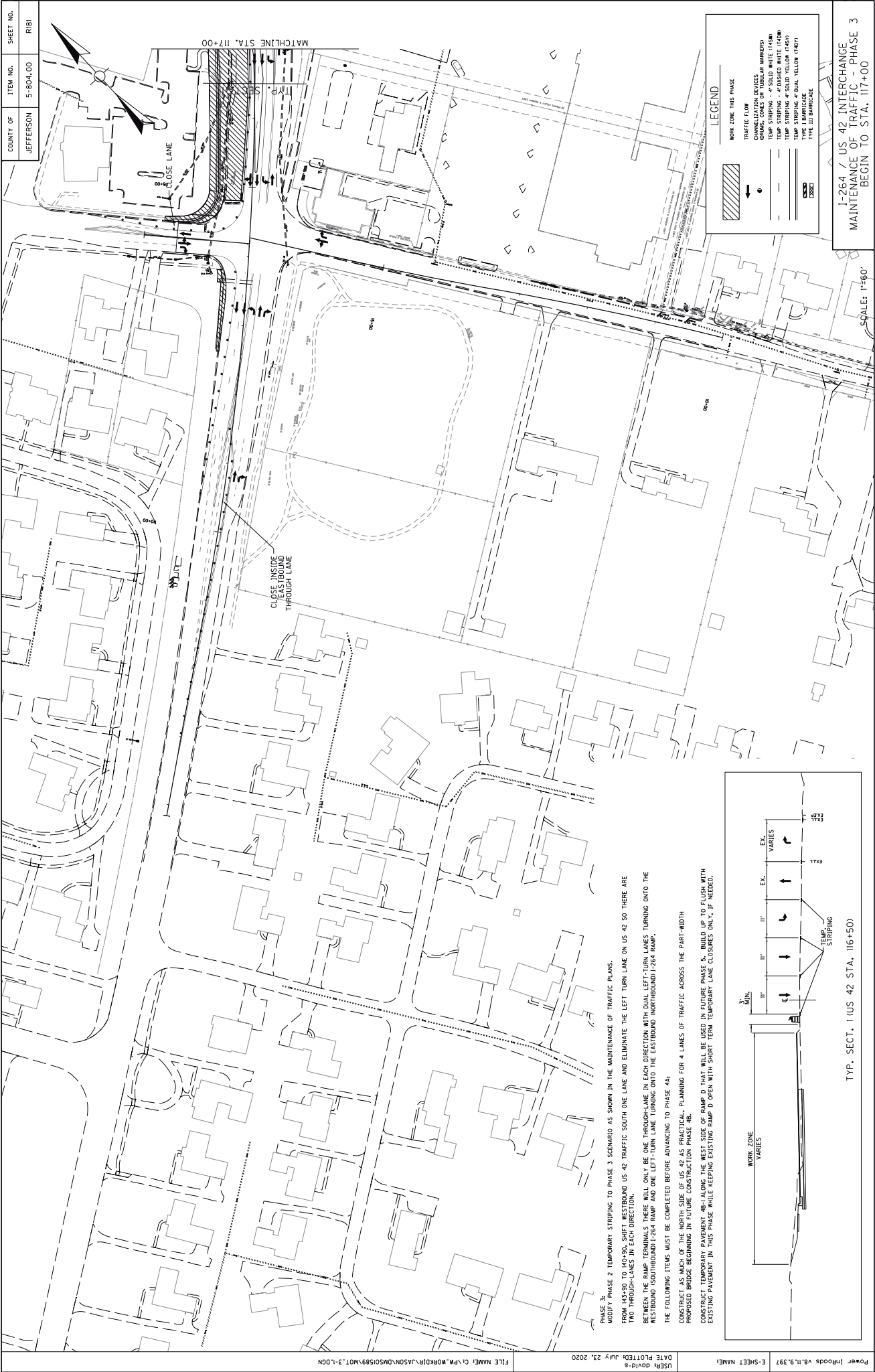


LEGEND

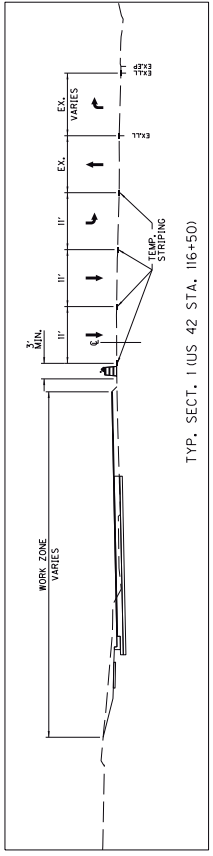
	WORK ZONE THIS PHASE
	TRAFFIC FLOW
	CHANNELIZATION DEVICES (CONE, CONES OR TUBUL IDRUMS)
	TYPE I BARRICADE
	TYPE III BARRICADE
	CRASH CUSHION TY VI, CLASS B1, TL3

SCALE: 1"=60'

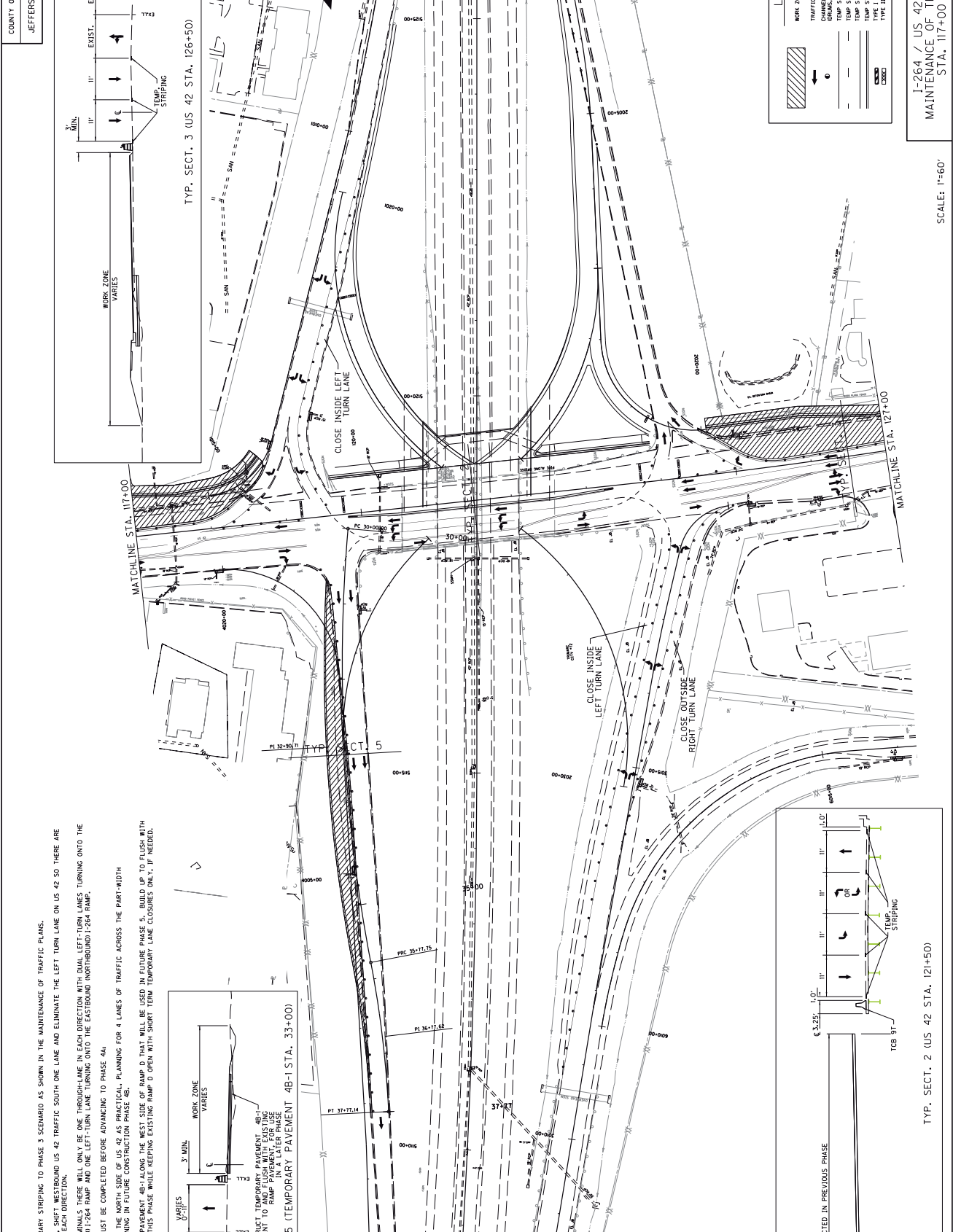
I 71 NORTHBOUND RAMP
PHASE 2A
STA. 85+00 TO STA. 100+78



PHASE 3:
MODIFY PHASE 2 TEMPORARY STRIPING TO PHASE 3 SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS.
FROM 143+90 TO 140+90, SHIFT WESTBOUND US 42 TRAFFIC SOUTH ONE LANE AND ELIMINATE THE LEFT TURN LANE ON US 42 SO THERE ARE TWO THROUGH LANES IN EACH DIRECTION.
BETWEEN THE RAMP TERMINALS THERE WILL ONLY BE ONE THROUGH-LANE IN EACH DIRECTION WITH DUAL LEFT-TURN LANES TURNING ONTO THE WESTBOUND (SOUTHBOUND) I-264 RAMP AND ONE LEFT-TURN LANE TURNING ONTO THE EASTBOUND (NORTHBOUND) I-264 RAMP.
THE FOLLOWING ITEMS MUST BE COMPLETED BEFORE ADVANCING TO PHASE 4A:
CONSTRUCT AS MUCH OF THE NORTH SIDE OF US 42 AS PRACTICAL. PLANNING FOR 4 LANES OF TRAFFIC ACROSS THE PART-WIDTH PROPOSED BRIDGE BEGINNING IN FUTURE CONSTRUCTION PHASE 4B.
CONSTRUCT TEMPORARY PAVEMENT 4B-1 ALONG THE WEST SIDE OF RAMP D THAT WILL BE USED IN FUTURE PHASE 5. BUILD UP TO FLUSH WITH EXISTING PAVEMENT IN THIS PHASE WHILE KEEPING EXISTING RAMP D OPEN WITH SHORT TERM TEMPORARY LANE CLOSURES ONLY, IF NEEDED.



TYP. SECT. 1 (US 42 STA. 116+50)



USERS: davis
DATE PLOTTED: July 23, 2020
FILE NAME: C:\PW\WORKDIR\JASON\DM501589\A07.3-2.DGN

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R182

PHASE 3:
MODIFY PHASE 2 TEMPORARY STRIPING TO PHASE 3 SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS.
FROM 43+90 TO 40+90, SHIFT WESTBOUND US 42 TRAFFIC SOUTH ONE LANE AND ELIMINATE THE LEFT TURN LANE ON US 42 SO THERE ARE TWO THROUGH LANES IN EACH DIRECTION.
BETWEEN THE RAMP TERMINALS THERE WILL ONLY BE ONE THROUGH-LANE IN EACH DIRECTION WITH DUAL LEFT-TURN LANES TURNING ONTO THE WESTBOUND (SOUTHBOUND) 1-264 RAMP AND ONE LEFT-TURN LANE TURNING ONTO THE EASTBOUND (NORTHBOUND) 1-264 RAMP.
THE FOLLOWING ITEMS MUST BE COMPLETED BEFORE ADVANCING TO PHASE 4a:
CONSTRUCT AS MUCH OF THE NORTH SIDE OF US 42 AS PRACTICAL. PLANNING FOR 4 LANES OF TRAFFIC ACROSS THE PART-WIDTH
CONSTRUCT TEMPORARY PAVEMENT 4B-1 ALONG THE WEST SIDE OF RAMP D THAT WILL BE USED IN FUTURE PHASE 5. BUILD UP TO FLUSH WITH EXISTING PAVEMENT IN THIS PHASE WHILE KEEPING EXISTING RAMP D OPEN WITH SHORT TERM TEMPORARY LANE CLOSURES ONLY, IF NEEDED.

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES
BARRIERS, CONES OR TUBULAR MARKERS

TEMP STRIPING - 4 DASHED WHITE (1651)

TEMP STRIPING - 4 SOLID WHITE (1651)

TEMP STRIPING - 4 DUAL YELLOW (1651)

TEMP STRIPING - 4 DUAL YELLOW (1651)

TYPE III BARRIERS

LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES
BARRIERS, CONES OR TUBULAR MARKERS

TEMP STRIPING - 4 DASHED WHITE (1651)

TEMP STRIPING - 4 SOLID WHITE (1651)

TEMP STRIPING - 4 DUAL YELLOW (1651)

TEMP STRIPING - 4 DUAL YELLOW (1651)

TYPE III BARRIERS

SCALE: 1"=60'

1-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
STA. 117+00 TO 127+00

CONSTRUCTED IN PREVIOUS PHASE

1-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
STA. 117+00 TO 127+00

CONSTRUCTED IN PREVIOUS PHASE

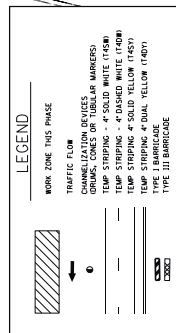
1-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
STA. 117+00 TO 127+00

CONSTRUCTED IN PREVIOUS PHASE

1-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
STA. 117+00 TO 127+00

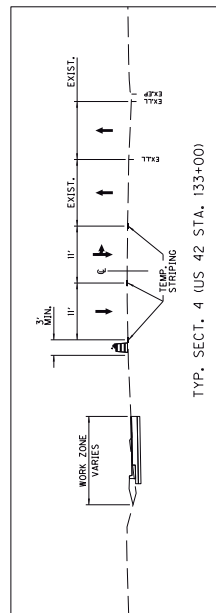
CONSTRUCTED IN PREVIOUS PHASE

1-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
STA. 117+00 TO 127+00

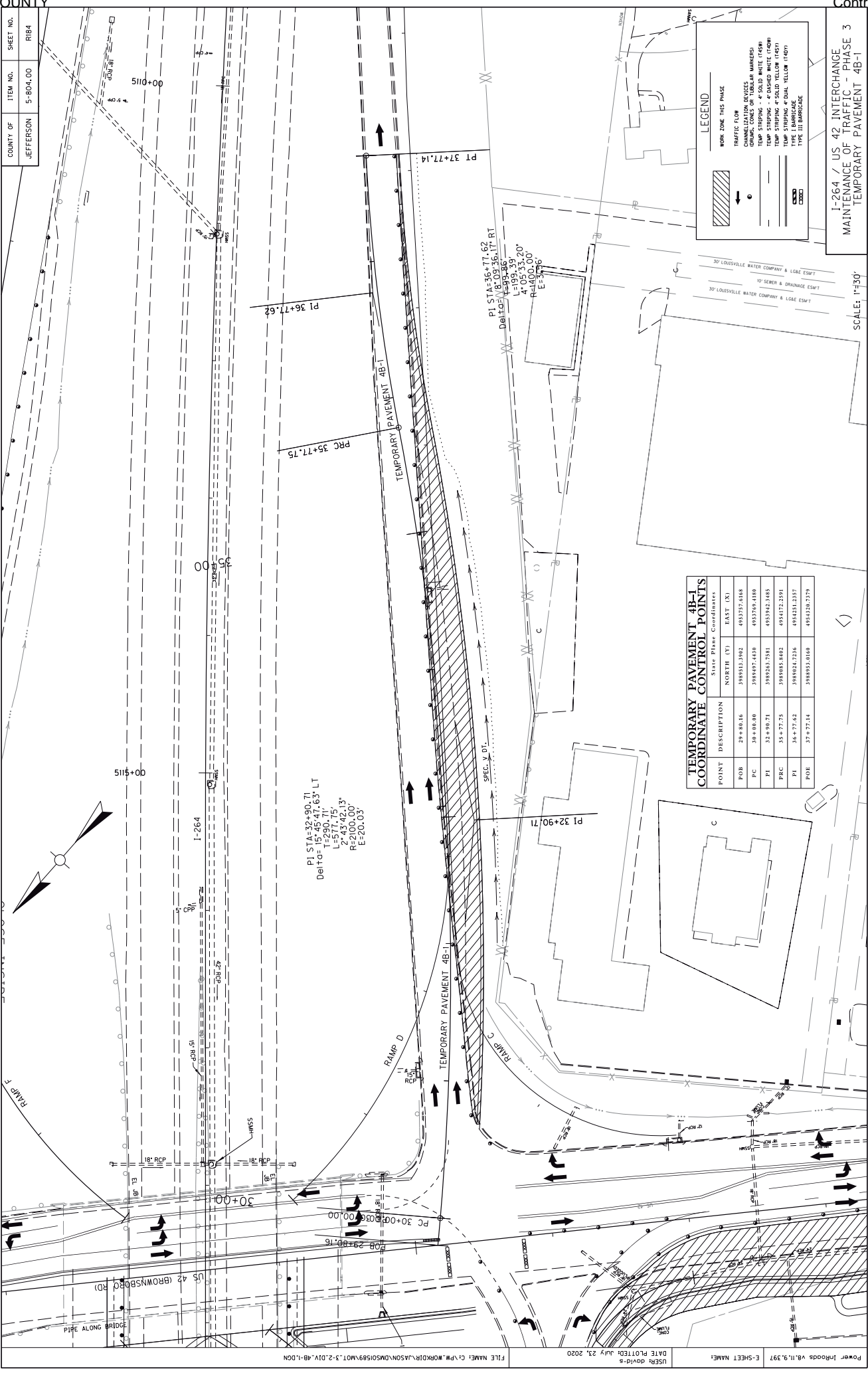


SCALE: 1"=60'

PHASE 3:
MODIFY PHASE 2 TEMPORARY STRIPING TO PHASE 3 SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS.
FROM 433-90 TO 401-90, SHIFT WESTBOUND US 42 TRAFFIC SOUTH ONE LANE AND ELIMINATE THE LEFT TURN LANE ON US 42 SO THERE ARE TWO THROUGH-LANES IN EACH DIRECTION.
BETWEEN THE RAMP TERMINALS THERE WILL ONLY BE ONE THROUGH-LANE IN EACH DIRECTION WITH DUAL LEFT-TURN LANES TURNING ONTO THE WESTBOUND SOUTHBOUND 1564 RAMP AND ONE LEFT-TURN LANE TURNING ONTO THE EASTBOUND NORTHBOUND 1564 RAMP.
THE FOLLOWING ITEMS MUST BE COMPLETED BEFORE ADVANCING TO PHASE 4a:
CONSTRUCT AS MUCH OF THE NORTH SIDE OF US 42 AS PRACTICAL, PLANNING FOR 4 LANES OF TRAFFIC ACROSS THE PART-WIDTH CONSTRUCT TEMPORARY PAVEMENT 48-ALONG THE WEST SIDE OF RAMP 2 THAT WILL BE USED IN FUTURE PHASE 3. BUILD UP TO FLUSH WITH EXISTING PAVEMENT SURFACE.
IMPROVED BIDGE BEGUNNING IN FUTURE CONSTRUCTION PHASE 4b.



TYP. SECT. 4 (US 42 STA. 133+00)



COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R184

TEMPORARY PAVEMENT 4B-1 COORDINATE CONTROL POINTS		
POINT	State Plane Coordinates	
DESCRIPTION	NORTH (Y)	EAST (X)
POB	29+86.16	493237.4168
PC	30+00.00	493256.4180
PI	32+99.71	493192.3485
PRC	35+77.75	493472.2591
PI	36+77.42	493431.2337
POE	37+77.14	493426.2379

LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CONSTRUCTION DEVICES

TEMP STRIPPING - 4" SOLID WHITE (1450)

TEMP STRIPPING - 4" DASHED WHITE (1450)

TEMP STRIPPING - 4" SOLID YELLOW (1450)

TEMP STRIPPING - 4" DASHED YELLOW (1450)

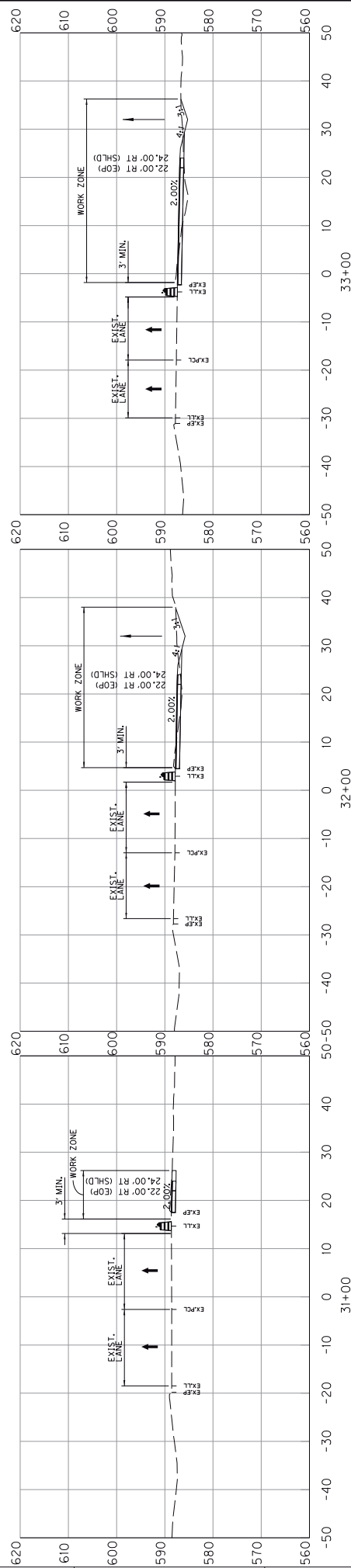
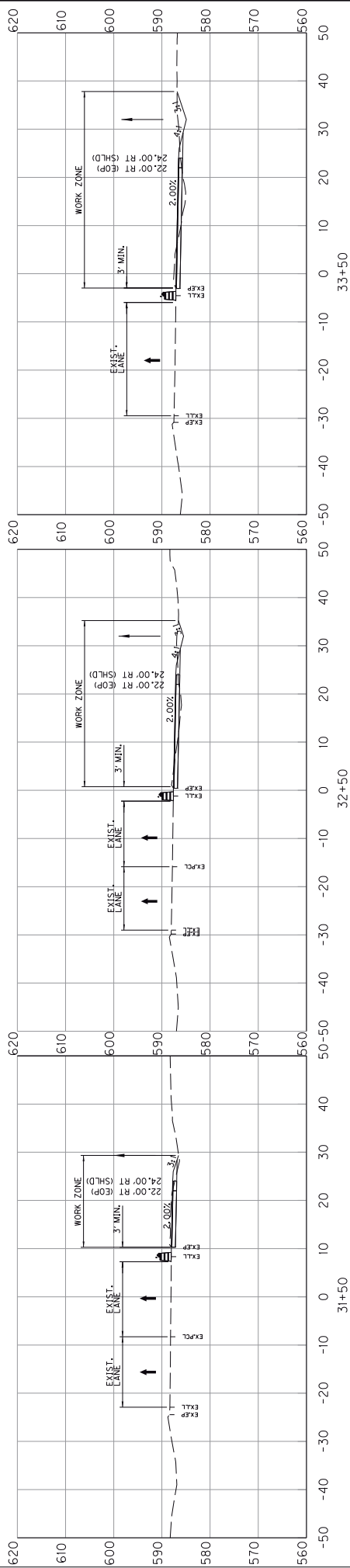
TYPE I BARRICADE

TYPE III BARRICADE

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
TEMPORARY PAVEMENT 4B-1

SCALE: 1"=30'

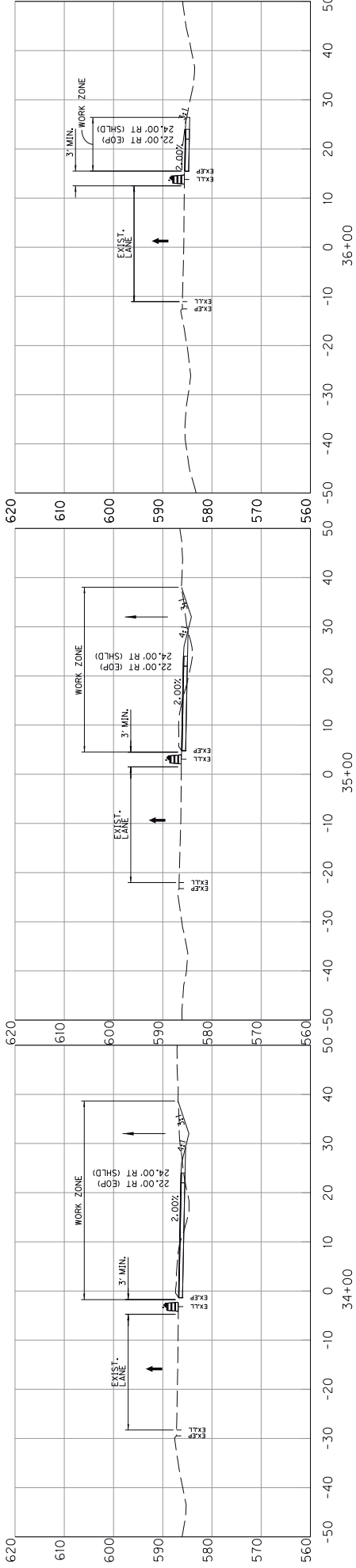
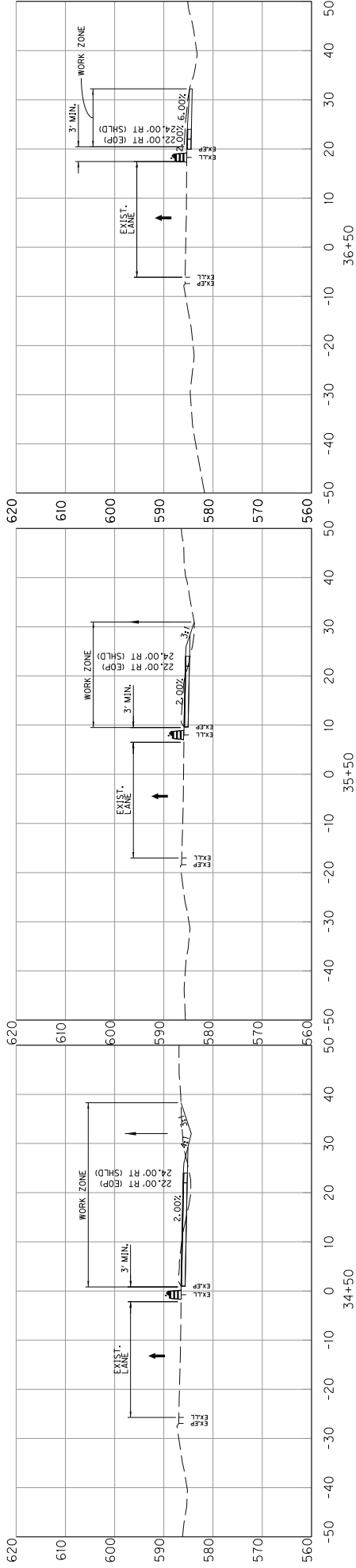
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R185



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
TEMPORARY PAVEMENT 4B-1

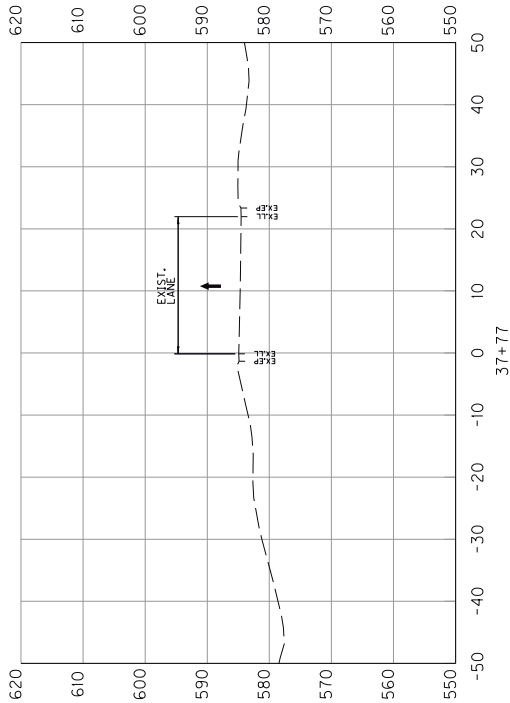
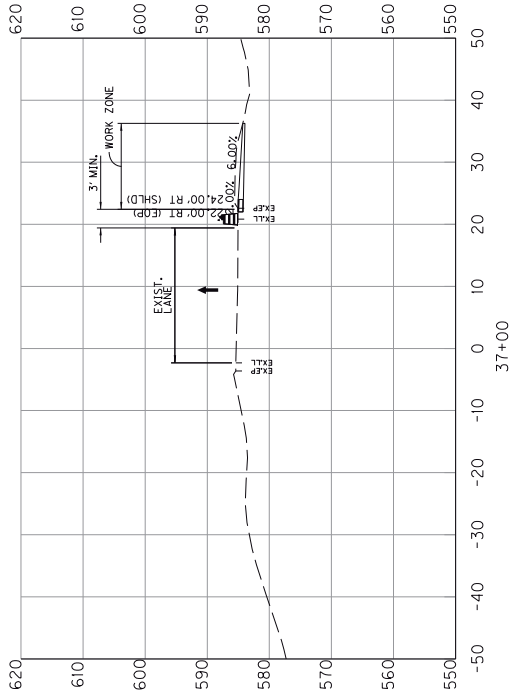
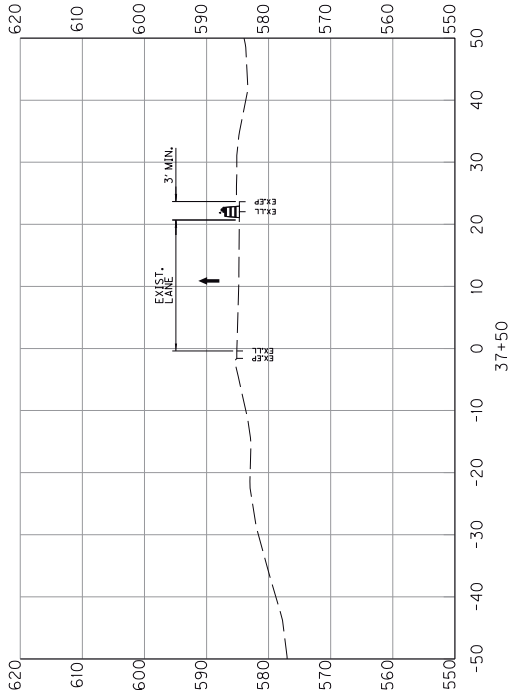
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R186



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
TEMPORARY PAVEMENT 4B-1

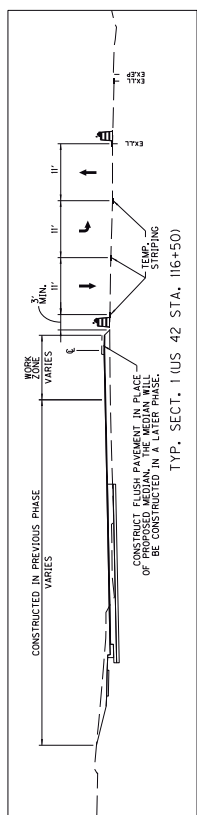
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R187



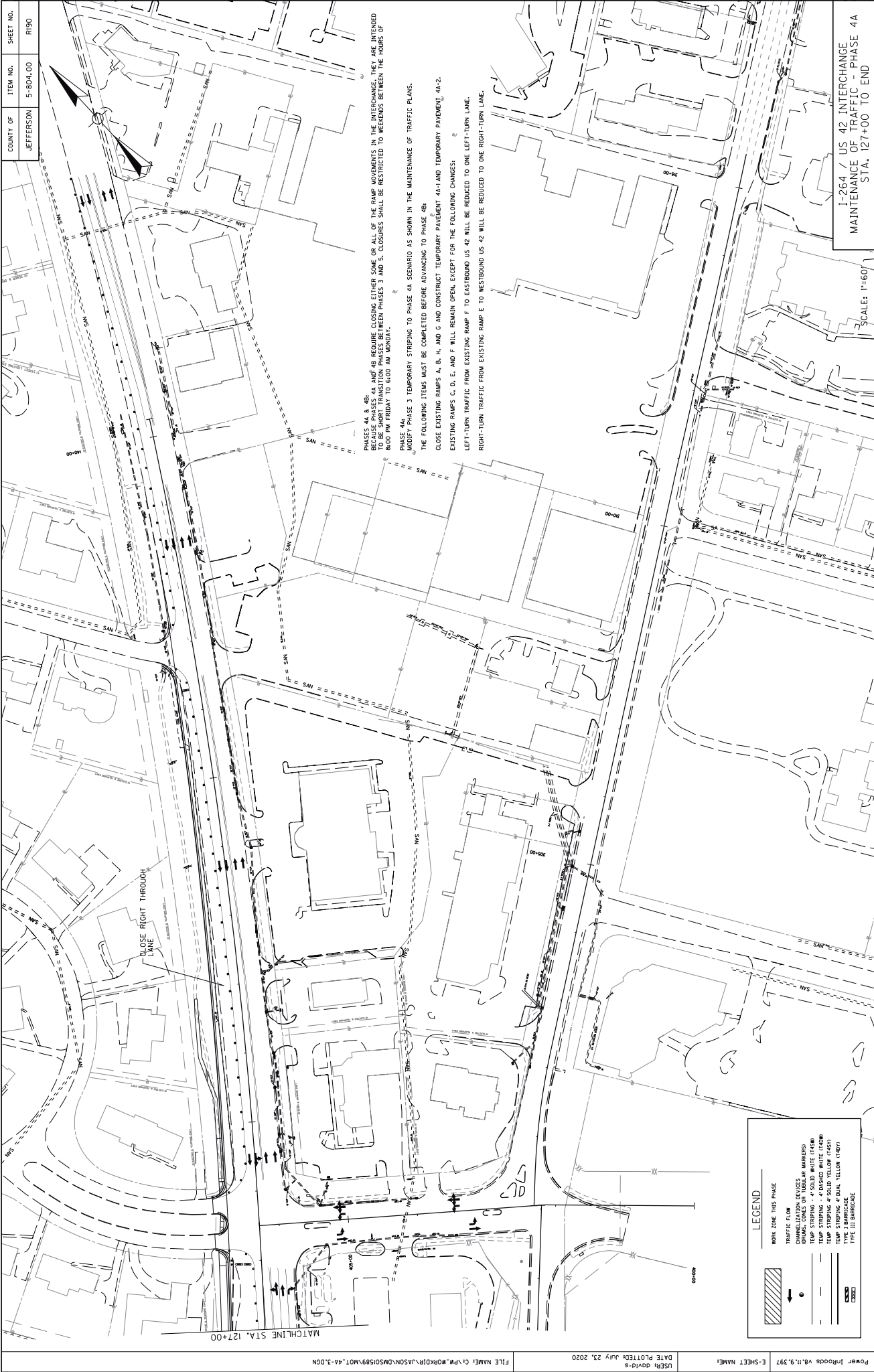
SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 3
TEMPORARY PAVEMENT 4B-1

FILE NAME: C:\PW\WORKDIR\JASON\DM50589\M01_4A-1.DGN



I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4A
BEGIN TO STA. 117+00



COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-R04.00	R190

PHASES 4A, B, & C: PHASE 4A AND 4B REQUIRE CLOSING EITHER SOME OR ALL OF THE RAMP MOVEMENTS IN THE INTERCHANGE. THEY ARE INTENDED TO BE SHORT TRANSITION PHASES BETWEEN PHASES 3 AND 5. CLOSURES SHALL BE RESTRICTED TO WEEKENDS BETWEEN THE HOURS OF 8:00 PM FRIDAY TO 6:00 AM MONDAY.

PHASE 4A: MODIFY PHASE 3 TEMPORARY STRIPING TO PHASE 4A SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS. THE FOLLOWING ITEMS MUST BE COMPLETED BEFORE ADVANCING TO PHASE 4B: CLOSE EXISTING RAMP A, B, H, AND G AND CONSTRUCT TEMPORARY PAVEMENT 4A-1 AND TEMPORARY PAVEMENT 4A-2. EXISTING RAMP C, D, E, AND F WILL REMAIN OPEN, EXCEPT FOR THE FOLLOWING CHANGES: LEFT-TURN TRAFFIC FROM EXISTING RAMP F TO EASTBOUND US 42 WILL BE REDUCED TO ONE LEFT-TURN LANE. RIGHT-TURN TRAFFIC FROM EXISTING RAMP E TO WESTBOUND US 42 WILL BE REDUCED TO ONE RIGHT-TURN LANE.

LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES (CONCRETE OR METAL) (HORIZONTAL)

TEMP STRIPING - 4" DASHED WHITE (150W)

TEMP STRIPING - 4" DASHED WHITE (150W)

TEMP STRIPING - 4" SOLID YELLOW (150W)

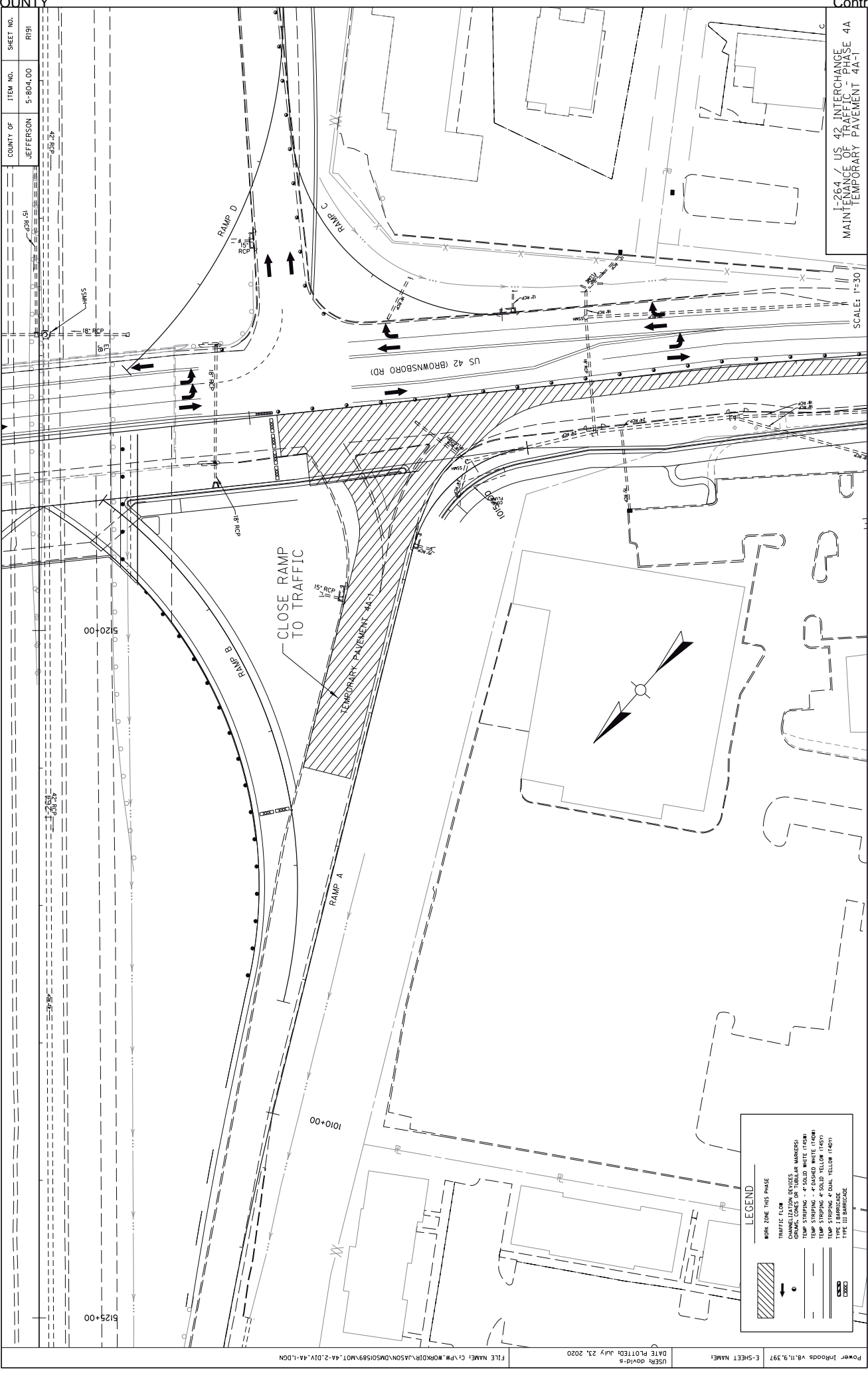
TEMP STRIPING - 4" SOLID YELLOW (150W)

TEMP STRIPING - 4" SOLID YELLOW (150W)

TYPE III BARRICADE

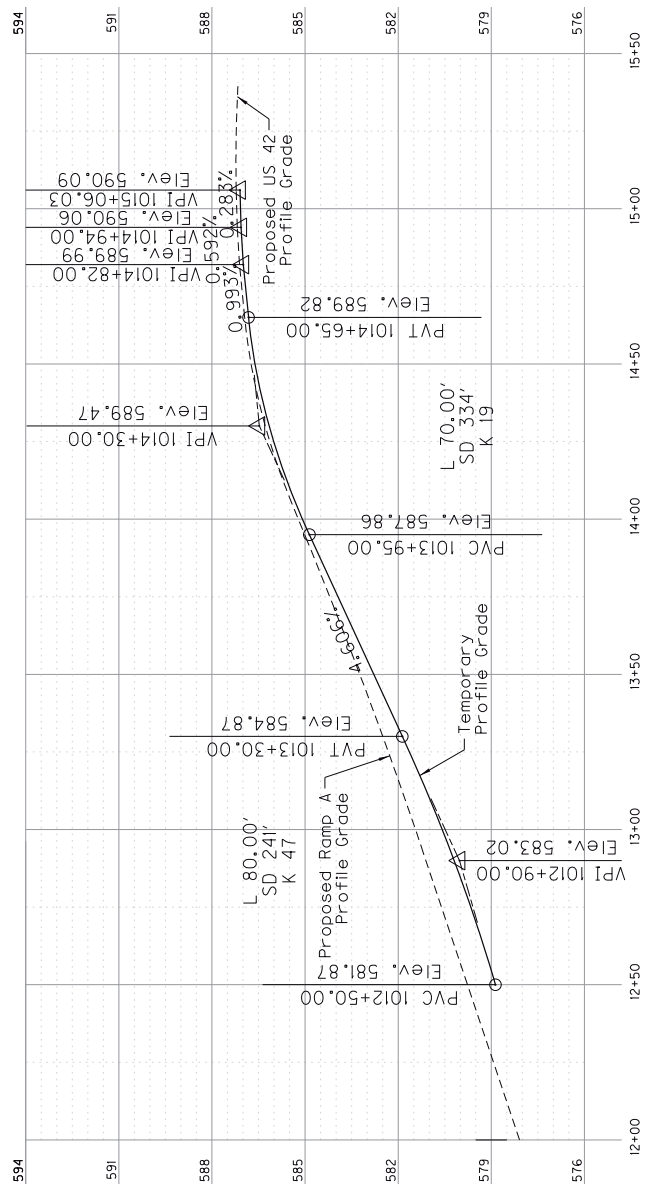
1-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4A
STA. 127+00 TO END

SCALE: 1"=60'



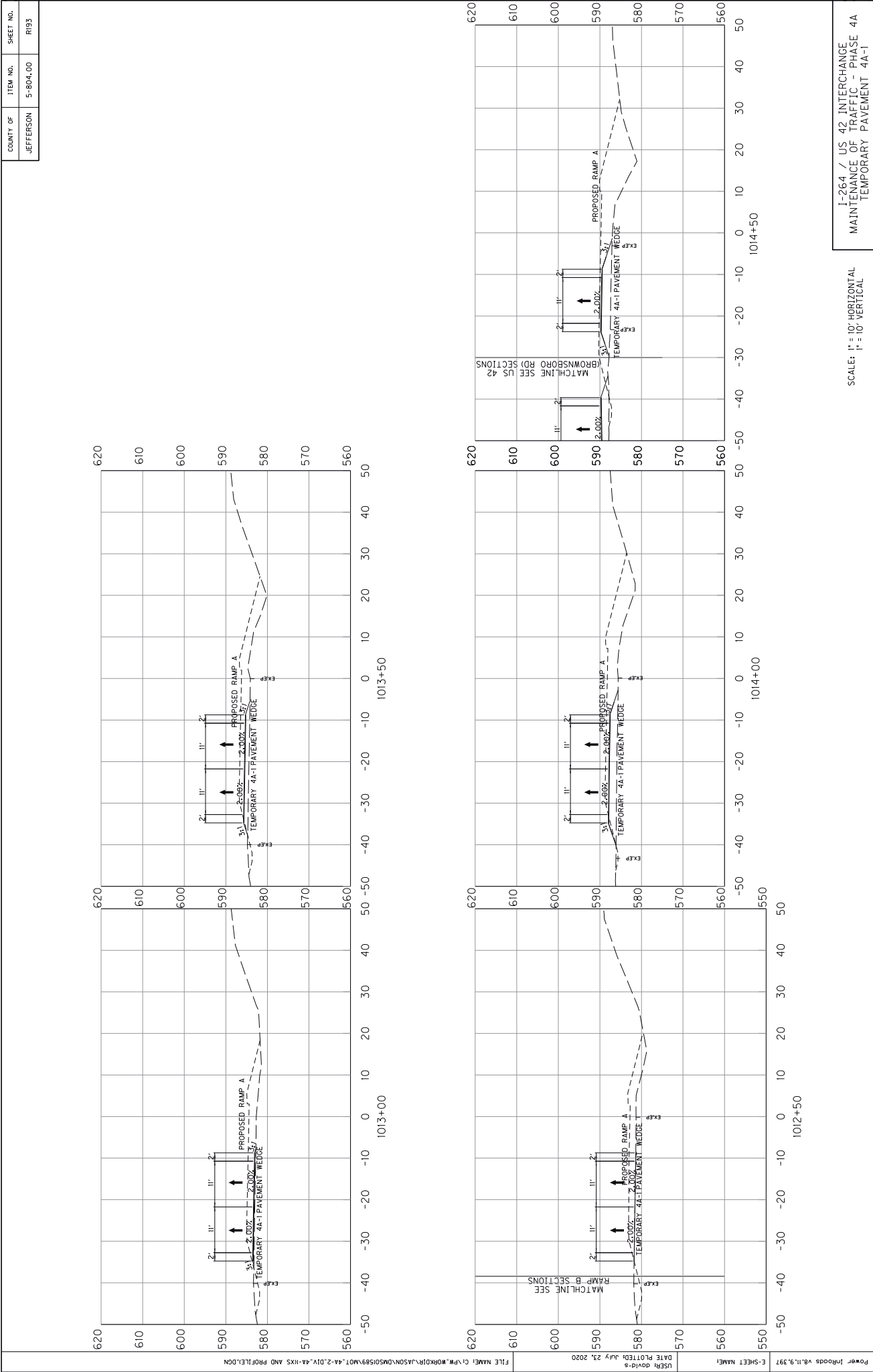
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R31

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R192

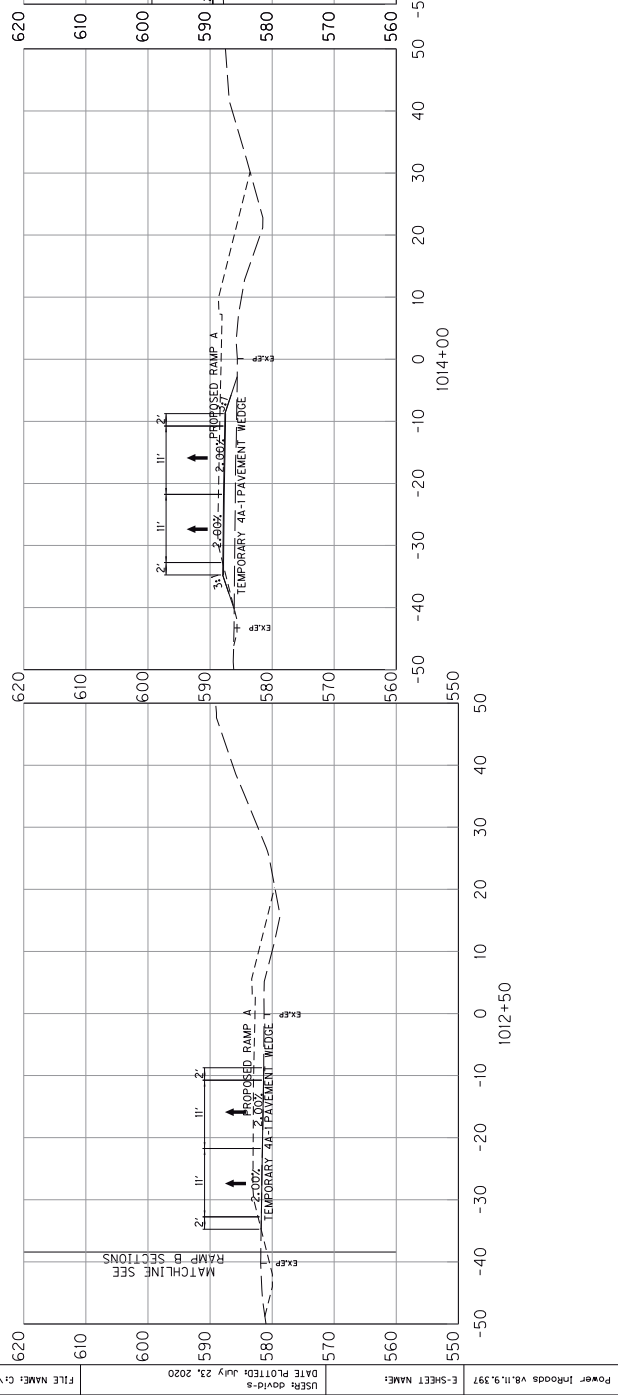
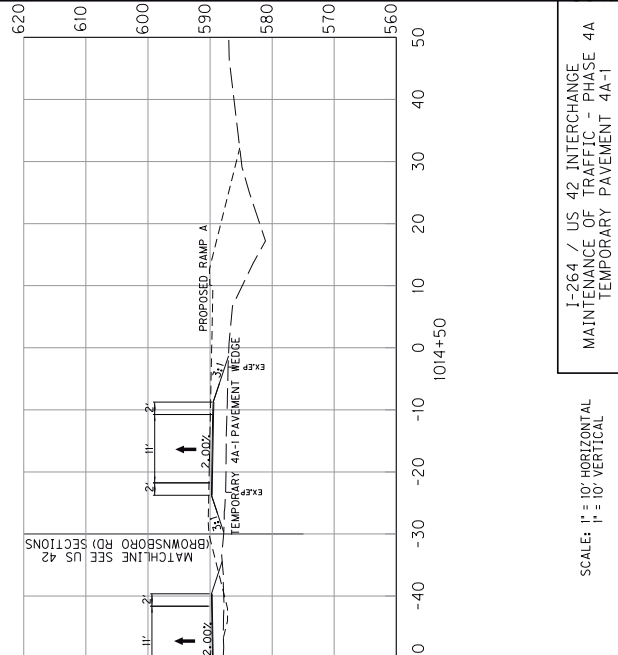


I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4A
TEMPORARY PAVEMENT 4A-1

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R193

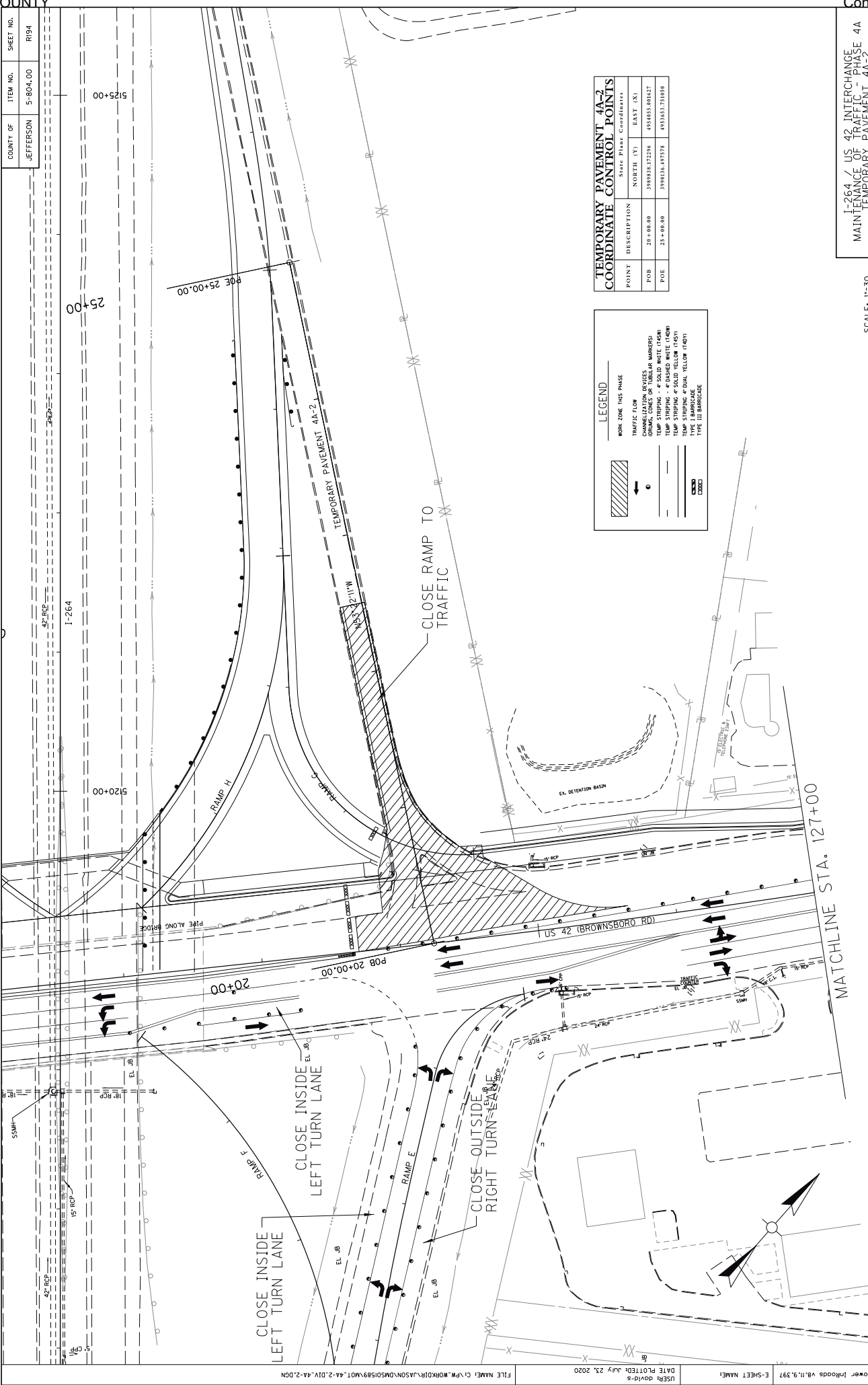


Power InRoads v8.11.9.937 E-SHEET NAME: DATE PLOTTED: July 23, 2020 USR: davis FILE NAME: C:\PW\WORKDIR\JASON\DM50589\MOT-4A-2.DIV-4A-1X5 AND PROFILE.DGN



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4A
TEMPORARY PAVEMENT 4A-1



TEMPORARY PAVEMENT 4A-2 COORDINATE CONTROL POINTS			
State Plane Coordinates			
POINT	DESCRIPTION	NORTH (Y)	EAST (X)
POB	20+00.00	3989834.172246	4934855.804827
POE	25+00.00	3990124.497578	4935453.751819

LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CONES, CONES OR TUBULAR MARKERS

TEMP STRIPING - 4" SOLID WHITE (T4SW)

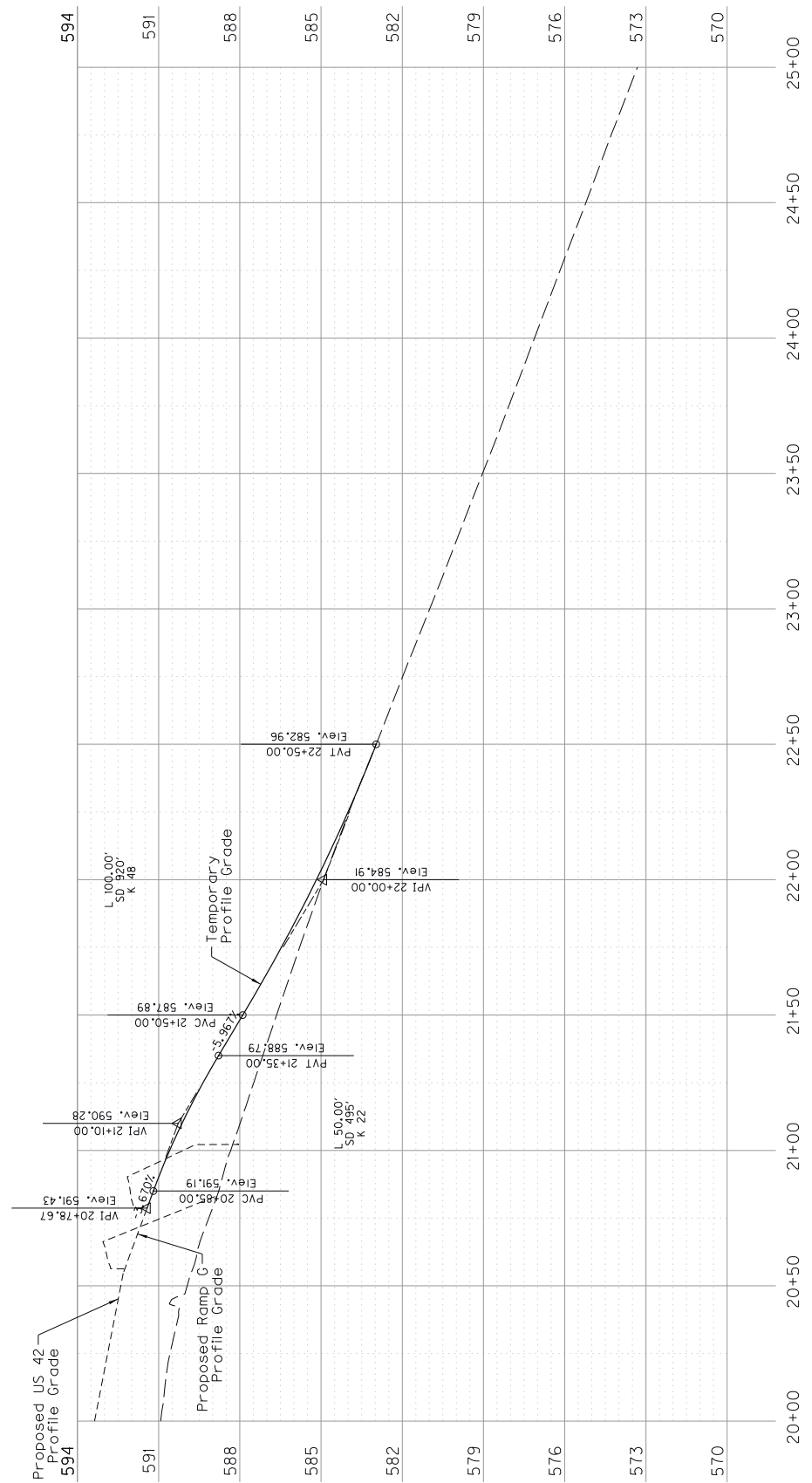
TEMP STRIPING - 4" SOLID WHITE (T4SW)

TEMP STRIPING - 4" DUAL YELLOW (T4DY)

TYPE III BARRICADE

RELEASE TRAIL

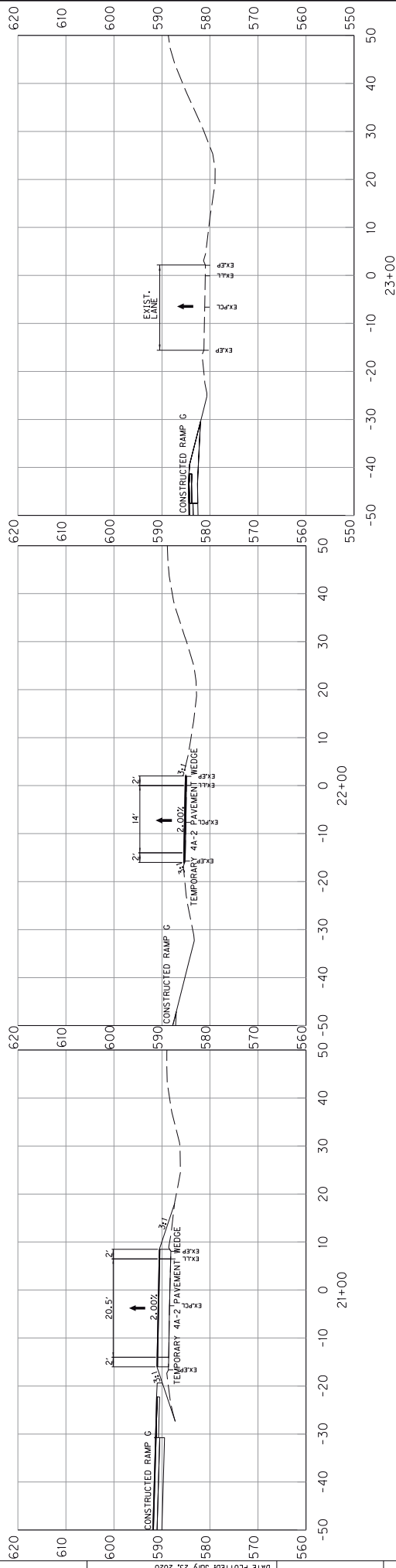
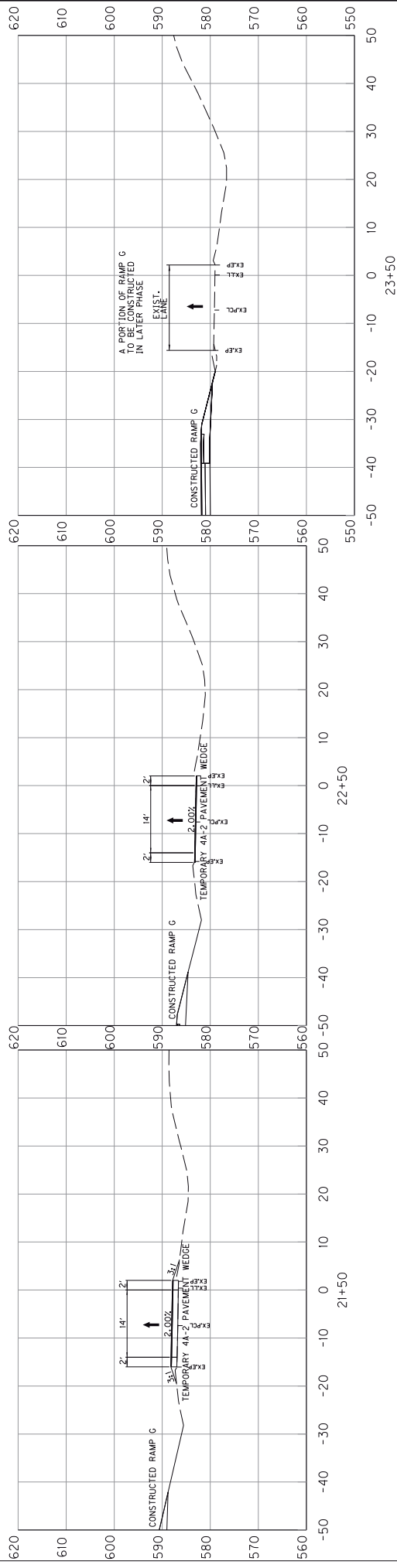
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-8004.00	R195



I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4A
TEMPORARY PAVEMENT 4A-2

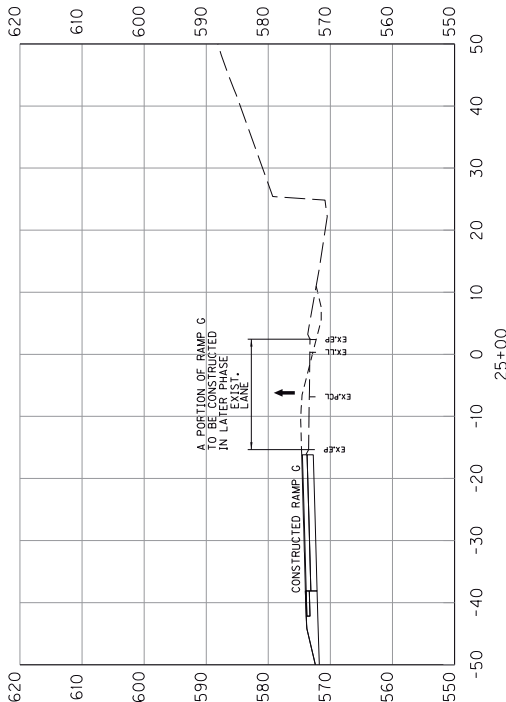
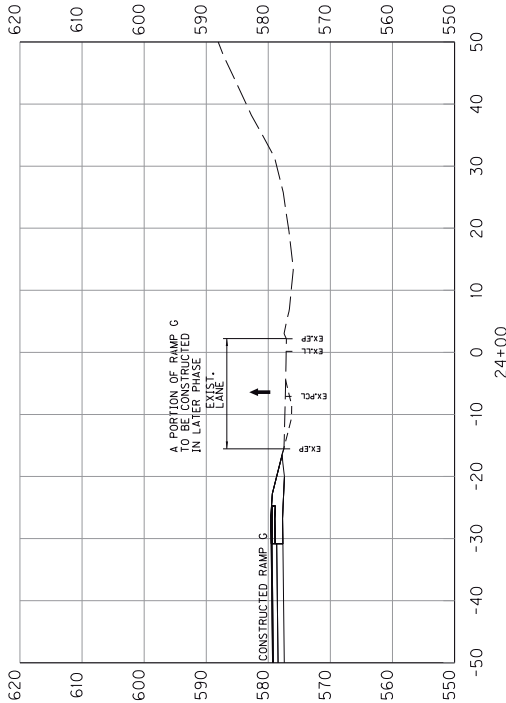
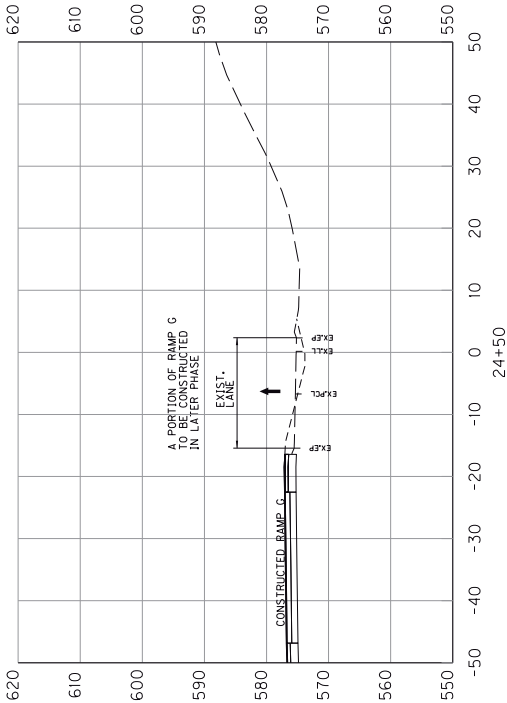
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R196

Power InRoads v8.11.9.197 E-SHEET NAME: DATE PLOTTED: July 23, 2020
FILE NAME: C:\PW\WORKDIR\JASON\DM501589\M07.4A-2.DIV.4A-2XIS AND PROFILE.DGN



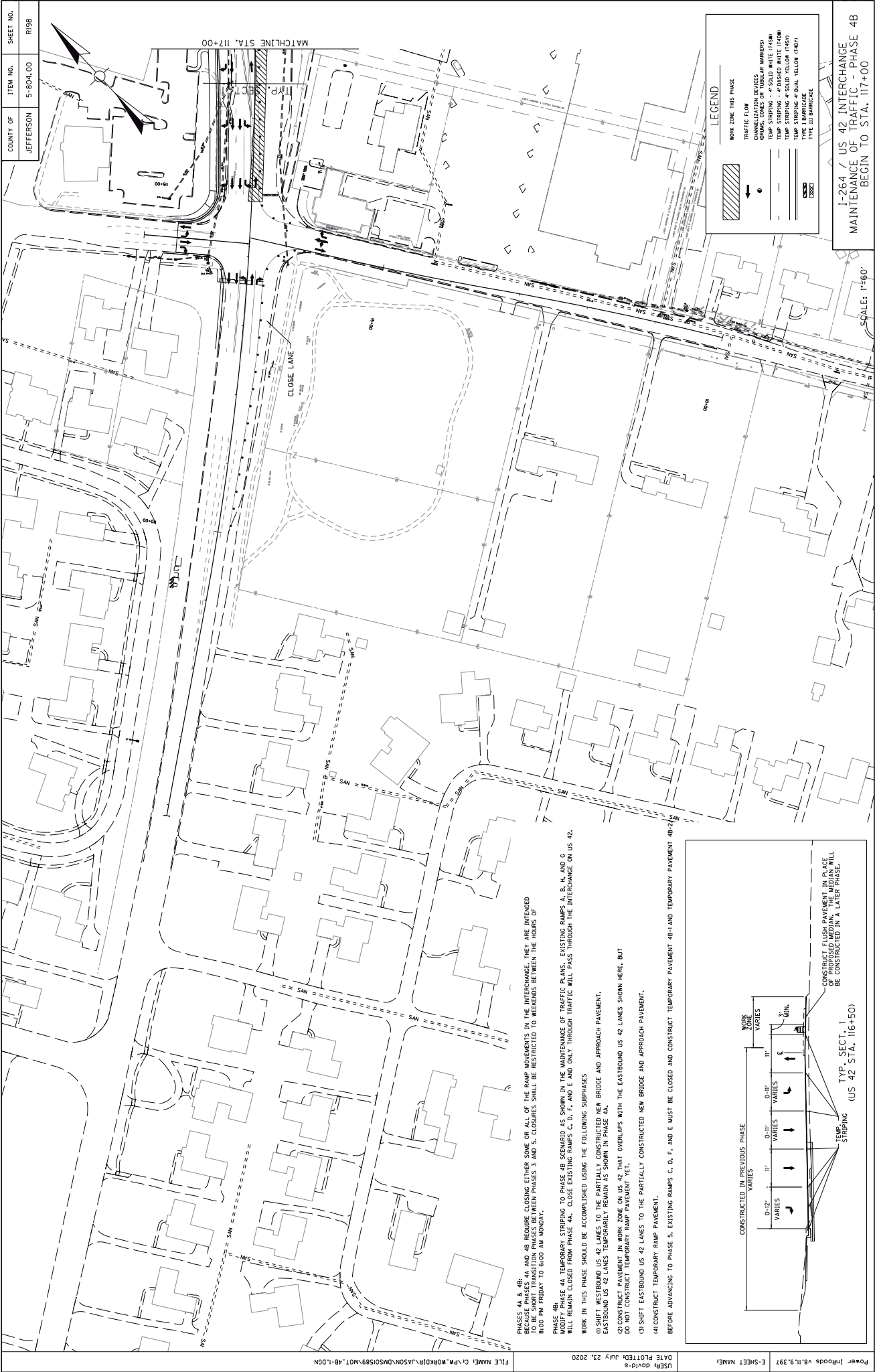
SCALE: H = 10' VERTICAL
I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4A
TEMPORARY PAVEMENT 4A-2

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R197



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4A
TEMPORARY PAVEMENT 4A-2



USERS: davis
DATE PLOTTED: July 23, 2020
FILE NAME: C:\PW\WORKDIR\JASON\DM501589\A07-4B-1.DGN

Power InRoads v8.11.937
E-SHEET NAME:

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-R04.00	R098

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4B
BEGIN TO STA. 117+00

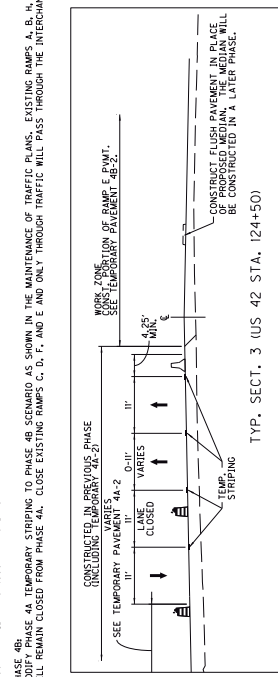
PHASES 4A & 4B:
BECAUSE PHASES 4A AND 4B REQUIRE CLOSING EITHER SOME OR ALL OF THE RAMP MOVEMENTS IN THE INTERCHANGE, THEY ARE INTENDED TO OCCUR BETWEEN PHASES 3 AND 5. CLOSURES SHALL BE RESTRICTED TO WEEKENDS BETWEEN THE HOURS OF 8:00 PM FRIDAY TO 6:00 AM MONDAY.

WORK IN THIS PHASE SHOULD BE ACCOMPLISHED USING THE FOLLOWING SUBPHASES

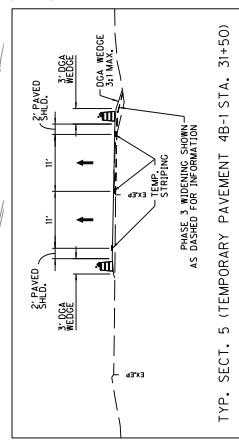
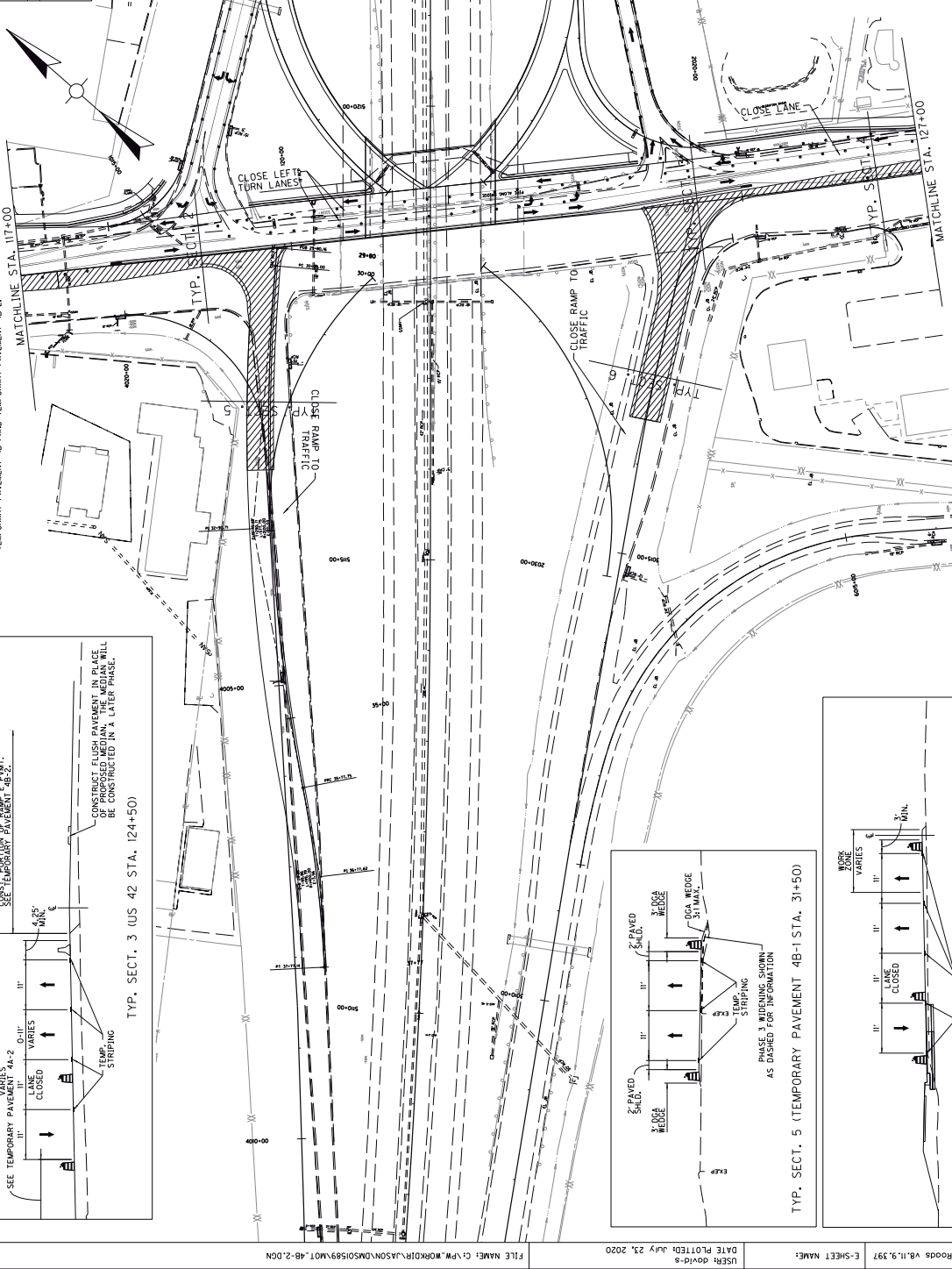
(1) SHEET WESTBOUND US 42 LANES TO THE PARTIALLY CONSTRUCTED NEW BRIDGE AND APPROACH PAVEMENT.
EASTBOUND US 42 LANES TEMPORARILY REMAIN AS SHOWN IN PHASE 4A.

PHASES 4A, B, AND 4B:
BECAUSE PHASES 4A AND 4B REQUIRE CLOSING EITHER SOME OR ALL OF THE RAMP MOVEMENTS IN THE INTERCHANGE, THEY ARE INTENDED TO BE USED ONLY ON FRIDAY MORNING, BETWEEN PHASES 3 AND 5. CLOSURES SHALL BE RESTRICTED TO WEEKENDS BETWEEN THE HOURS OF 8:00 PM FRIDAY TO 6:00 AM MONDAY.

PHASE 4B:
MODIFY PHASE 4A TEMPORARY STRIPING TO PHASE 4B SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS. EXISTING RAMPS A, B, H, AND G WILL REMAIN CLOSED FROM PHASE 4A. CLOSE EXISTING RAMPS C, D, F, AND E ONLY THROUGH TRAFFIC WILL PASS THROUGH THE INTERCHANGE ON US 42.



TYP. SECT. 3 (US 42 STA. 124+50)



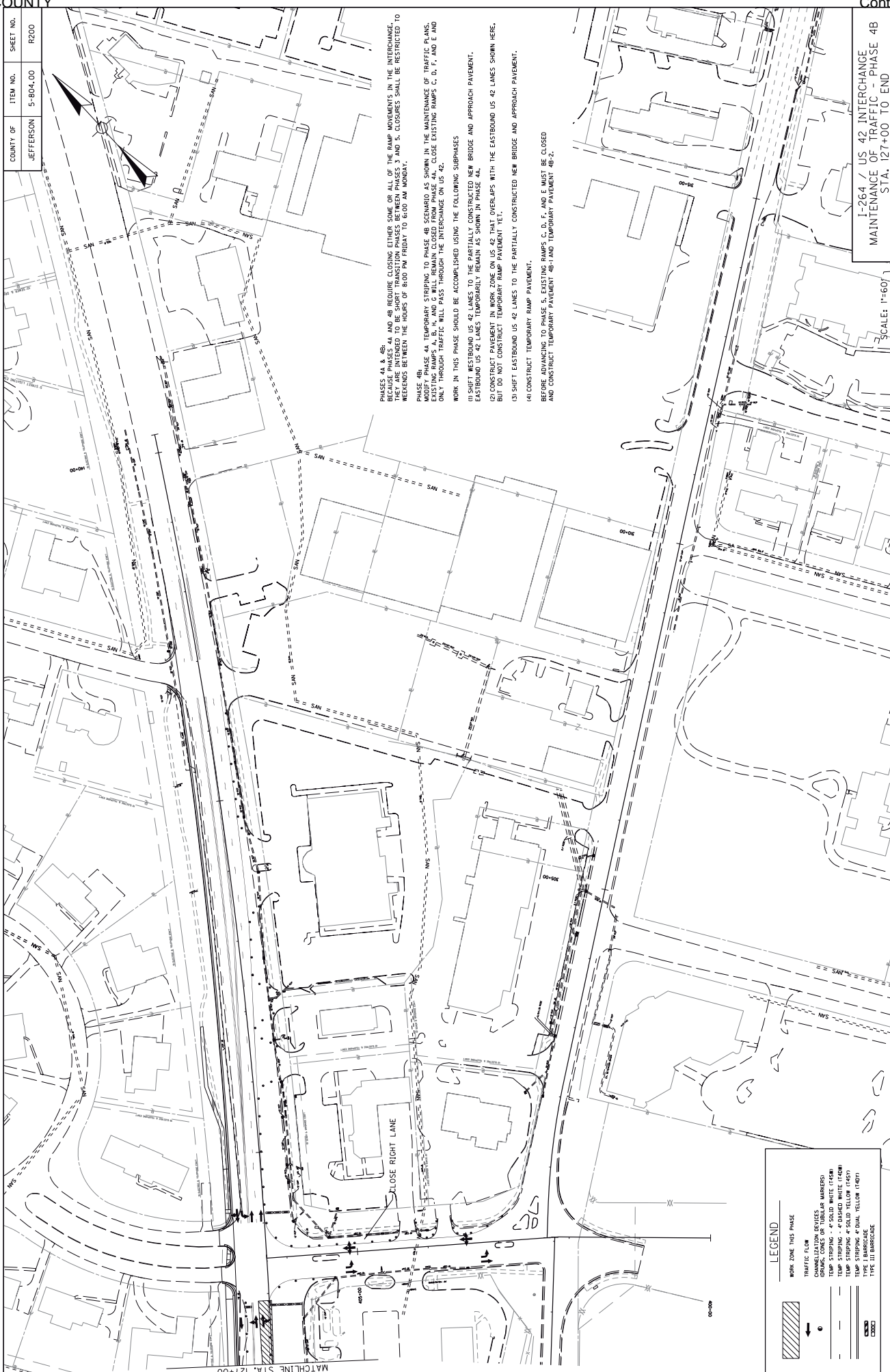
TYP. SECT. 4 (US 42 STA. 126+50)

SCALE: 1"=60'

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4B
STA: 117+00 TO 127+00

SCALE: 1"=60'

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R200



PHASES 4A, 4B, 4C, AND 4D. PHASES 4A, 4B, AND 4C REQUIRE CLOSING EITHER SOME OR ALL OF THE RAMP MOVEMENTS IN THE INTERCHANGE, BECAUSE PHASES 4A, 4B, AND 4C ARE SHORT TRIP TRAFFIC. PHASE 4D IS A THROUGH TRAFFIC PHASE. PHASES 4A, 4B, AND 4C ARE RESTRICTED TO WEEKENDS BETWEEN THE HOURS OF 8:00 PM FRIDAY TO 6:00 AM MONDAY.

PHASE 4B:

MODIFY PHASE 4A TEMPORARY STRIPING TO PHASE 4B SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS. EXISTING TRAMPS C, D, E, AND F WILL REMAIN CLOSED. PHASE 4B WILL CLOSE EXISTING RAMPS C, D, E, AND F. AND THROUGH TRAFFIC WILL PASS THROUGH THE INTERCHANGE ON US 42.

WORK IN THIS PHASE SHOULD BE ACCOMPLISHED USING THE FOLLOWING SUBPHASES

(1) SHUT WESTBOUND US 42 LINES TO THE PARTIALLY CONSTRUCTED NEW BRIDGE AND APPROACH PAVEMENT.

(2) SHUT EASTBOUND US 42 LINES TEMPORARILY ON US 42, THAT OVERLAPS WITH THE EASTBOUND US 42 LANES SHOWN HERE, BUT DO NOT CONSTRUCT TEMPORARY RAMP PAVEMENT YET.

(3) SHUT EASTBOUND US 42 LINES TO THE PARTIALLY CONSTRUCTED NEW BRIDGE AND APPROACH PAVEMENT.

(4) CONSTRUCT TEMPORARY RAMP PAVEMENT.

BEFORE ADVANCING TO PHASE 5, EXISTING RAMPS C, D, E, AND F MUST BE CLOSED AND CONSTRUCT TEMPORARY PAVEMENT 4B-1 AND CONSTRUCT TEMPORARY PAVEMENT 4B-2.

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4B
STA. 127+00 TO END

SCALE: 1"=60'

LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES
BARRIERS, CONES OR TUBULAR MARKERS

TEMP STRIPPING - 4" SOLID WHITE (1458)

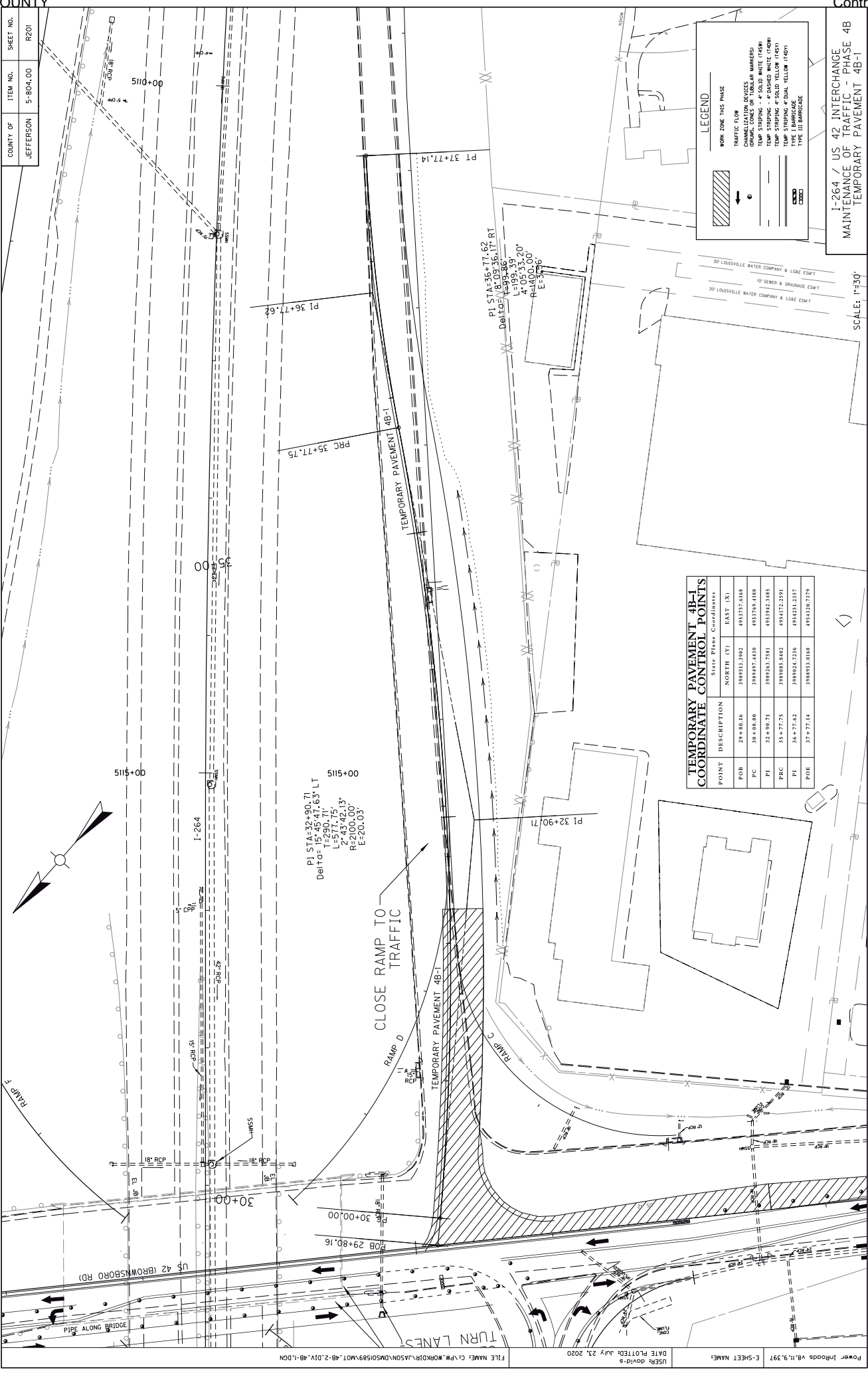
TEMP STRIPPING - 4" DASHED WHITE (1408)

TEMP STRIPPING - 4" SOLID YELLOW (1457)

TEMP STRIPPING - 4" DUAL YELLOW (1407)

TYPE I BARRICADE

TYPE III BARRICADE

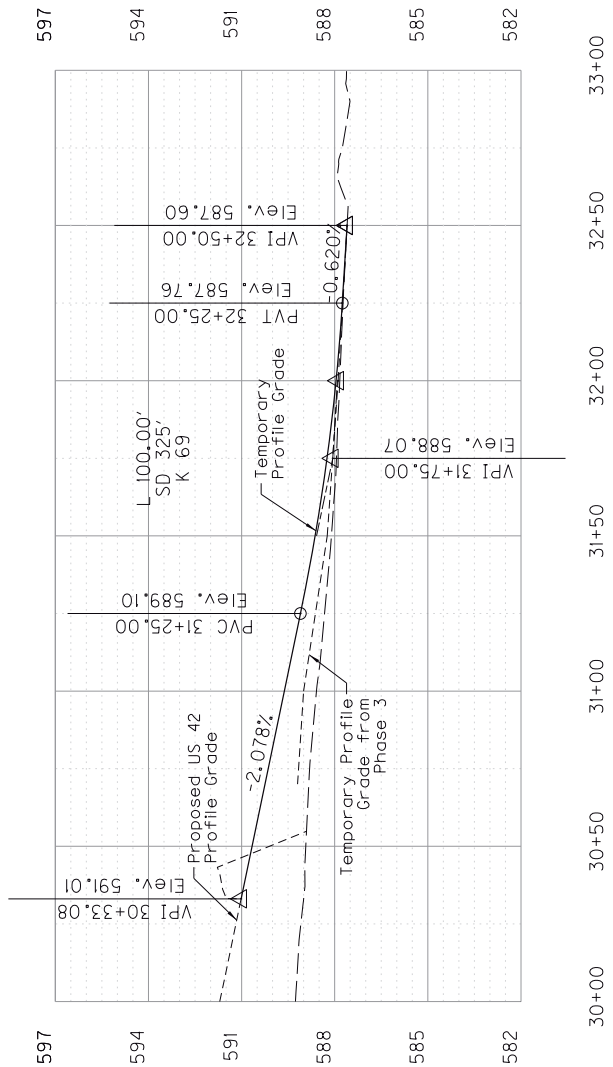


COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R201

TEMPORARY PAVEMENT 4B-1 COORDINATE CONTROL POINTS	
POINT	Station
POB	29+86.16
P1	32+90.71
P2	36+77.62
P3	37+77.14
P4	38+86.16
P5	39+97.43
P6	40+08.00
P7	41+18.00
P8	42+28.00
P9	43+38.00
P10	44+48.00
P11	45+58.00
P12	46+68.00
P13	47+78.00
P14	48+88.00
P15	49+98.00
P16	50+08.00
P17	51+18.00
P18	52+28.00
P19	53+38.00
P20	54+48.00
P21	55+58.00
P22	56+68.00
P23	57+78.00
P24	58+88.00
P25	59+98.00
P26	60+08.00
P27	61+18.00
P28	62+28.00
P29	63+38.00
P30	64+48.00
P31	65+58.00
P32	66+68.00
P33	67+78.00
P34	68+88.00
P35	69+98.00
P36	70+08.00
P37	71+18.00
P38	72+28.00
P39	73+38.00
P40	74+48.00
P41	75+58.00
P42	76+68.00
P43	77+78.00
P44	78+88.00
P45	79+98.00
P46	80+08.00
P47	81+18.00
P48	82+28.00
P49	83+38.00
P50	84+48.00
P51	85+58.00
P52	86+68.00
P53	87+78.00
P54	88+88.00
P55	89+98.00
P56	90+08.00
P57	91+18.00
P58	92+28.00
P59	93+38.00
P60	94+48.00
P61	95+58.00
P62	96+68.00
P63	97+78.00
P64	98+88.00
P65	99+98.00
P66	100+08.00

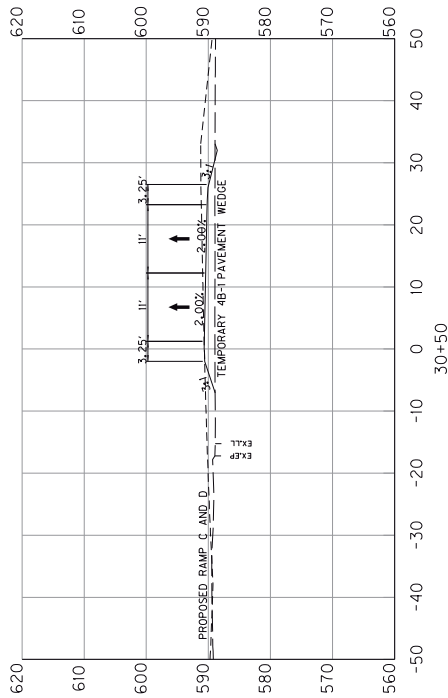
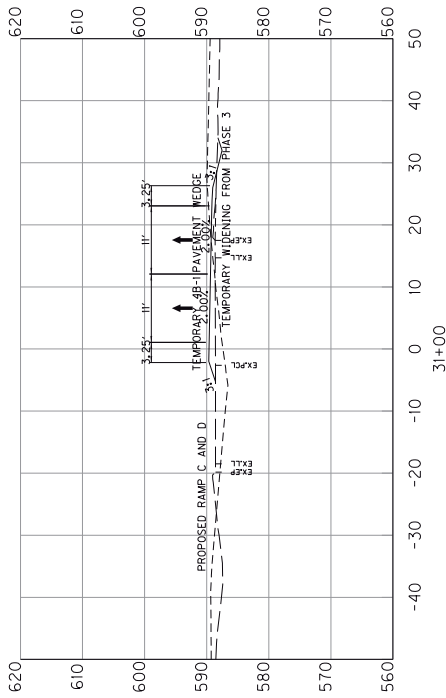
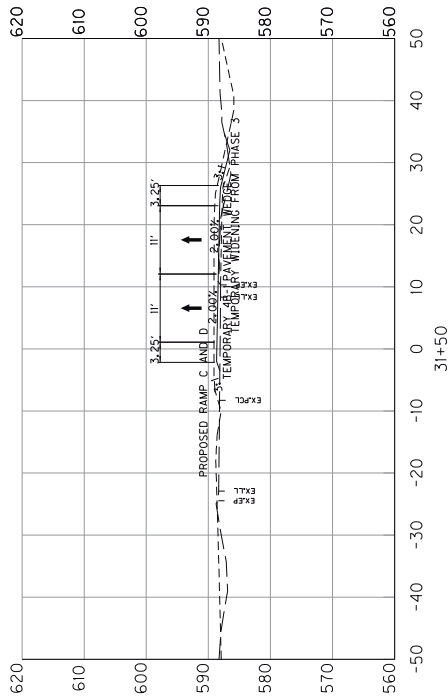
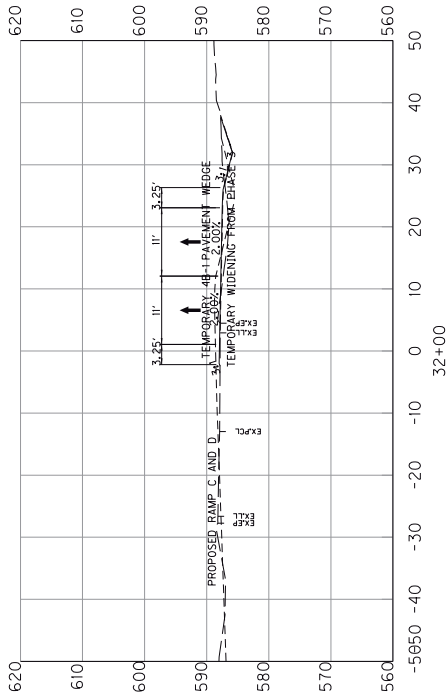
LEGEND	
WORK ZONE THIS PHASE	
TRAFFIC FLOW	
CHANNELIZATION DEVICES	
TEMP STRIPPING - 4" SOLID WHITE (145N)	
TEMP STRIPPING - 4" DASHED WHITE (145N)	
TEMP STRIPPING - 4" SOLID YELLOW (145Y)	
TEMP STRIPPING - 4" DASHED YELLOW (145Y)	
TYPE I BARRICADE	
TYPE III BARRICADE	

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R202



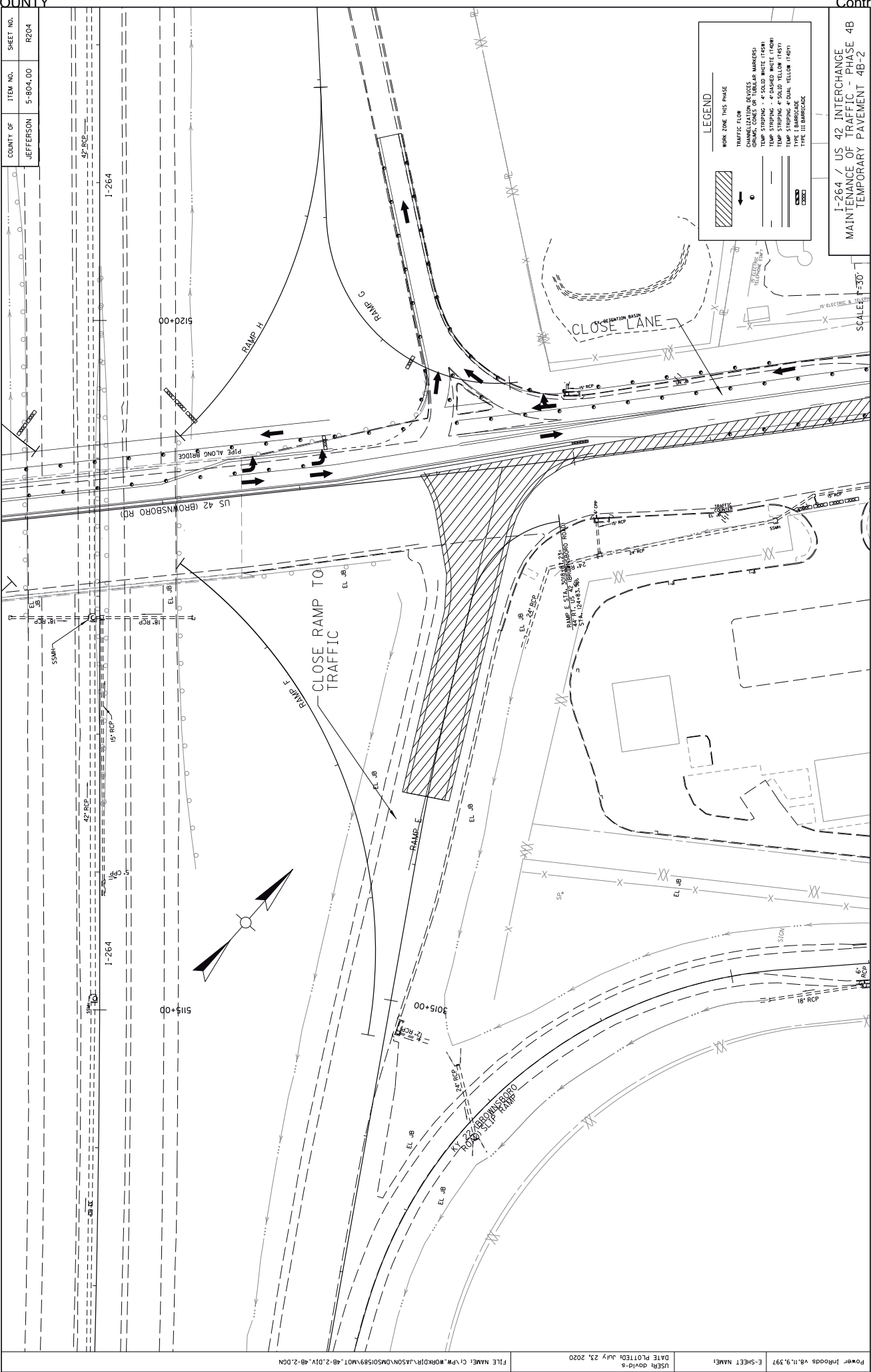
I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4B
TEMPORARY PAVEMENT 4B-1

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R203

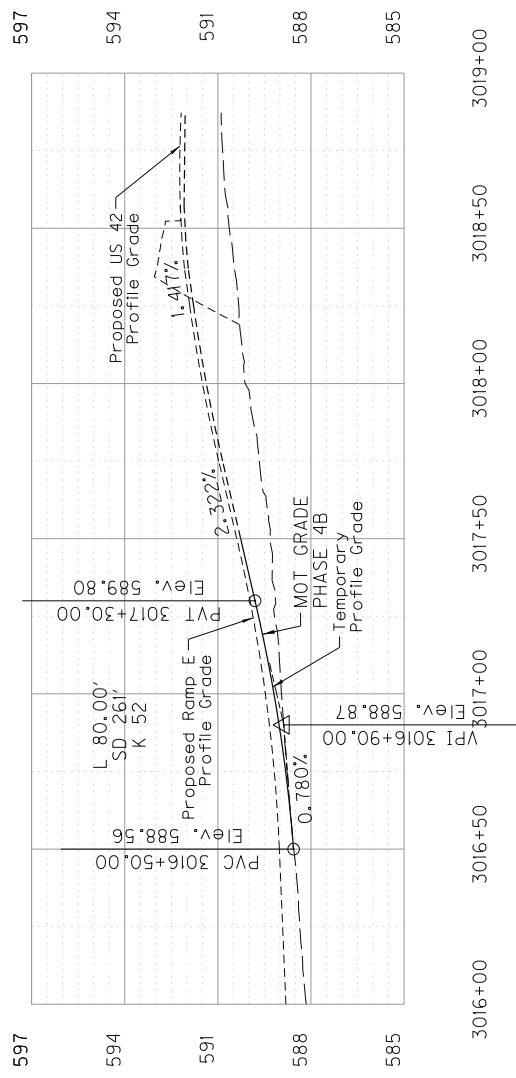


SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4B
TEMPORARY PAVEMENT 4B-1



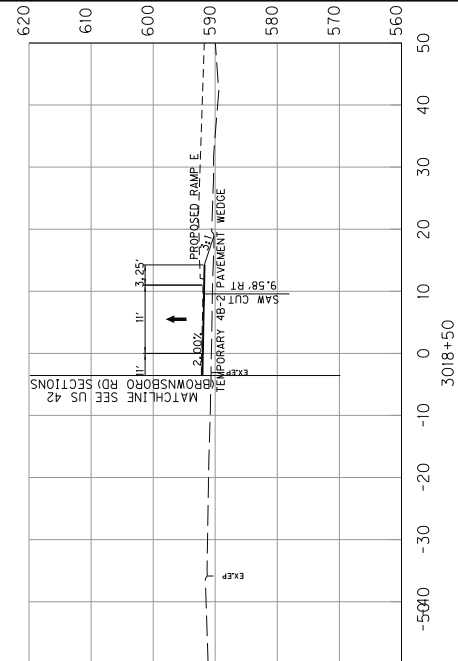
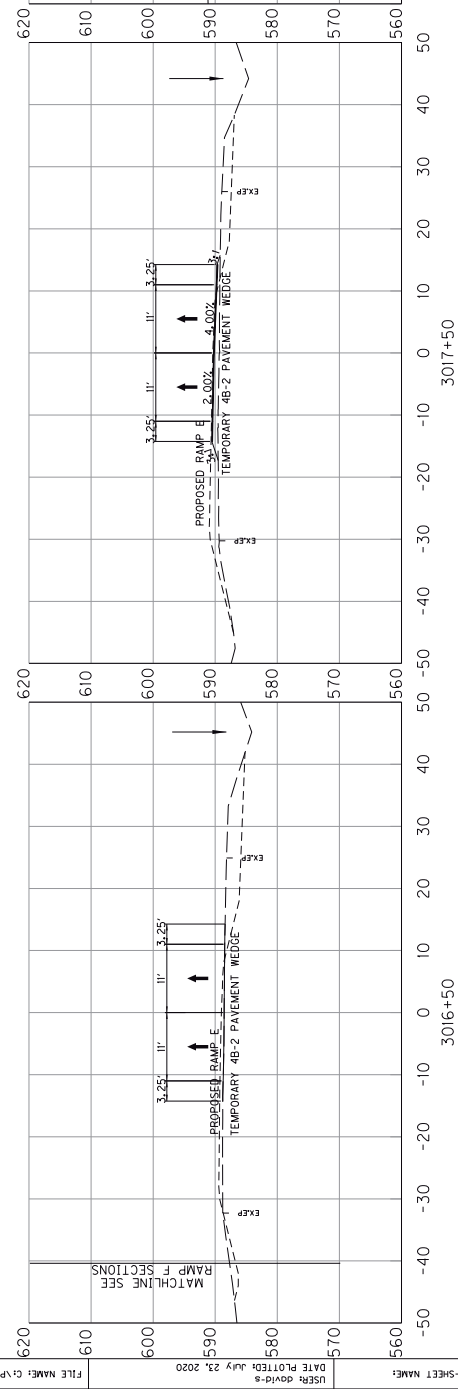
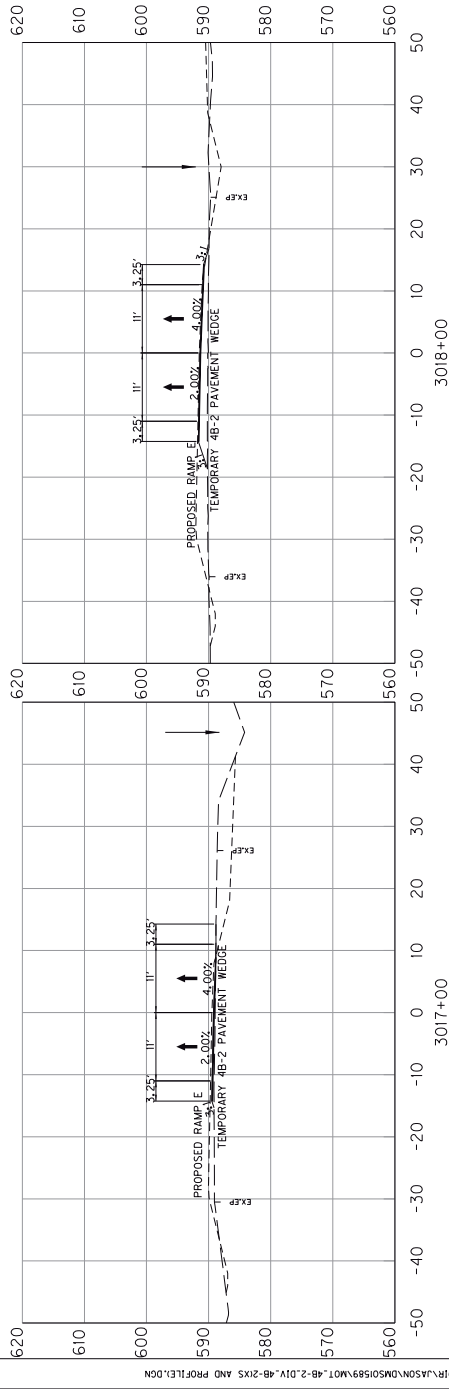
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R205



SCALE: 1"=

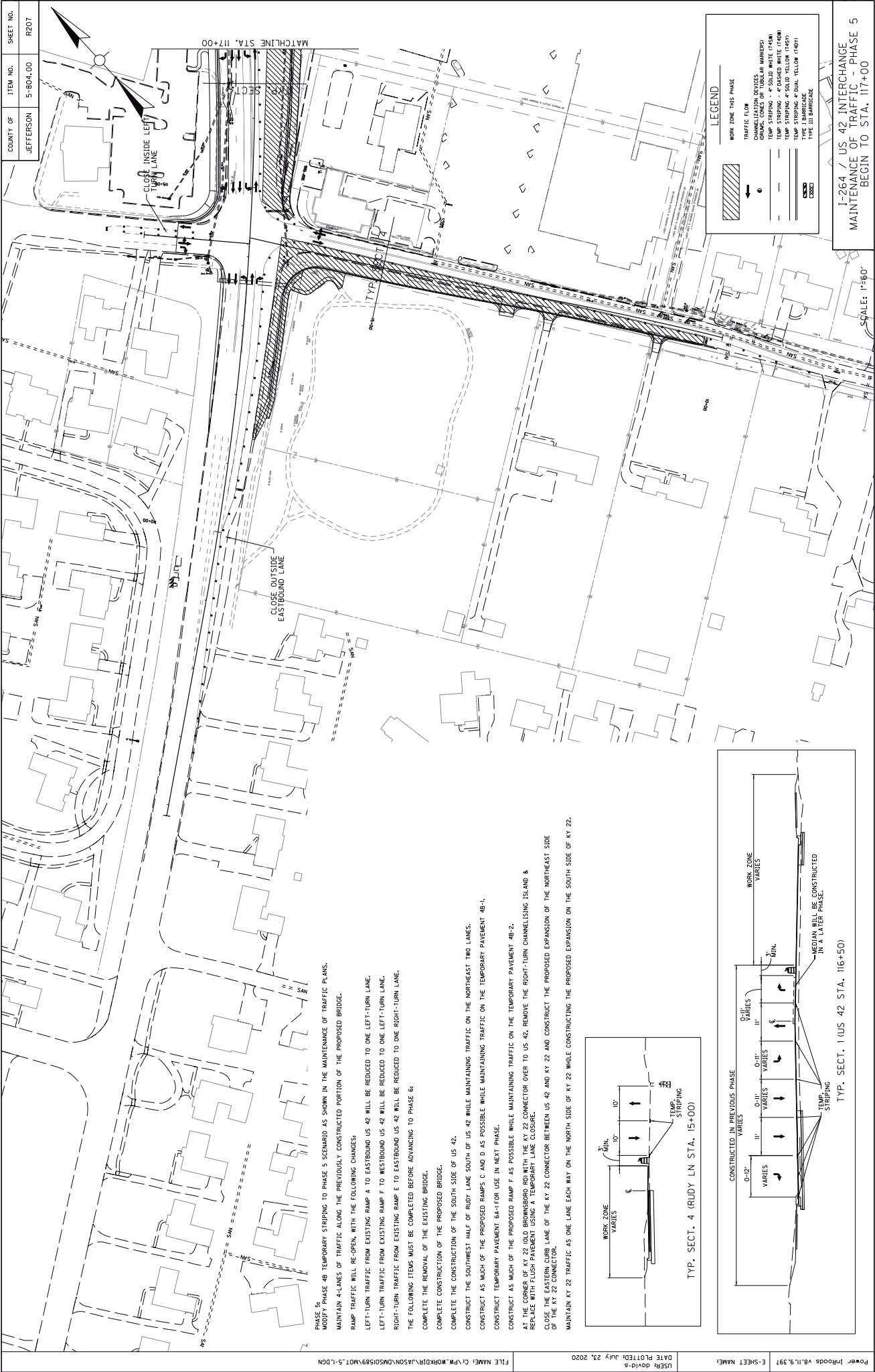
I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4B
TEMPORARY PAVEMENT 4B-2

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R206



SCALE: 1" = 10' HORIZONTAL
1" = 10' VERTICAL

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 4B
TEMPORARY PAVEMENT 4B-2



COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-R04.00	R207

LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES
GROUPS, CONES OR TUBULAR MARKERS

TEMP STRIPING - 4" SOLID WHITE (1400)

TEMP STRIPING - 4" DASHED WHITE (1400)

TEMP STRIPING - 4" SOLID YELLOW (1400)

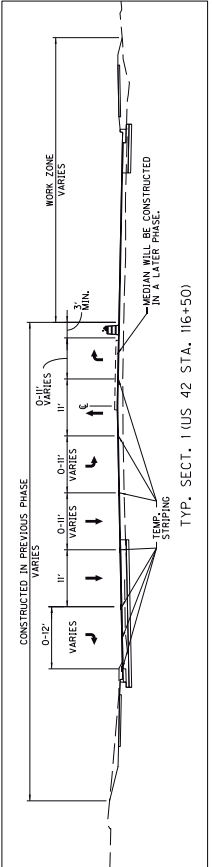
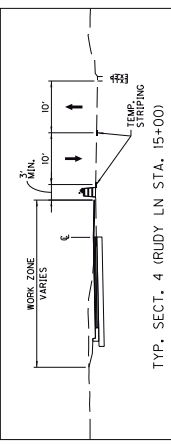
TEMP STRIPING - 4" DUAL YELLOW (1400)

TYPE III BARRICADE

1-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 5
BEGIN TO STA. 117+00

SCALE: 1"=60'

PHASE 5:
MODIFY PHASE 4B TEMPORARY STRIPING TO PHASE 5 SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS.
MAINTAIN 4-LANES OF TRAFFIC ALONG THE PREVIOUSLY CONSTRUCTED PORTION OF THE PROPOSED BRIDGE.
RAMP TRAFFIC WILL RE-OPEN, WITH THE FOLLOWING CHANGES:
LEFT-TURN TRAFFIC FROM EXISTING RAMP A TO EASTBOUND US 42 WILL BE REDUCED TO ONE LEFT-TURN LANE.
LEFT-TURN TRAFFIC FROM EXISTING RAMP F TO WESTBOUND US 42 WILL BE REDUCED TO ONE LEFT-TURN LANE.
RIGHT-TURN TRAFFIC FROM EXISTING RAMP E TO EASTBOUND US 42 WILL BE REDUCED TO ONE RIGHT-TURN LANE.
THE FOLLOWING ITEMS MUST BE COMPLETED BEFORE ADVANCING TO PHASE 6:
COMPLETE THE REMOVAL OF THE EXISTING BRIDGE.
COMPLETE CONSTRUCTION OF THE PROPOSED BRIDGE.
COMPLETE THE CONSTRUCTION OF THE SOUTH SIDE OF US 42.
CONSTRUCT THE SOUTHWEST HALF OF RUDY LANE SOUTH OF US 42 WHILE MAINTAINING TRAFFIC ON THE NORTHEAST TWO LANES.
CONSTRUCT AS MUCH OF THE PROPOSED RAMP C AND D AS POSSIBLE WHILE MAINTAINING TRAFFIC ON THE TEMPORARY PAVEMENT 4B-1.
CONSTRUCT TEMPORARY PAVEMENT 6A-1 FOR USE IN NEXT PHASE.
CONSTRUCT AS MUCH OF THE PROPOSED RAMP F AS POSSIBLE WHILE MAINTAINING TRAFFIC ON THE TEMPORARY PAVEMENT 4B-2.
AT THE CORNER OF KY 22 OLD BRIDGE/ROAD WITH THE KY 22 CONNECTOR OVER TO US 42, REMOVE THE RIGHT-TURN CHANNELISING ISLAND & REPLACE WITH FLUSH PAVEMENT USING A TEMPORARY LANE CLOSURE.
CLOSE THE EASTERN CURB LANE OF THE KY 22 CONNECTOR BETWEEN US 42 AND KY 22 AND CONSTRUCT THE PROPOSED EXPANSION OF THE NORTHEAST SIDE OF THE KY 22 CONNECTION.
MAINTAIN KY 22 TRAFFIC AS ONE LANE EACH WAY ON THE NORTH SIDE OF KY 22 WHILE CONSTRUCTING THE PROPOSED EXPANSION ON THE SOUTH SIDE OF KY 22.

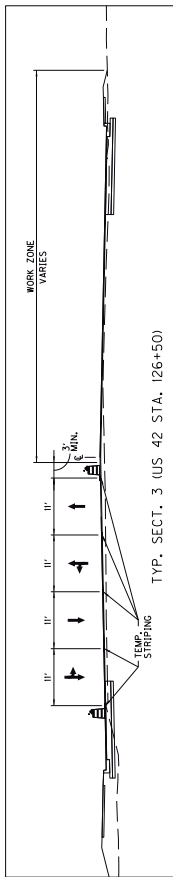


LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES
GRINDS, CONES OF TUBULAR MARKERS
TEMP STOPPING 4" DASHED WHITE (400P)
TEMP STOPPING 4" SOLID YELLOW (1450P)
TEMP STOPPING 4" DUAL YELLOW (1400P)
TYPE I BARRICADE
TYPE III BARRICADE

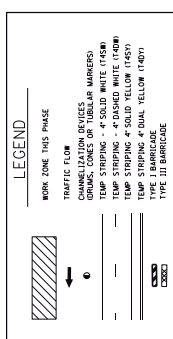


OF EXIST. BRIDGE.

10

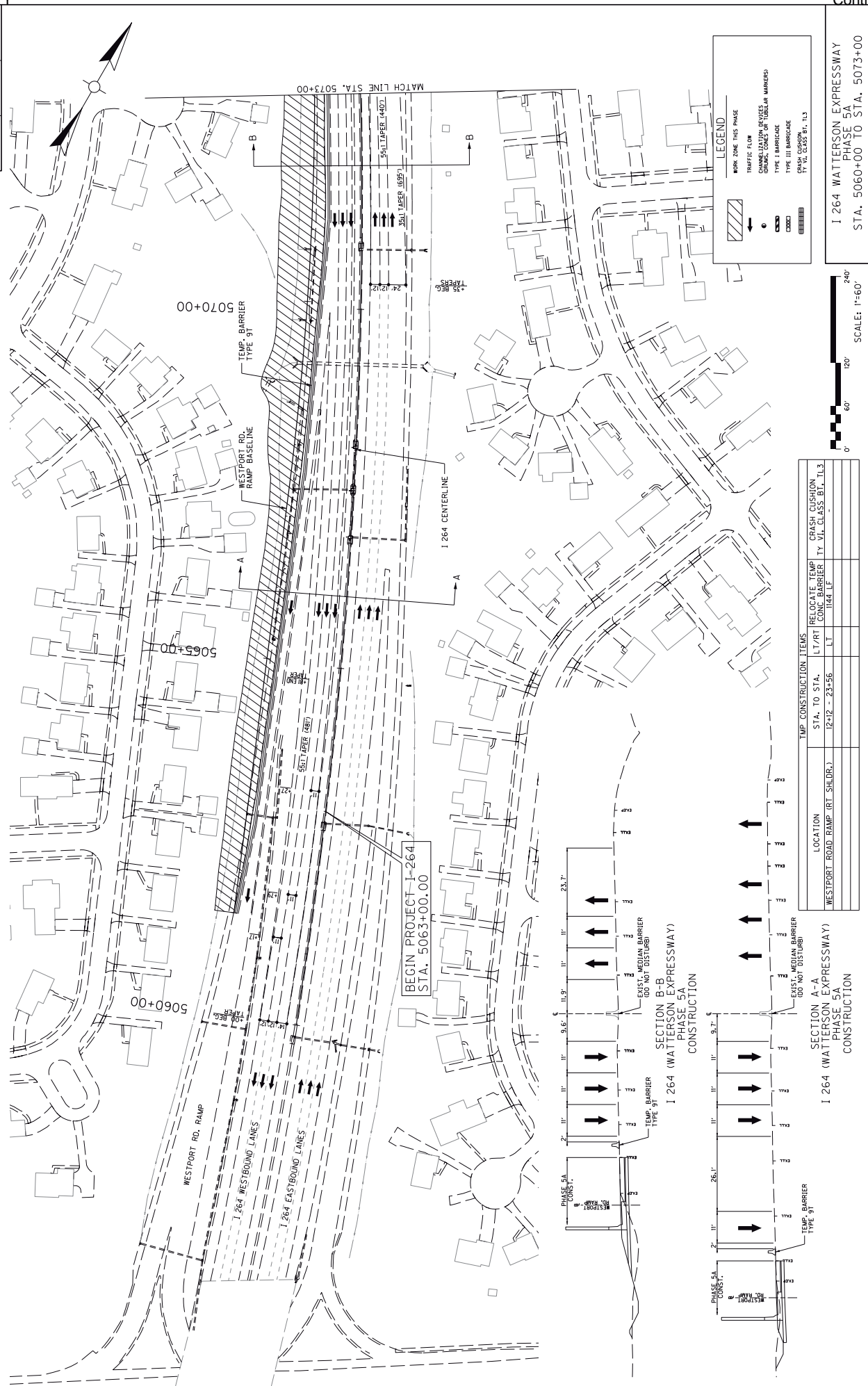
TYPE:

PHASE 5:
MODIFY PHASE 4B TEMPORARY STRIPING TO PHASE 5 SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS.
MAINTAIN 4-LANES OF TRAFFIC ALONG THE PREVIOUSLY CONSTRUCTED PORTION OF THE PROPOSED BRIDGE.
RAMP TRAFFIC WILL RE-OPEN, WITH THE FOLLOWING CHANGES:
LEFT-TURN TRAFFIC FROM EXISTING RAMP A TO EASTBOUND US 42 WILL BE REDUCED TO ONE LEFT-TURN LANE.
LEFT-TURN TRAFFIC FROM EXISTING RAMP F TO WESTBOUND US 42 WILL BE REDUCED TO ONE LEFT-TURN LANE.
RIGHT-TURN TRAFFIC FROM EXISTING RAMP E TO EASTBOUND US 42 WILL BE REDUCED TO ONE RIGHT-TURN LANE.
THE FOLLOWING ITEMS MUST BE COMPLETED BEFORE ADVANCING TO PHASE 6:
COMPLETE THE REMOVAL OF THE EXISTING BRIDGE.
COMPLETE CONSTRUCTION OF THE PROPOSED BRIDGE.
COMPLETE THE CONSTRUCTION OF THE SOUTH SIDE OF US 42.
CONSTRUCT THE SOUTHWEST HALF OF RUBY LANE SOUTH OF US 42 WHILE MAINTAINING TRAFFIC ON THE NORTHEAST HALF OF RUBY LANE.
CONSTRUCT AS MUCH OF THE PROPOSED RAMP C AND D AS POSSIBLE WHILE MAINTAINING TRAFFIC ON THE TEMPORARY PAVEMENT.
CONSTRUCT TEMPORARY PAVEMENT 6A+I FOR USE IN NEXT PHASE.
CONSTRUCT AS MUCH OF THE PROPOSED RAMP F AS POSSIBLE WHILE MAINTAINING TRAFFIC ON THE TEMPORARY PAVEMENT.
AT THE CORNER OF KY 22 (OLD BROWNWOOD RD) WITH THE KY 22 CONNECTOR OVER TO US 42, REMOVE THE RIGHT-TURN LANE.
REPLACE WITH A FLUSH PAVEMENT USING A TEMPORARY LANE CLOSURE.
CLOSE THE EXISTING CURB LANE OF THE KY 22 CONNECTOR BETWEEN US 42 AND KY 22 AND CONSTRUCT THE PROPOSED PORTION OF THE KY 22 CONNECTOR.
MAINTAIN KY 22 TRAFFIC AS ONE LANE EACH WAY ON THE NORTH SIDE OF KY 22 WHILE CONSTRUCTING THE PROPOSED

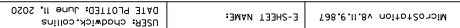


I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 5
STA. 127+00 TO END

MicroStation v8.11.9.867	E-SHEET NAME:	USFR: chodwick.collins DATE PLOTTED: June 11, 2020	FILE NAME: C:\DMS97239\FR21000MT.DGN
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FILE NAME: C:\DMS97239\R2100MT.DGN



MicroStation v8.11.9.667	E-SHEET NAME:
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WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICE
(BARRICADES, CONES OR TUBES)

TYPE I BARRICADE

TYPE III BARRICADE

CRASH CUSHION
TY VI, CLASS BT, TL3

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICE
(BARRICADES, CONES OR TUBES)

TYPE I BARRICADE

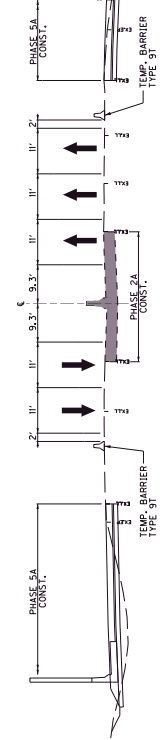
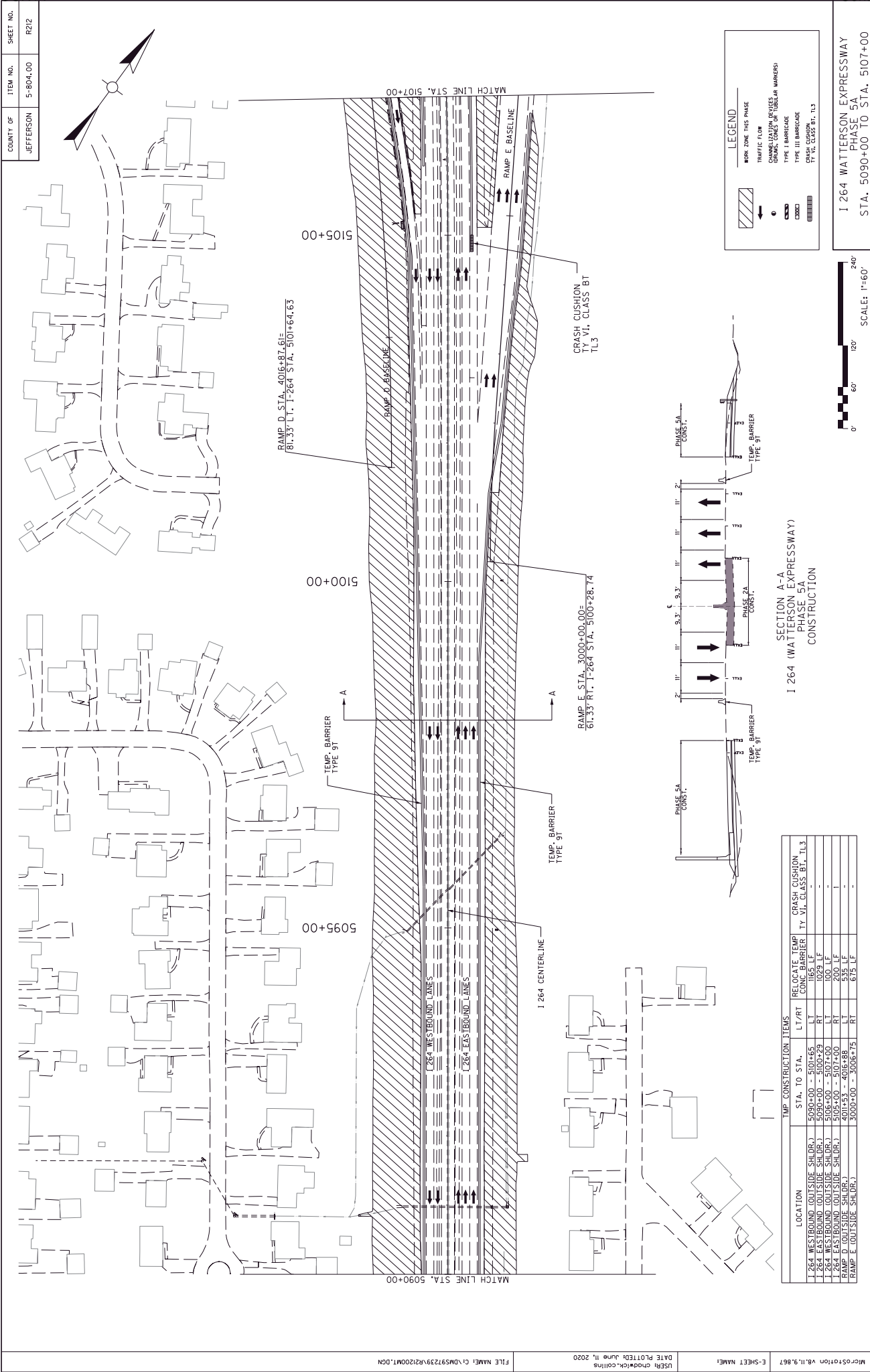
TYPE III BARRICADE

CRASH CUSHION
TY VI, CLASS BT, TL3

0' 60' 120' 240'

SCALE: 1"=60'

SECTION A-A
J 264 (WATTERSON EXPRESSWAY)
PHASE 5A
CONSTRUCTION



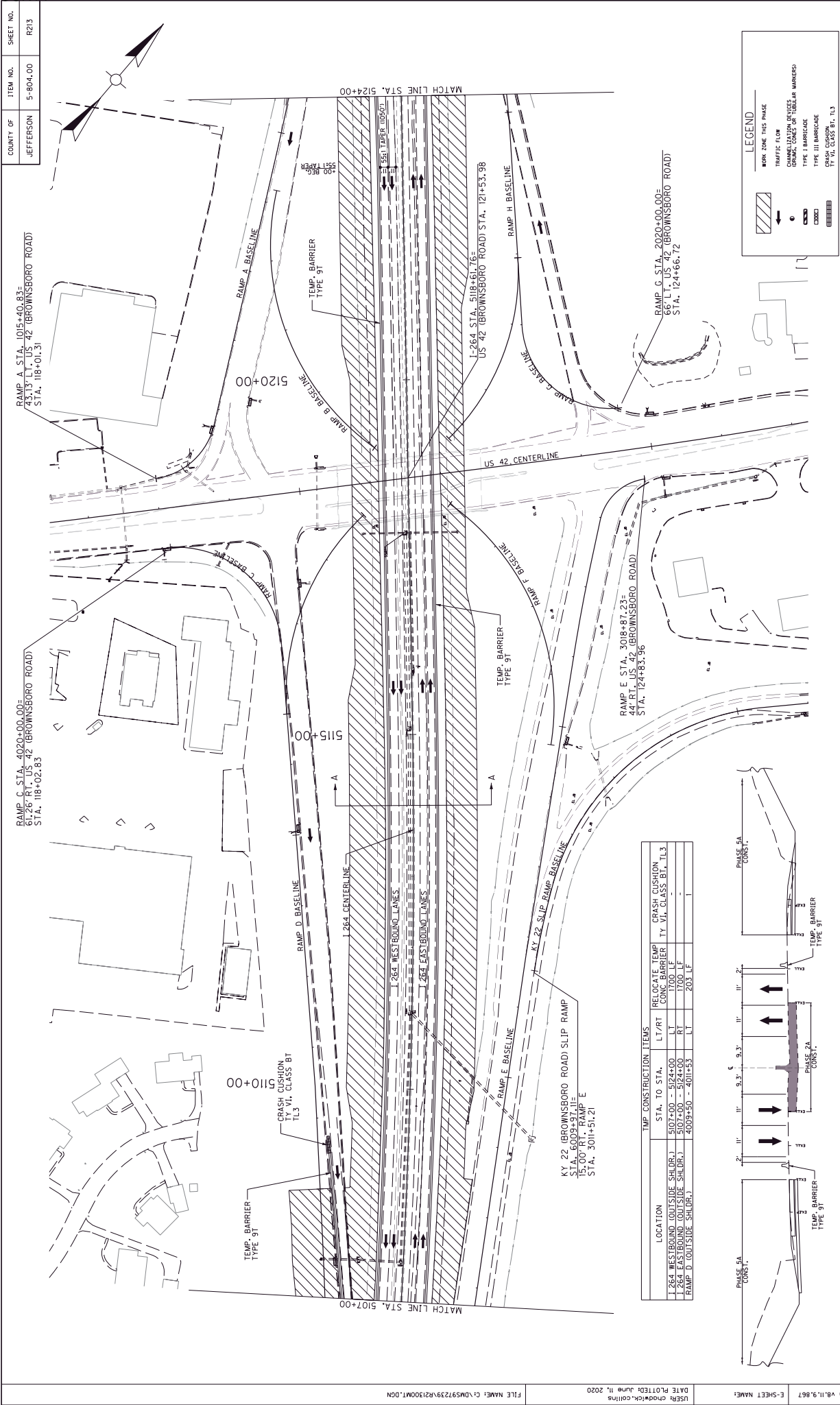
LOCATION	TMP CONSTRUCTION ITEMS		RELOCATE TEMP CONSTRUCTION	CRASH CUSHION
	STA. TO STA.	LT/RT		
I 264 WESTBOUND (OUTSIDE SHOULDER)	5090+00 - 5101+65	LT	1029 LF	-
I 264 EASTBOUND (OUTSIDE SHOULDER)	5090+00 - 5100+29	RT	1029 LF	-
I 264 WESTBOUND (OUTSIDE SHOULDER)	5100+00 - 5107+00	LT	100 LF	-
I 264 EASTBOUND (OUTSIDE SHOULDER)	5100+00 - 5107+00	RT	100 LF	-
RAMP D (OUTSIDE SHOULDER)	4016+87.61 - 5101+64.63	RT	675 LF	-
RAMP E (OUTSIDE SHOULDER)	3000+00 - 5100+28.74	RT	675 LF	-

LEGEND

- WORK ZONE THIS PHASE
- TRAFFIC FLOW
- CRASH CUSHION (TY VI, CLASS BT, TL3)
- TEMP. BARRIER (TYPE 9T)
- TYPE I BARRICADE
- TYPE III BARRICADE
- CRASH CUSHION (TY VI, CLASS BT, TL3)



I 264 WATTERSON EXPRESSWAY
PHASE 5A
STA. 5090+00 TO STA. 5107+00



SECTION A-A
I 264 (WATTERSON EXPRESSWAY)
PHASE 5A
CONSTRUCTION

0' 60' 120' 240'

SCALE: 1"=60'

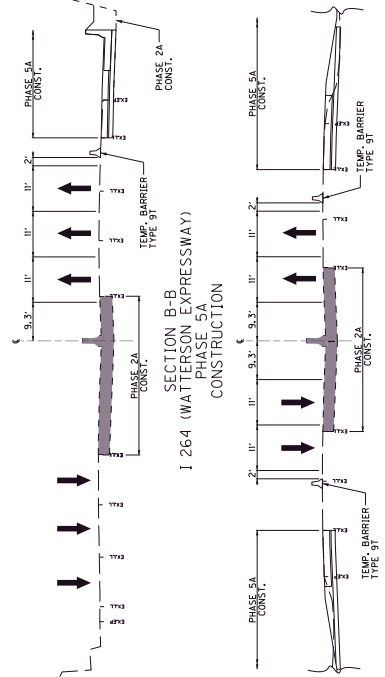
I 264 WATTERSON EXPRESSWAY
PHASE 5A
STA. 5107+00 TO STA. 5124+00

USFR chodwick.collins	DATE PLOTTED: June 11, 2020	FILE NAME: C:\MS97239\2100M1.DGN
E-SHEET NAME:		







COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-804.00	R213

LOCATION	STA. TO STA.	RELOCATE	TEMP	CRASH CUSHION
I 264 WESTBOUND OUTSIDE SHOULDER	5107+00 - 5124+00	LT	1700 LF	TY VI, CLASS BT, IL3
I 264 EASTBOUND OUTSIDE SHOULDER	5107+00 - 5124+00	RT	1700 LF	-
RAMP D (OUTSIDE SHOULDER)	5107+00 - 5118+87	LT	203 LF	-

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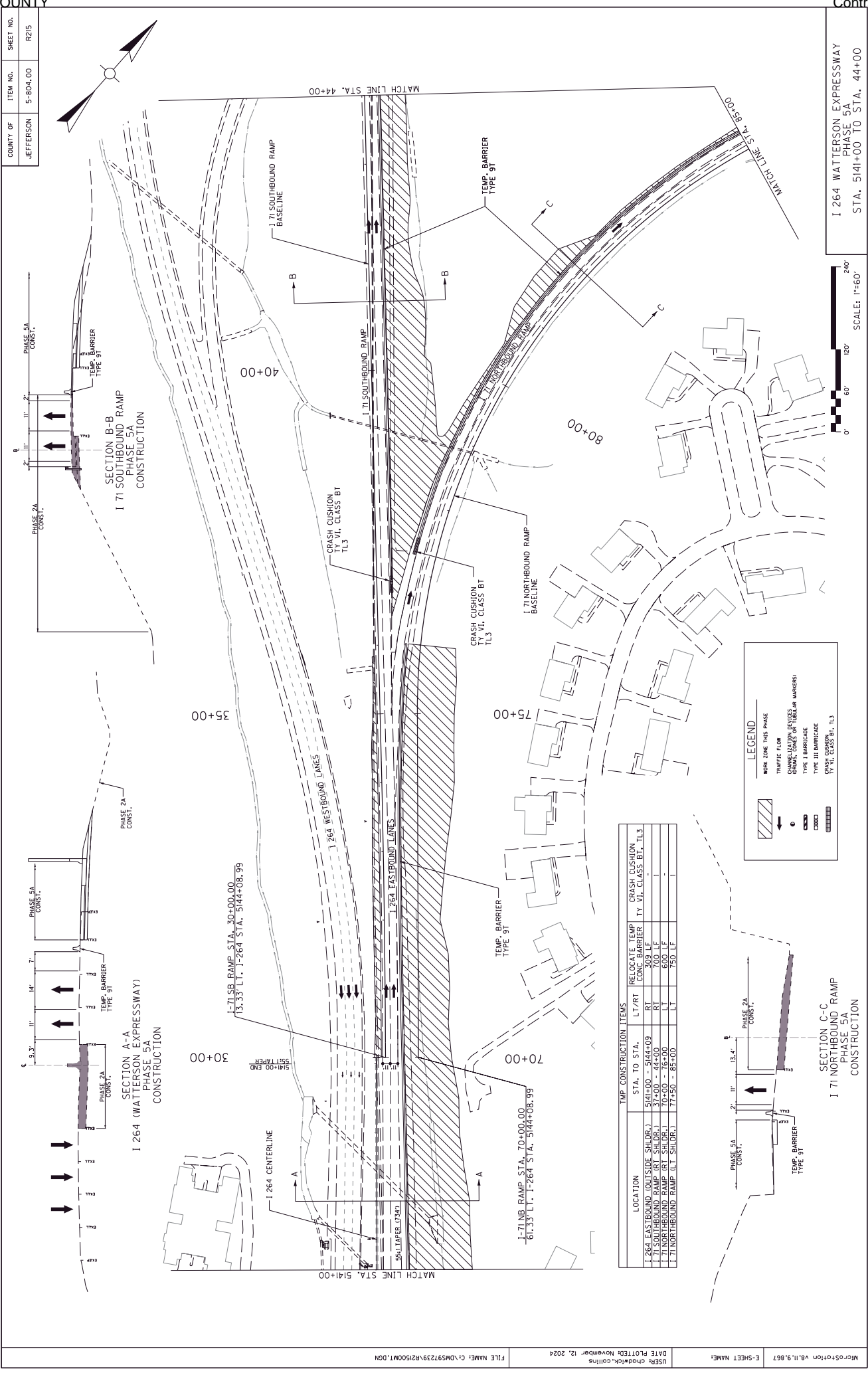


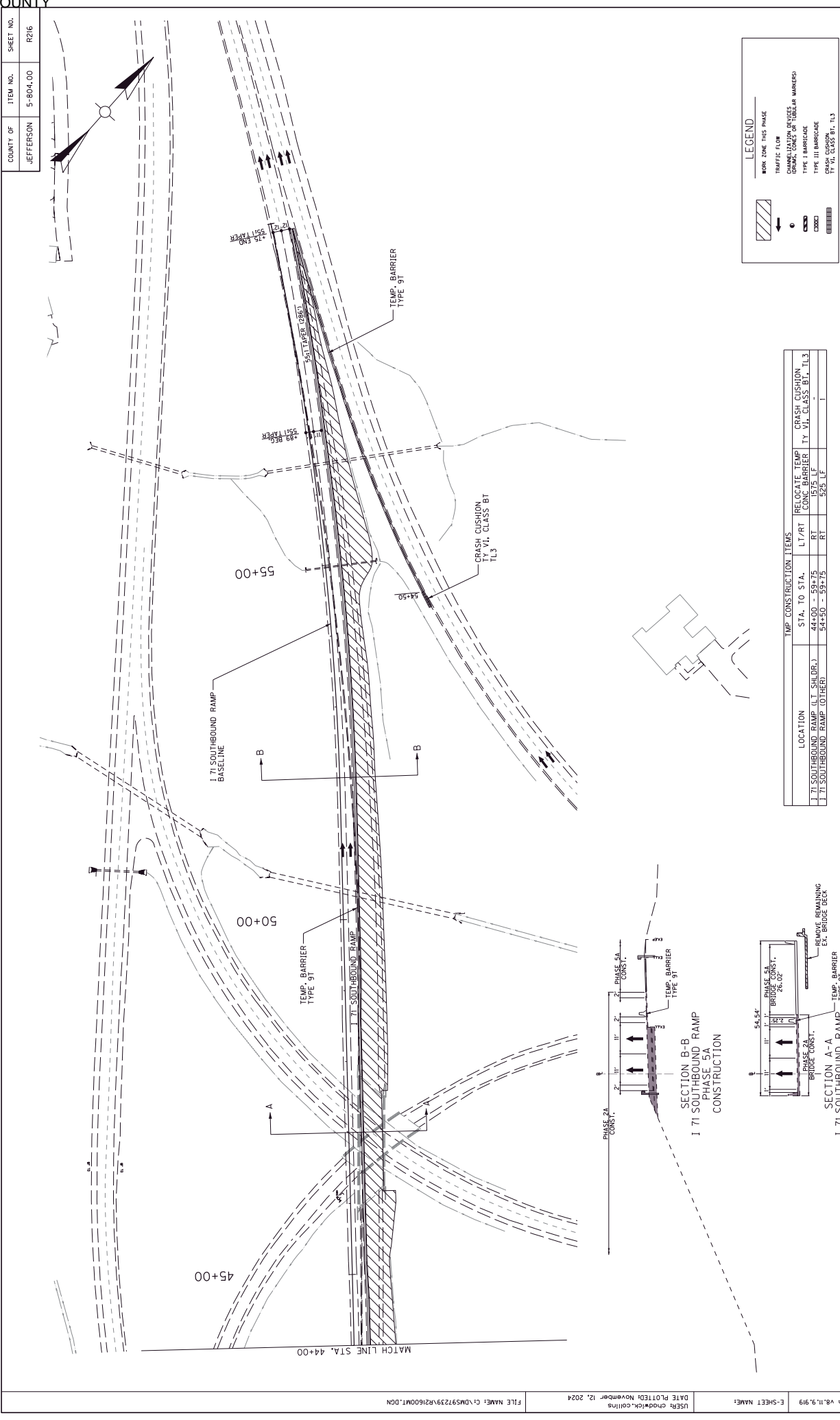
LOCATION	TMP CONSTRUCTION ITEMS			RELOCATE TEMP CONC BARRIER	CRASH CUSHION TY, VI, CLASS BIV, TL3
	STA. TO STA.	L/T			
1. 264 WESTBOUND (OUTSIDE SHOUL.)	5124+00 - 5129+50	LT	550 LF		
2. 264 EASTBOUND (OUTSIDE SHOUL.)	5124+00 - 5128+50	RT	450 LF		
3. 264 WESTBOUND (OUTSIDE SHOUL.)	5124+00 - 5128+50	LT	450 LF		
4. 264 EASTBOUND (OUTSIDE SHOUL.)	2006+50 - 2011+90	L/T	500 LF		

	LEGEND	WORK ZONE THIS PHASE
	TRAFFIC FLOW	
		CHANNELIZATION DEVICES (CONES, CONES ON TUBULAR MARKERS)
		TYPE I BARRICADE
		TYPE III BARRICADE
		GRASS CURBSON TR-VI, CLASS B1, IL3

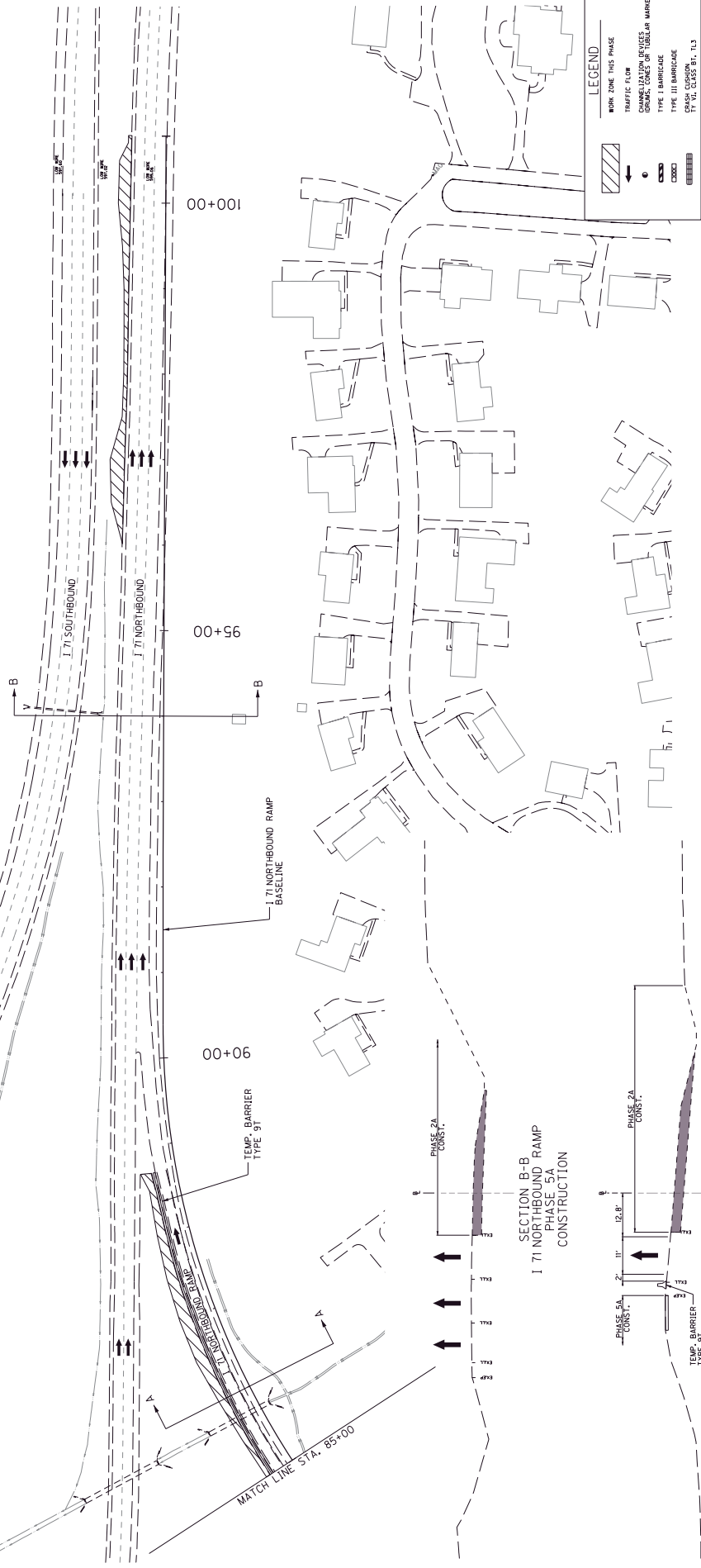
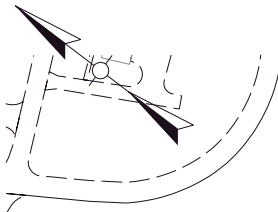
I 264 WATTERSON EXPRESSWAY
PHASE 5A
STA. 5124+00 TO STA. 5141+00







TMP CONSTRUCTION ITEMS	
LOCATION	STA. TO STA.
I 71 NORTHBOUND RAMP (LT. SHLDOR.)	85+00 - 88+70
	LT
	370 LF
	RELOCATE TEMP CONC BARRIER
	CRASH CUSHION
	TY VI. CLASS BT. TL3
	-



0' 60' 120' 240'

SCALE: 1"=60'

I 71 NORTHBOUND RAMP
PHASE 5A
STA. 85+00 TO STA. 100+78

LEGEND

WORK ZONE THIS PHASE

TRAFFIC FLOW

CHANNELIZATION DEVICES
CHUMBS, CONES OR TUBULAR MARKERS

TEMP STRIPING - 4" SOLID WHITE (145M)

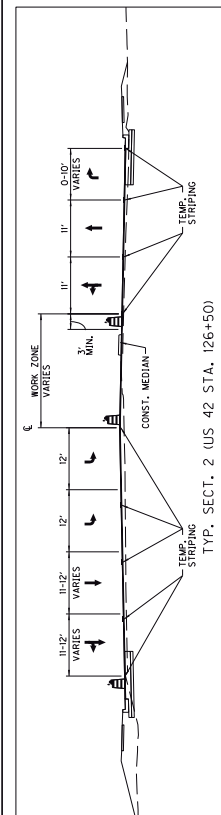
TEMP STRIPING - 4" DASHED WHITE (174B)

TEMP STRIPING - 4" SOLID YELLOW (145Y)

TEMP STRIPING - 4" DUAL YELLOW (140Y)

TYPE I BARRICADE

TYPE III BARRICADE



CONSTRUCTED IN PREV. PHASE
VARIES

12'

12'-2 1/2'

VARIES

12'

VARIES

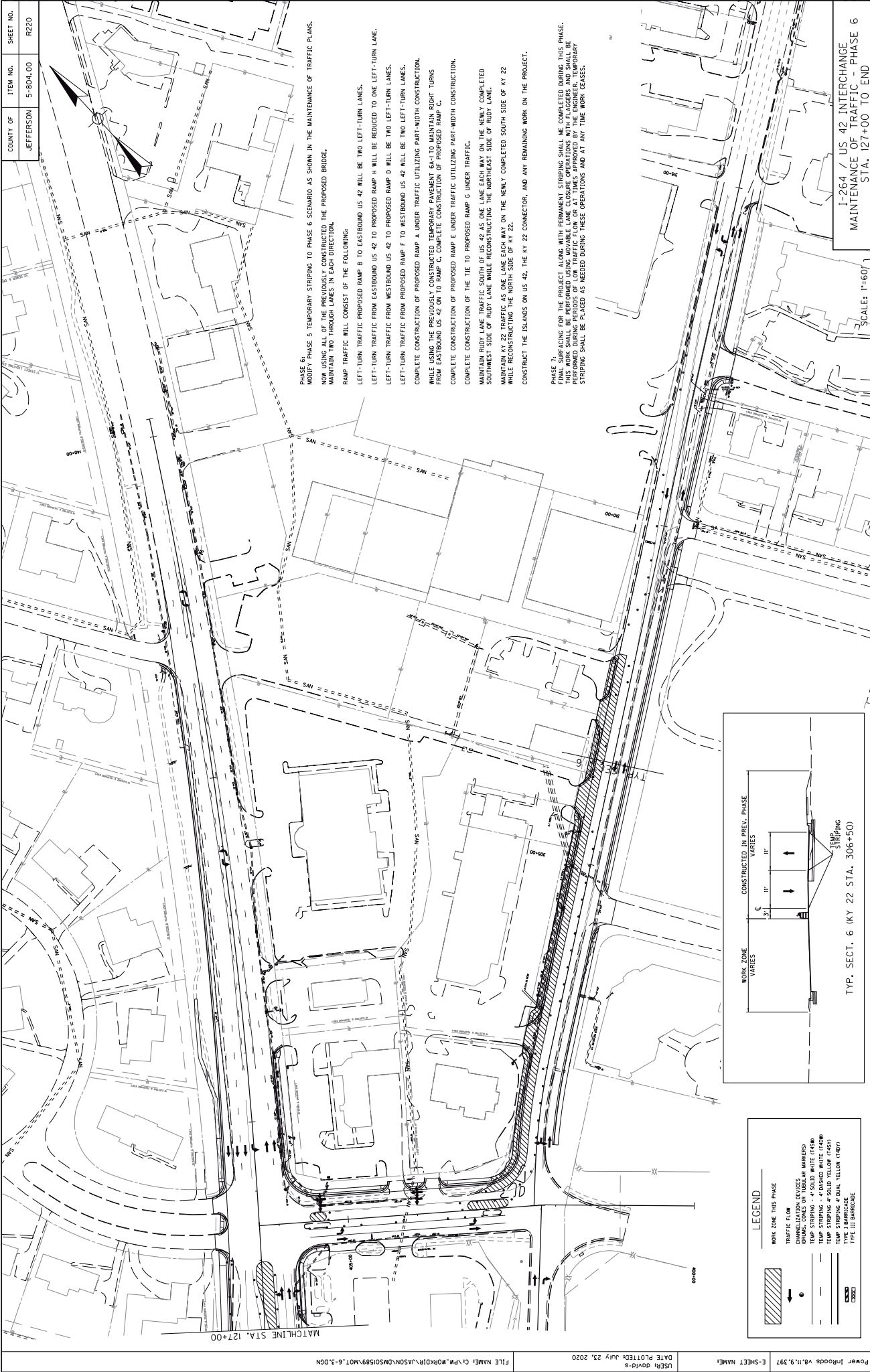
15' RAMPING

WORK ZONE
VARIES

TYP. SECT. 5 (RAMP E STA. 3015+00)

I-264 / US 42 INTERCHANGE
MAINTENANCE OF TRAFFIC - PHASE 6
STA. 117+00 TO 127+00

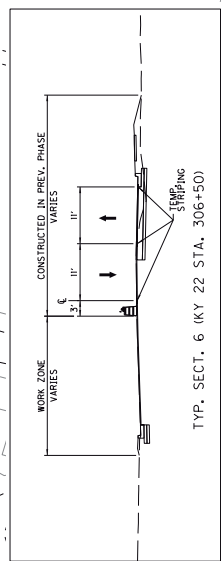
SCALE: 1"=60'



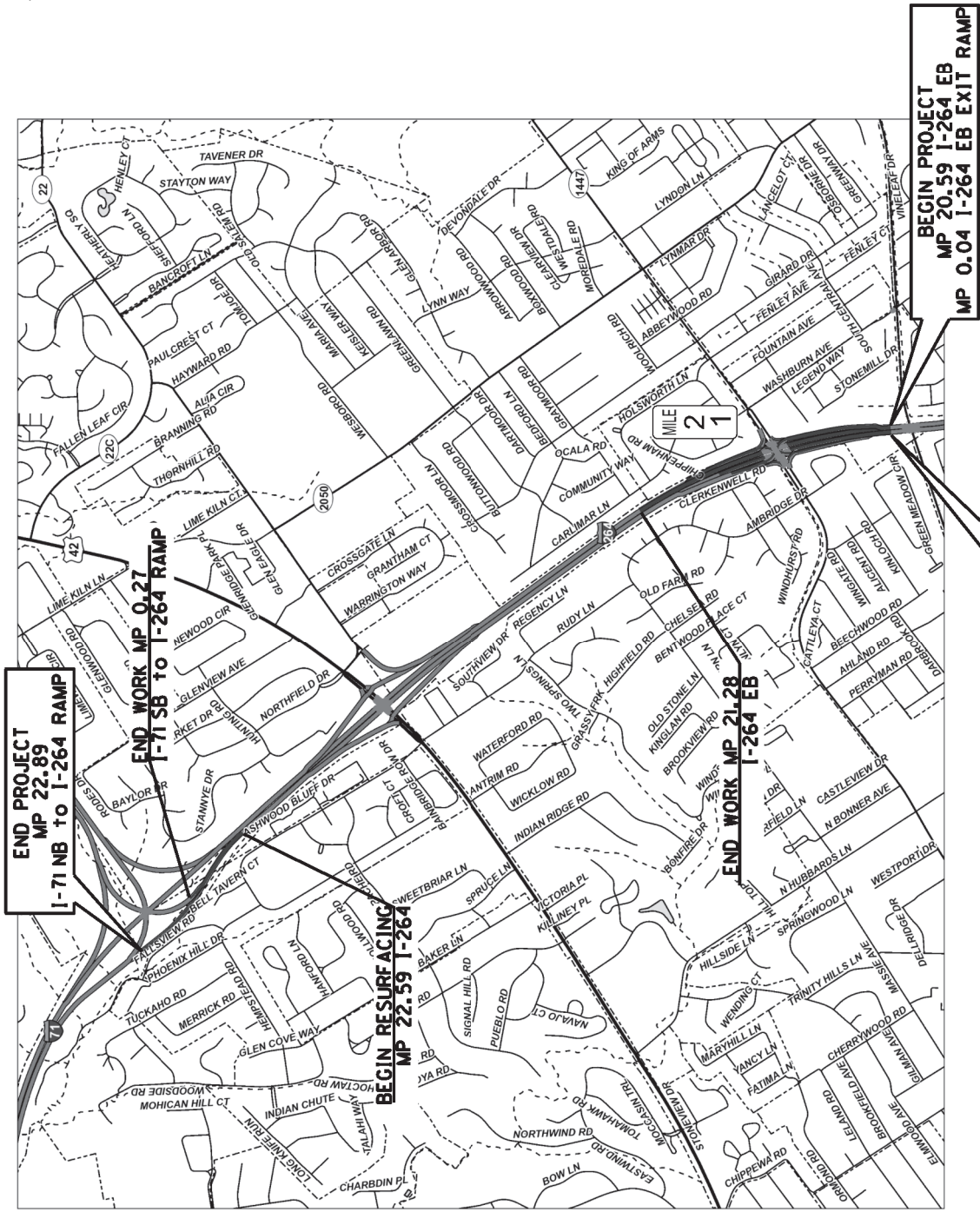
COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-R04.00	R220

PHASE 6:
ADOPT PHASE 5 TEMPORARY STRIPING TO PHASE 6 SCENARIO AS SHOWN IN THE MAINTENANCE OF TRAFFIC PLANS.
NOW USING ALL OF THE PREVIOUSLY CONSTRUCTED THE PROPOSED BRIDGE.
MAINTAIN TWO THROUGH LANES IN EACH DIRECTION.
RAMP TRAFFIC WILL CONSIST OF THE FOLLOWING:
LEFT-TURN TRAFFIC PROPOSED RAMP B TO EASTBOUND US 42 WILL BE TWO LEFT-TURN LANES.
LEFT-TURN TRAFFIC FROM EASTBOUND US 42 TO PROPOSED RAMP H WILL BE REDUCED TO ONE LEFT-TURN LANE.
LEFT-TURN TRAFFIC FROM WESTBOUND US 42 TO PROPOSED RAMP D WILL BE TWO LEFT-TURN LANES.
LEFT-TURN TRAFFIC FROM PROPOSED RAMP F TO WESTBOUND US 42 WILL BE TWO LEFT-TURN LANES.
COMPLETE CONSTRUCTION OF PROPOSED RAMP A UNDER TRAFFIC UTILIZING PART-WIDTH CONSTRUCTION.
WHILE USING THE PREVIOUSLY CONSTRUCTED TEMPORARY PAVEMENT 6A-1 TO MAINTAIN RIGHT TURNS FROM EASTBOUND US 42 ON TO RAMP C. COMPLETE CONSTRUCTION OF PROPOSED RAMP C.
COMPLETE CONSTRUCTION OF THE TIE TO PROPOSED RAMP G UNDER TRAFFIC.
MAINTAIN RUDY LANE TRAFFIC SOUTH OF US 42 AS ONE LANE EACH WAY ON THE NEWLY COMPLETED SOUTHWEST SIDE OF RUDY LANE WHILE RECONSTRUCTING THE NORTHEAST SIDE OF RUDY LANE.
MAINTAIN KY 22 TRAFFIC AS ONE LANE EACH WAY ON THE NEWLY COMPLETED SOUTH SIDE OF KY 22 WHILE RECONSTRUCTING THE NORTH SIDE OF KY 22.
CONSTRUCT THE ISLANDS ON US 42, THE KY 22 CONNECTOR, AND ANY REMAINING WORK ON THE PROJECT.

PHASE 7:
FINAL SURFACING FOR THE PROJECT ALONG WITH PERMANENT STRIPING SHALL BE COMPLETED DURING THIS PHASE.
CONSTRUCTION OF THE PROJECT SHALL BE COMPLETED DURING THIS PHASE.
PERFORMED DURING PERIODS OF LOW TRAFFIC FLOW OR AT TIMES APPROVED BY THE ENGINEER. TEMPORARY STRIPING SHALL BE PLACED AS NEEDED DURING THESE OPERATIONS AND AT ANY TIME WORK CEASES.



LEGEND	
	WORK ZONE THIS PHASE
	TRAFFIC FLOW
	CHANNELIZATION DEVICES
	TEMP STRIPING
	TEMP STRIPING - 4' DASHED WHITE (140W)
	TEMP STRIPING - 4' SOLID YELLOW (145Y)
	TEMP STRIPING - 4' DUAL YELLOW (140Y)
	TYPE III BARRICADE



BEGIN PROJECT
MP 20.56 I-264 WB
MP 0.30 I-264 WB ENTRANCE RAMP

BEGIN PROJECT
MP 20.59 I-264 EB
MP 0.04 I-264 EB EXIT RAMP

no scale

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-20017	

I-264 (WATTERSON EXPRESSWAY)
RESURFACING
MP 20.56 - MP 21.28
MP 22.59 - MP 22.89

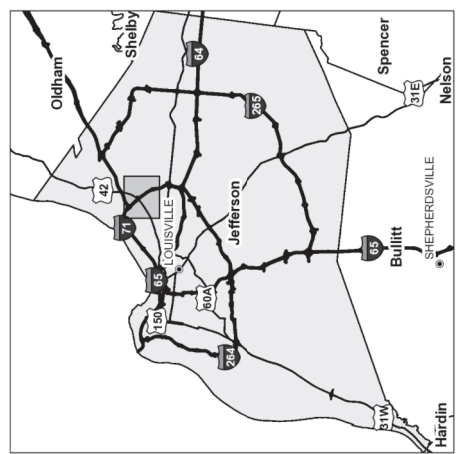
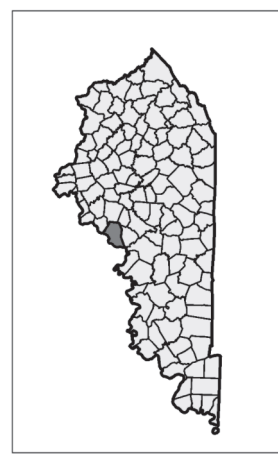
JEFFERSON COUNTY

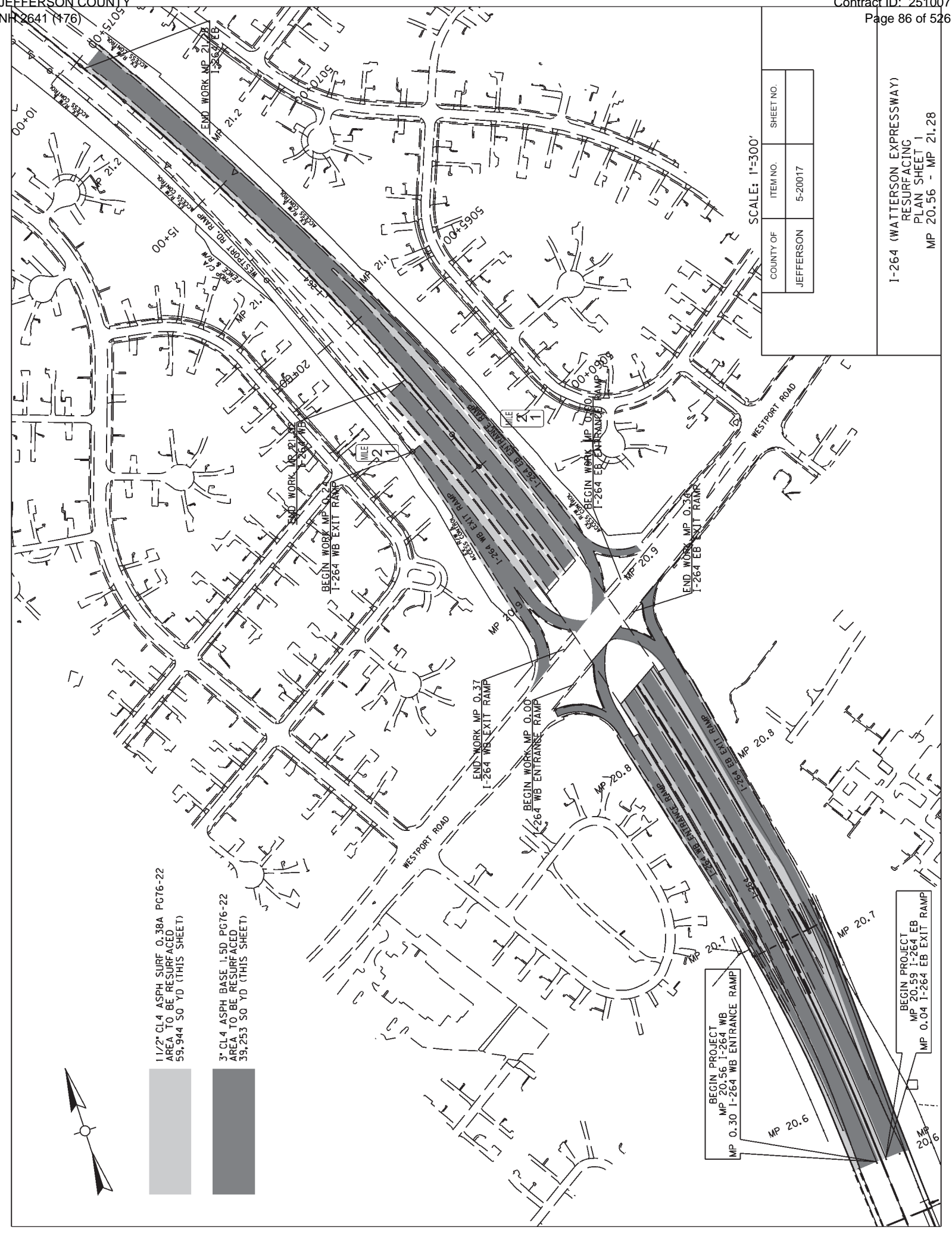
FEDERAL PROJECT NUMBER: NHPM 264 1090

STATE PROJECT NUMBER: NHPM 056 264 21-23

ITEM NUMBER: 5-20017.00

LETTING DATE: MARCH 30, 2025



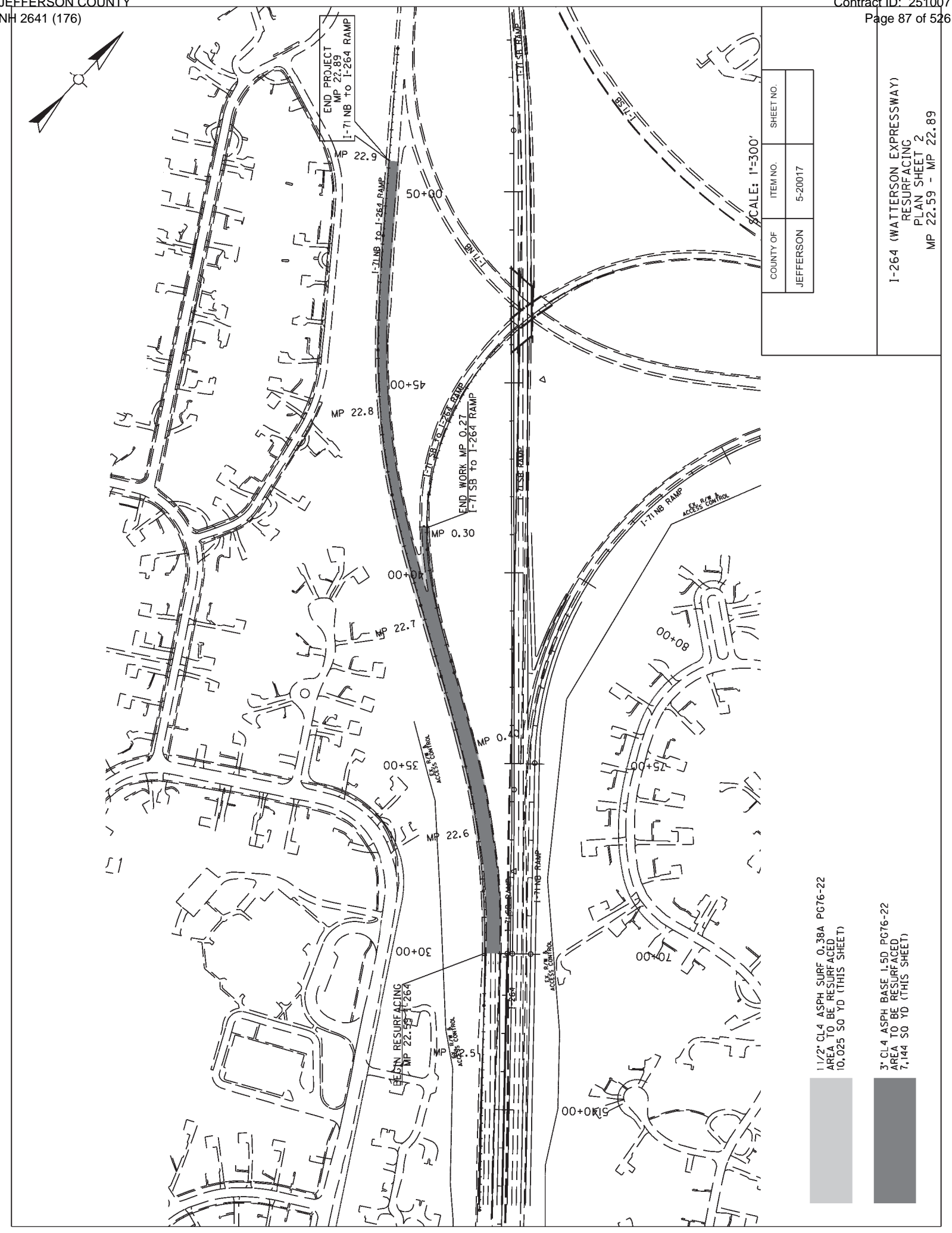


COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-20017	

1-264 (WATTERSON EXPRESSWAY)
RESURFACING
PLAN SHEET 1
MP 20.56 - MP 21.28

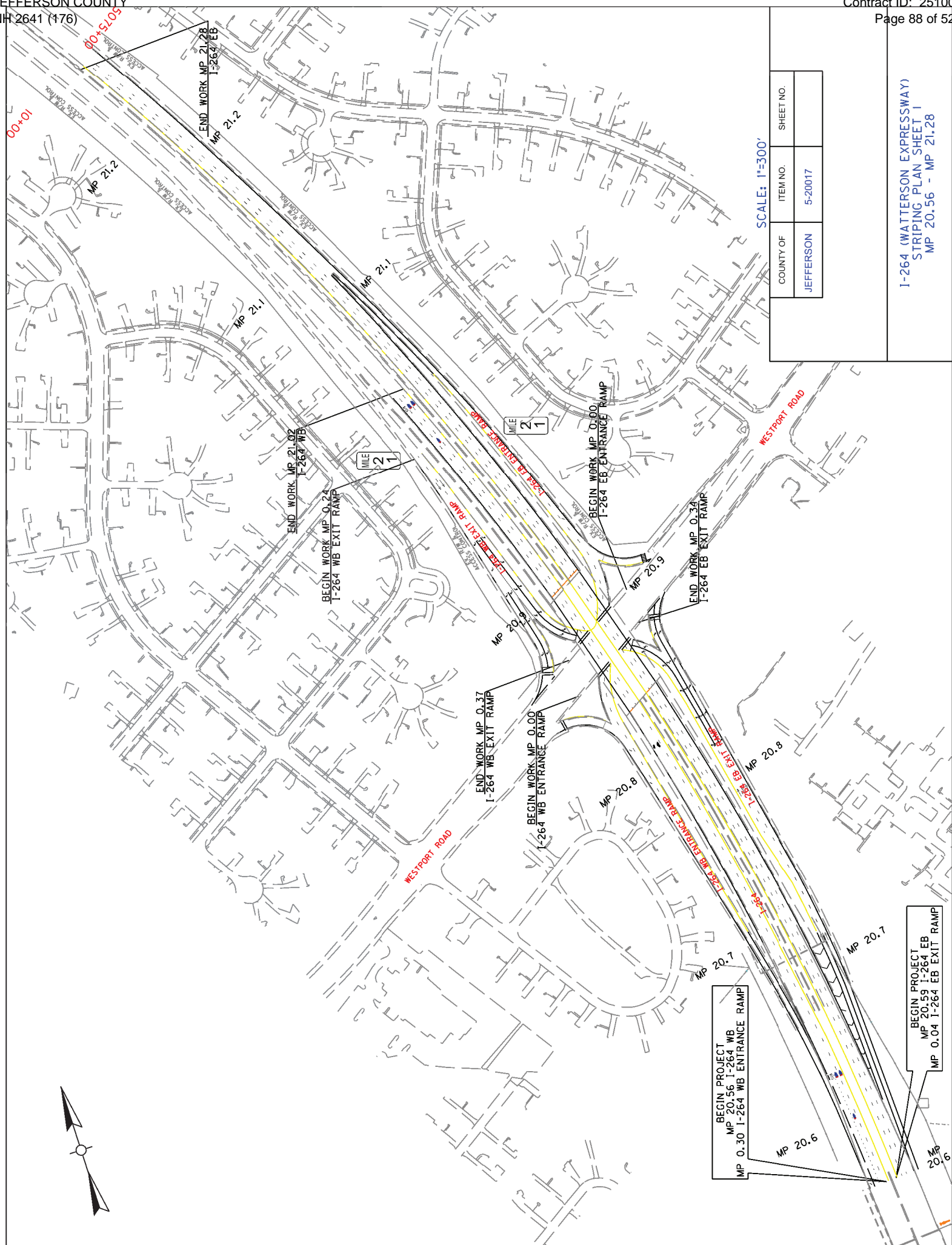
BEGIN PROJECT
MP 20.56 I-264 WB
MP 0.30 I-264 WB ENTRANCE RAMP

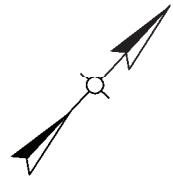
BEGIN PROJECT
MP 20.59 I-264 EB
MP 0.04 I-264 EB EXIT RAMP



COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-20017	

1-264 (WATERSON EXPRESSWAY)
RESURFACING
PLAN SHEET 2
MP 22.59 - MP 22.89



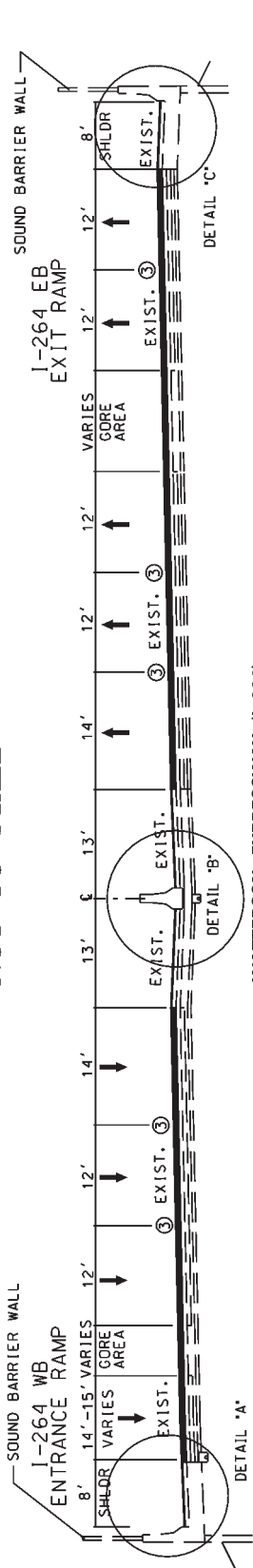


	COUNTY OF	ITEM NO.	SHEET NO.
	JEFFERSON	5-20017	

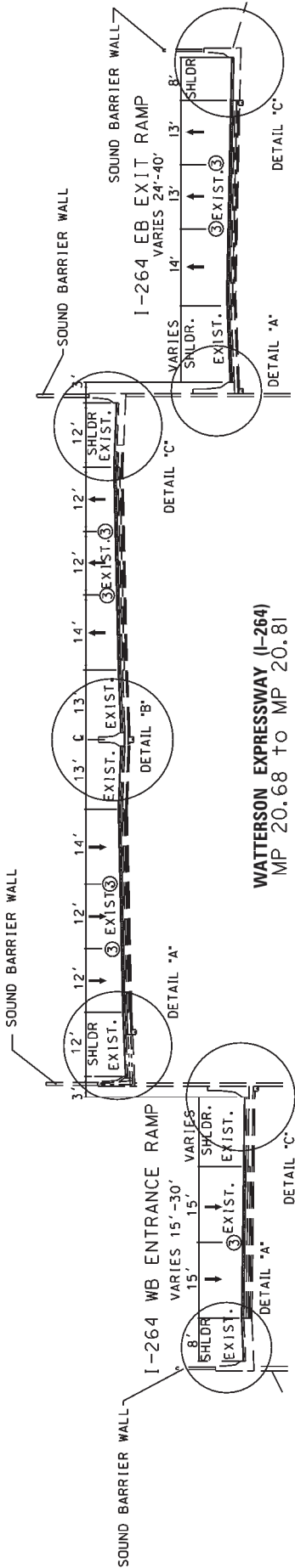
I-264 (WATTERSON EXPRESSWAY)
STRIPING PLAN SHEET 2
MP 22.59 - MP 22.89

TYPICAL SECTION DETAILS

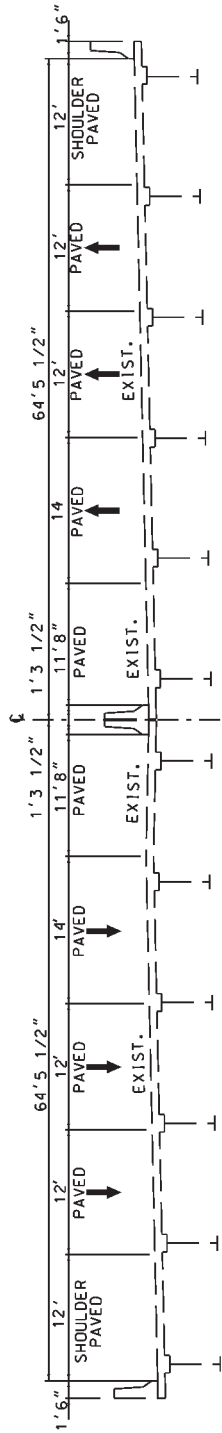
- NOT TO SCALE -



WATTERSON EXPRESSWAY (I-264)
MP 20.56 TO MP 20.68



WATTERSON EXPRESSWAY (I-264)
MP 20.68 TO MP 20.81



WATTERSON EXPRESSWAY (I-264) 6-LANE
SUPERELEVATED BRIDGE SECTION
MP 20.81 TO MP 20.90

WESTBOUND BRIDGE

EASTBOUND BRIDGE

NO SCALE

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-20017	

RESURFACE WATTERSON EXPRESSWAY (I-264)

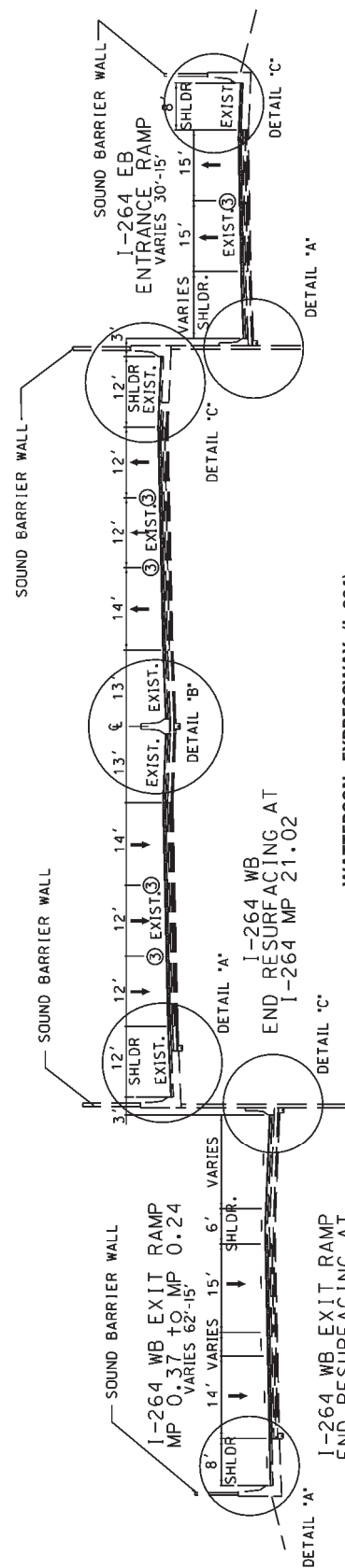
- MAINLINE TRAFFIC LANES & RAMP LANES
ASPHALT PAVEMENT MILLING AND TEXTURING
CL4 ASPH BASE 1.50D PG76-22
CL4 ASPH SURF 0.38A PG76-22
- SHOULDERS
ASPHALT PAVEMENT MILLING AND TEXTURING
CL4 ASPH SURF 0.38A PG76-22
- 4 1/2" depth
3" depth
1 1/2" depth
- 1 1/2" depth
1 1/2" depth

- Asphalt Seal required from outside edge of paved shoulder to a point 2 feet down the ditch or fill slope. Two applications of the following:
EMULSIFIED ASPHALT RS-2
ASPHALT SEAL AGGREGATE
2.40 LB/SQ YD
20 LB/SQ YD (size no. 8 or 9M)
- Apply Asphalt Material for Tack at a rate of 0.7 lbs/SY between each lift of asphalt.
- Joint Adhesive
- Level and Wedging to be used as directed by the engineer for pavement irregularities.

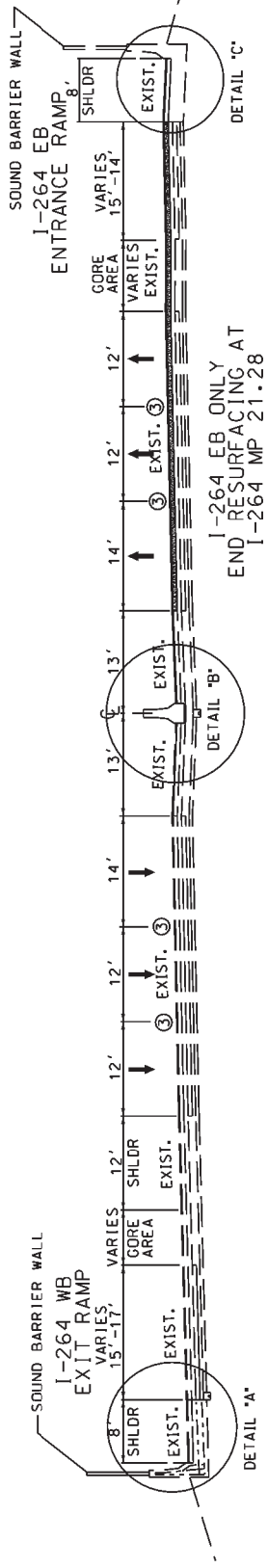
I-264 (WATTERSON EXPRESSWAY)
RESURFACING
TYPICAL SECTIONS

TYPICAL SECTION DETAILS

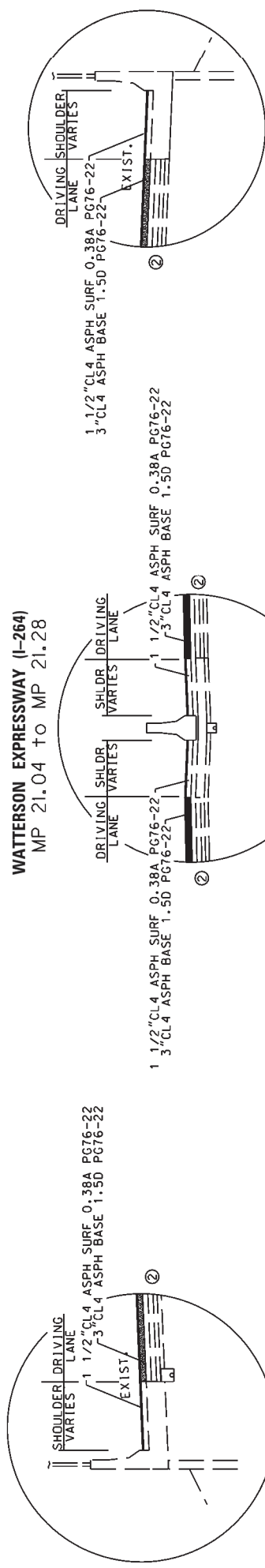
- NOT TO SCALE -



WATTERSON EXPRESSWAY (I-264)
MP 20.90 to MP 21.04



WATTERSON EXPRESSWAY (I-264)
MP 21.04 to MP 21.28



DETAIL 'A'

DETAIL 'B'

DETAIL 'C'

NO SCALE

RESURFACE WATTERSON EXPRESSWAY (I-264)

- MAINLINE TRAFFIC LANES & RAMP LANES
- ASPHALT PAVEMENT MILLING AND TEXTURING
- CL4 ASPH BASE 1.50D PG76-22
- CL4 ASPH SURF 0.38A PG76-22

- SHOULDERS
- ASPHALT PAVEMENT MILLING AND TEXTURING
- CL4 ASPH SURF 0.38A PG76-22

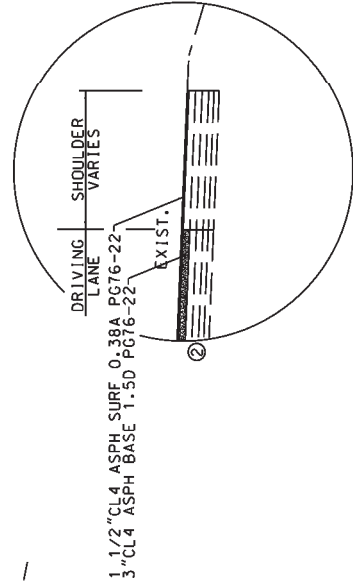
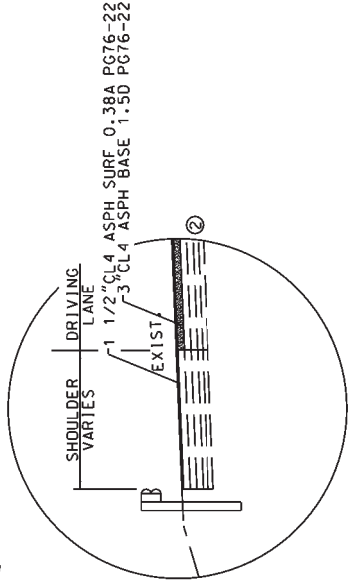
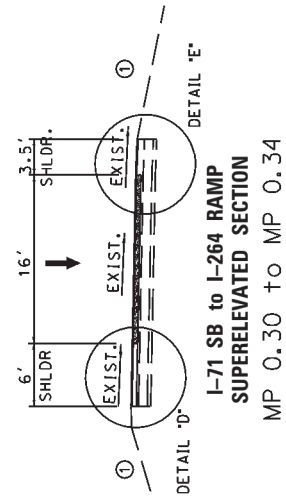
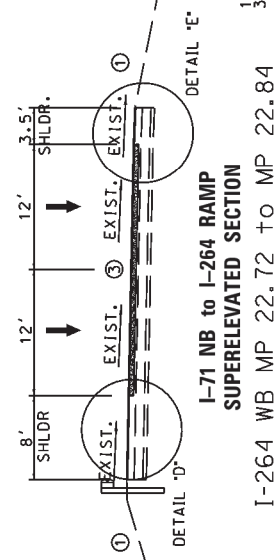
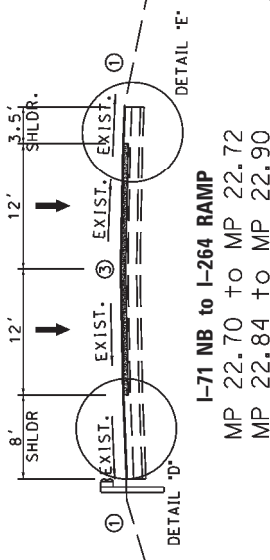
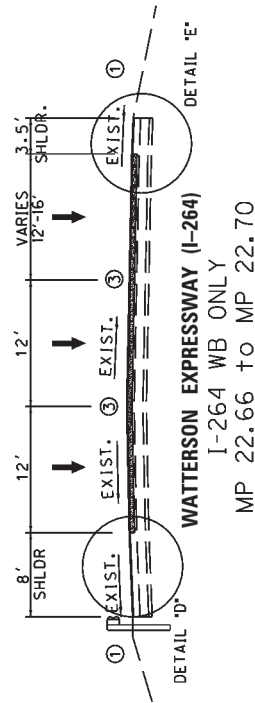
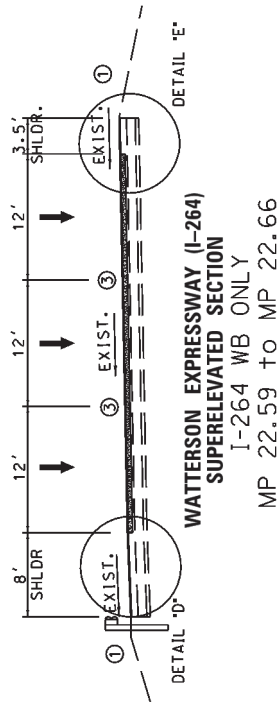
- ① Asphalt Seal required from outside edge of paved shoulder to a point 2 feet down the ditch or fill slope. Two applications of the following:
 - EMULSIFIED ASPHALT RS-2
 - ASPHALT SEAL AGGREGATE
- ② Apply Asphalt Material for Tack at a rate of 0.7 lbs/SY between each lift of asphalt.
- ③ Joint Adhesive
- ④ Level and Wedging to be used as directed by the engineer for pavement irregularities.

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-20017	

I-264 (WATTERSON EXPRESSWAY)
RESURFACING
TYPICAL SECTIONS

TYPICAL SECTION DETAILS

- NOT TO SCALE -



no scale

COUNTY OF	ITEM NO.	SHEET NO.
JEFFERSON	5-20017	

- Asphalt Seal required from outside edge of paved shoulder to a point 2 feet down the ditch or fill slope. Two applications of the following:
EMULSIFIED ASPHALT RS-2
ASPHALT SEAL AGGREGATE
2.40 LB/50 YD
20 LB/50 YD (size no. 8 or 9M)
- Apply Asphalt Material for Tack at a rate of 0.7 lbs/SY between each lift of asphalt.
- Joint Adhesive
- Level and Wedging to be used as directed by the engineer for pavement irregularities.

RESURFACE WATTERSON EXPRESSWAY (I-264)

MAINLINE TRAFFIC LANES & RAMP LANES
ASPHALT PAVEMENT MILLING AND TEXTURING
CL4 ASPH BASE 1.50D PG76-22
CL4 ASPH SURF 0.38A PG76-22

4 1/2" depth
3" depth
1 1/2" depth

SHOULDERS
ASPHALT PAVEMENT MILLING AND TEXTURING
CL4 ASPH SURF 0.38A PG76-22

1 1/2" depth
1 1/2" depth


I-264 (WATTERSON EXPRESSWAY)
RESURFACING
TYPICAL SECTIONS

GENERAL SUMMARY						
ITEM	DESCRIPTION	UNIT	SHEET 1	SHEET 2	TOTAL PROJECT	
02677	ASPHALT PAVE MILLING & TEXTURING	TON	11422	2006	13428	
00342	CL4 ASPH SURF 0.38A PG76-22	TON	4945	827	5772	
00210	CL4 ASPH BASE 1.50D PG76-22	TON	6477	1179	7656	
00194	LEVELING & WEDGING PG76-22	TON	238	50	288	
00103	ASPHALT SEAL COAT	TON	0	5	5	
00100	ASPHALT SEAL AGGREGATE	TON	0	45	45	
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	TON	42	7	49	
02726	STAKING	LS	1	-	1	
02650	MAINTAIN & CONTROL TRAFFIC	LS	1	-	1	
02676	MOBILIZATION FOR MILL & TEXT	LS	1	-	1	
06511	PAVE STRIPING-TEMP PAINT-6 IN	LF	10000	-	10000	
06542	PAVE STRIPING-THERMO-6 IN W	LF	2497	2480	4977	
06543	PAVE STRIPING-THERMO-6 IN Y	LF	8812	2222	11034	
06546	PAVE STRIPING-THERMO-12 IN W	LF	3900	602	4502	
23261EC	PAVE MARK-THERMO-X-WALK-24 IN	LF	100	0	100	
06568	PAVE MARKING-THERMO STOP BAR-24IN	LF	116	0	116	
06565	PAVE MARKING-THERMO X-WALK-6 IN	LF	584	0	584	
22520EN	PAVE MARKING-THERMO YIELD BAR-36 IN	LF	62	0	62	
26240EC	PAVE STRIPE-WET REF CONT TAPE-6 IN W	LF	1424	0	1424	
26241EC	PAVE STRIPE-WET REF CONT TAPE-6 IN Y	LF	712	0	712	
24679ED	PAVE MARK THERMO CHEVRON	SQFT	900	0	900	
24689EC	PAVE MARK THERMO-WRONG WAY ARROW	EACH	7	0	7	
24899EC	PAVE MARKING-THERMO ELONG ROUTE SHIELD	EACH	8	0	8	
06574	PAVE MARKING-THERMO CURV ARROW	EACH	30	0	30	
06575	PAVE MARKING-THERMO COMB ARROW	EACH	4	0	4	
23607EC	PAVE MARK THERMO-LANE REDUCTION ARROW	EACH	5	0	5	
26146ES717	PAVE MARK TY 1 TAPE LANE REDUCTION ARROW	EACH	1	0	1	
06575	PAVE MARKING-THERMO COMB ARROW-LANE USE ARROW	EACH	2	0	2	
06613	INLAID PAVEMENT MARKER-B W/R	EACH	276	50	326	
06614	INLAID PAVEMENT MARKER-B Y/R	EACH	44	0	44	
0600	REMOVE PAVEMENT MARKER TYPE V	EACH	320	50	370	
20071EC	JOINT ADHESIVE	LF	30600	5200	35800	
02585	EDGE KEY	LF	0	38	38	
03299	ARMORED EDGE FOR CONCRETE	LF	256	0	256	
08472	EXPANSION DAM-4 IN NEOPRENE	LF	256	0	256	
02568	MOBILIZATION	LS	1	-	1	

PAVING SUMMARY						
ITEM CODE	ITEM	UNIT	SHEET 1	SHEET 2	TOTAL PROJECT	
02677	ASPHALT PAVE MILLING & TEXTURING	TON	11422	2006	13428	
00342	CL4 ASPH SURF 0.38A PG76-22	TON	4945	827	5772	
00210	CL4 ASPH BASE 1.50D PG76-22	TON	6477	1179	7656	
00194	LEVELING & WEDGING PG76-22	TON	288	-	288	
00103	ASPHALT SEAL COAT	TON	0	5	5	
00100	ASPHALT SEAL AGGREGATE	TON	0	45	45	
24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	TON	42	7	49	

PAVING AREA				
ITEM CODE	ITEM	SHEET 1	SHEET 2	SQUARE YARDS
				Total
02677	ASPHALT PAVE MILLING & TEXTURING	99197	17169	116366
00342	CL4 ASPH SURF 0.38A PG76-22	59944	10025	69969
00210	CL4 ASPH BASE 1.50D PG76-22	39253	7144	46397
00100	ASPHALT SEAL AGGREGATE	0	2265	2265
00103	ASPHALT SEAL COAT	0	2265	2265

MILL DEPTHS AND SURFACING DEPTHS SHOWN IN THE PLANS ARE AVERAGES. CONSIDER THOSE DIMENSIONS FOR PAVEMENT THICKNESSES TO BE NOMINAL OR TYPICAL DIMENSIONS. IN ADDITION TO LEVELING OR WEDGING, THE ENGINEER MAY DIRECT OR APPROVE VARYING THE ACTUAL DIMENSIONS TO BE CONSTRUCTED TO FIT EXISTING CONDITIONS.

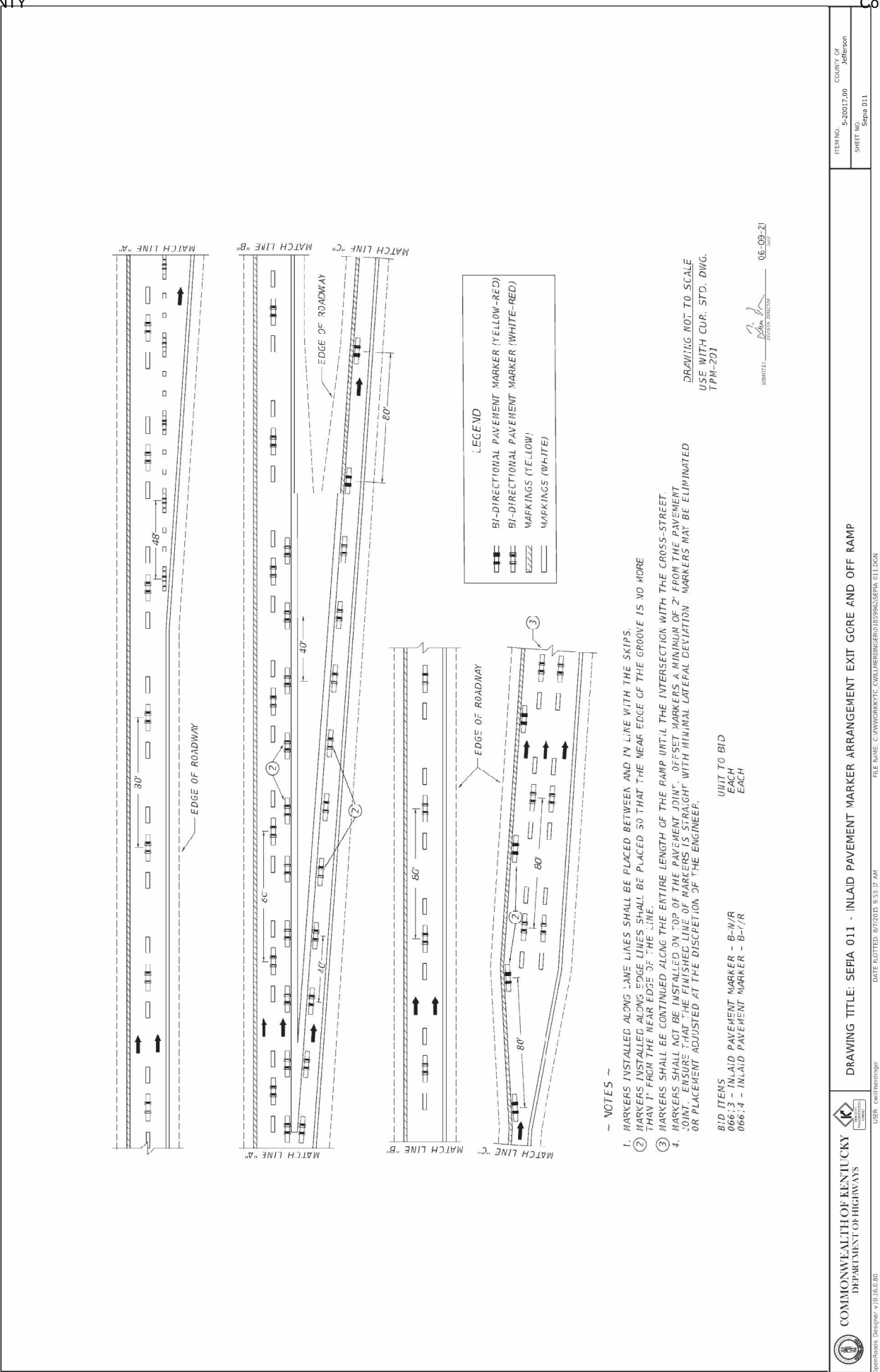
DRAWING TITLE: GENERAL SUMMARY & QUANTITIES			Page 3 of 3	
	COMMONWEALTH OF KENTUCKY	TEAM KENTUCKY	ITEM NO.	COUNTY OF
	DEPARTMENT OF HIGHWAYS	TRANSPORTATION	5-20017	JEFFERSON
			SHEET NO.	General Summary

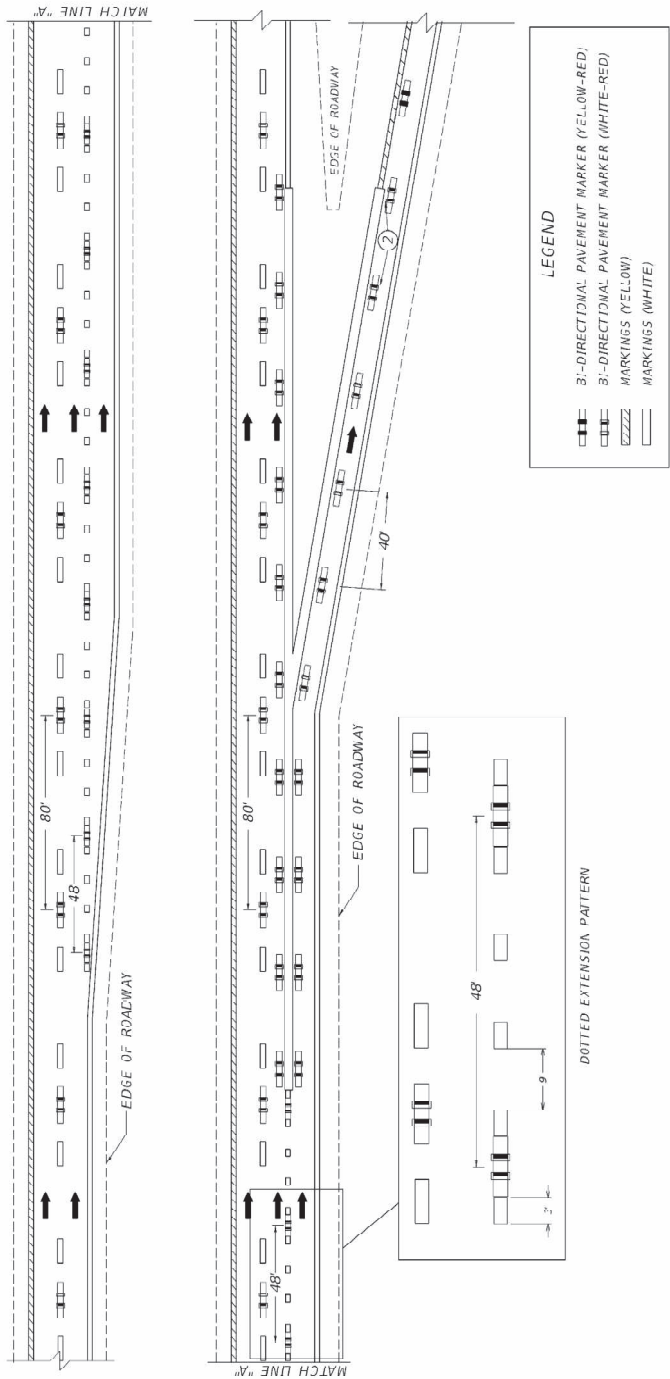


- ~ NOTES ~
1. MARKERS INSTALLED WITH DOUBLE YELLOW CENTERLINES SHOULD BE PLACED BETWEEN THE TWO LINES.
 2. MARKERS INSTALLED ALONG LANE LINES SHOULD BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
 3. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.
 4. MARKERS SHALL BE INSTALLED AT 40' SPACING ALONG SOLID WHITE AUXILIARY LINES. MARKER COLOR SHALL MATCH THE MARKERS INSTALLED ALONG THE WHITE LANE LINES.
- EID ITEMS UNIT TO BID
- | | |
|-------------------------------------------|--|
| 06610 - IN-LANE PAVEMENT MARKER - MW EACH | |
| 06612 - IN-LANE PAVEMENT MARKER - BW EACH | |

DRAWING NOT TO SCALE

 COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS	 C. WILLIAMS PROFESSIONAL ENGINEER LICENSE NO. 10001	DRAWING TITLE: SEPA 006 - INLAID PAVEMENT MARKER ARRANGEMENTS MULTI-LANE ROADWAYS		ITEM NO. 5-20017.00 COUNTY OF Jefferson SHEET NO. SEPA 006
		FILE NAME: C:\WORK\KRYTC_CWILLIAMS\ENR\018497A\SEPA 006.DGN DATE PLOTTED: 8/7/2005 9:53:17 AM USER: cwilliams@engr.com		





- ~ NOTES ~
1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.
 2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
 3. MARKERS SHALL BE CONTINUED ALONG THE ENTIRE LENGTH OF THE RAMP UNTIL THE INTERSECTION WITH THE CROSS-STREET.
 4. ON TWO-LANE, TWO-WAY HIGHWAYS, MARKERS INSTALLED ALONG GORE MARKINGS SHALL BE NON-DIRECTIONAL (WHITE).
 5. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2' FROM THE PAVEMENT JOINT. MARKERS AT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED AT THE DISCRETION OF THE ENGINEER.
 5. MARKERS INSTALLED ALONG THE RAMP EDGELINE SHALL BE SPACED AT 80' INTERVALS.
- BID ITEMS
06613 - INLAID PAVEMENT MARKER - B-W/R
06614 - INLAID PAVEMENT MARKER - B-Y/R
UNIT TO BID
EACH
EACH

DRAWING NOT TO SCALE

SUBMITTED *[Signature]* 05-05-21
DATE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

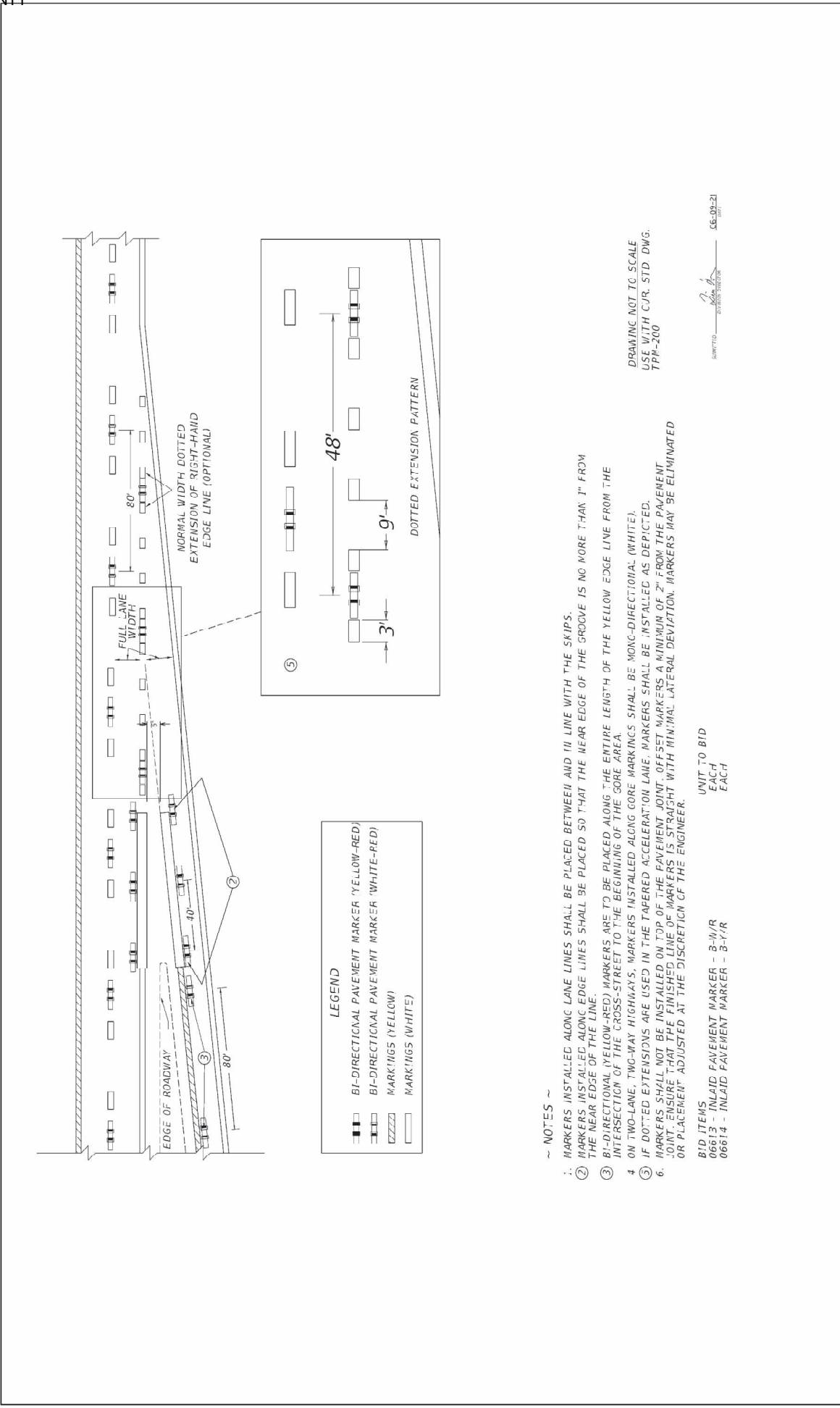
DATE NOTED: 8/17/2015 9:53:17 AM
USER: cwt/ncw/engr

DRAWING TITLE: SEPIA 012 - INLAID PAVEMENT MARKER ARRANGEMENT FOR PARALLEL DECELERATION LANE

FILE NAME: C:\PWG\KNTC_CWILLIAMS\ENR\03599AS\SEPIA012.DGN

ITEM NO. 5-20017.00
COUNTY OF Jefferson

SHEET NO. 012
SEPIA 012



~ NOTES ~

1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN II AND III LINE WITH THE SKIPS.
2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.
3. BI-DIRECTIONAL (YELLOW-RED) MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE YELLOW EDGE LINE FROM THE INTERSECTION OF THE CROSS-STREET TO THE BEGINNING OF THE GORE AREA.
4. ON TWO-LANE, TWO-WAY HIGHWAYS, MARKERS INSTALLED ALONG GORE MARKINGS SHALL BE MONO-DIRECTIONAL (WHITE).
5. IF DOTTED EXTENSIONS ARE USED IN THE TAPERED ACCELERATION LANE, MARKERS SHALL BE INSTALLED AS DEPICTED.
6. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACED AT THE DISCRETION OF THE ENGINEER.

BID. ITEMS
06613 - INLAID PAVEMENT MARKER - 3-1/2" R
06614 - INLAID PAVEMENT MARKER - 3-1/2" R
UNIT TO BID
EACH
EACH

DRAWING NOT TO SCALE
USE WITH C.J.R. STD. DWG.
TYP-200

SUBMIT TO: *[Signature]* 06-09-21
DATE



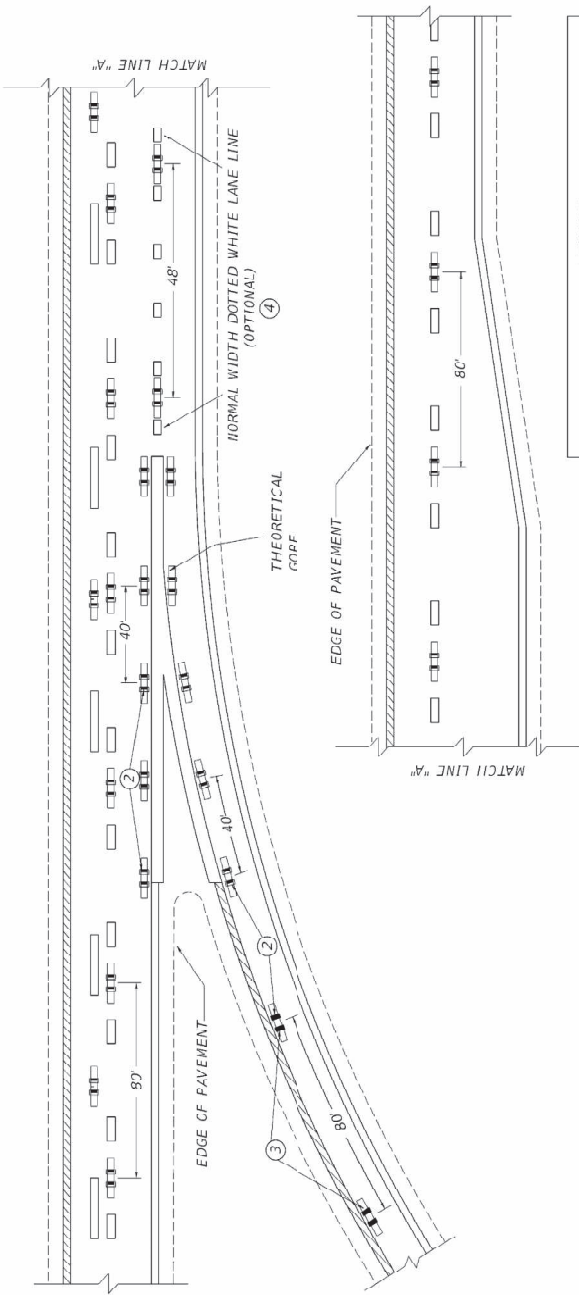
COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

DATE PLOTTED: 8/10/2015 9:53:17 AM

FILE NAME: C:\PW\WORK\KTC_C\ILLUSTRATIONS\SEP013.DGN

DRAWING TITLE: SEP13 - INLAID PAVEMENT MARKER ARRANGEMENT ON-RAMP WITH TAPERED ACCELERATION LANE

ITEM NO.	COUNTY OF
5-20017.00	Jefferson
SHEET NO.	SEPA013



LEGEND

BI-DIRECTIONAL PAVEMENT MARKER (YELLOW-RED)

BI-DIRECTIONAL PAVEMENT MARKER (WHITE-RED)

MARKINGS (YELLOW)

MARKINGS (WHITE)

DRAWING NOT TO SCALE
USE WITH CUR. STD. DWG.
TFN-200

SUBMITTED:
DATE: 06-05-21

- ~ NOTES ~
1. MARKERS INSTALLED ALONG LANE LINES SHALL BE PLACED BETWEEN AND IN LINE WITH THE SKIPS.

2. MARKERS INSTALLED ALONG EDGE LINES SHALL BE PLACED SO THAT THE NEAR EDGE OF THE GROOVE IS NO MORE THAN 1" FROM THE NEAR EDGE OF THE LINE.

3. BI-DIRECTIONAL (YELLOW-RED) MARKERS ARE TO BE PLACED ALONG THE ENTIRE LENGTH OF THE YELLOW EDGE LINE FROM THE INTERSECTION OF THE CROSS-STREET TO THE BEGINNING OF THE CORE AREA.

4. IF DOTTED EXTENSIONS ARE USED IN THE TAPERED ACCELERATION LANE, MARKERS SHALL BE INSTALLED AS DEPICTED.

5. MARKERS SHALL NOT BE INSTALLED ON TOP OF THE PAVEMENT JOINT. OFFSET MARKERS A MINIMUM OF 2" FROM THE PAVEMENT JOINT. ENSURE THAT THE FINISHED LINE OF MARKERS IS STRAIGHT WITH MINIMAL LATERAL DEVIATION. MARKERS MAY BE ELIMINATED OR PLACEMENT ADJUSTED AT THE DISCRETION OF THE ENGINEER.

6. THE NORMAL WIDTH DOTTED WHITE LANE LINE SHALL EXTEND FOR AT LEAST HALF THE LENGTH OF THE FULL-WIDTH ACCELERATION LANE PLUS TAPER MEASURED FROM THE THEORETICAL CORNF.

7. B/D ITEMS AND UNIT TO B/D.

8. INLAD PAVEMENT MARKER (B-W/R, B-Y/R, BY, MW, WY) EACH

ITEM NO.	COUNTY OF
5-20017.00	Jefferson
SHEET NO.	
SEPA 014	

DRAWING TITLE: SEPA 014 - INLAD PAVEMENT MARKER ARRANGEMENT ON-RAMP WITH PARALLEL ACCELERATION LANE

COMMONWEALTH OF KENTUCKY
DEPARTMENT OF HIGHWAYS

FILE NAME: C:\PWORK\KTC_C\WILLIAMS\KTC\03599\SEPA014.DGN

DATE PLOTTED: 8/10/2015 9:53:17 AM

USER: cwilliams

OpenRoads Designer V10.16.0.80

**TRAFFIC CONTROL PLAN
JEFFERSON COUNTY
I-264
NHPM 264 1090
FD52 056 0264 021-023
Item No. 5-20017**

<p>THIS PROJECT IS A FULLY CONTROLLED ACCESS HIGHWAY</p>

TRAFFIC CONTROL GENERAL

The contractor is to be advised that this work is to be constructed along with the I-264 widening and US 42 interchange reconstruction project, known as Item 5-804.00. The contractor shall coordinate activities of this project as an extension of activities on Item 5-804.00.

Except as provided herein, "Maintain and Control Traffic" shall be in accordance with the Standard Specifications and the Standard Drawings, and the Manual on Uniform Traffic Control Devices (MUTCD), current editions at the time of letting. Except for the roadway and traffic control bid items listed, all items of work necessary to maintain and control traffic will be paid at the lump sum bid price to "Maintain and Control Traffic". All lane closures used on the Project will be in compliance with the appropriate Standard Drawings.

Reduce the speed limit in work areas to 45 miles per hour (35 miles per hour for ramps if applicable).

ASPHALT RESURFACING FOR THE PROJECT ALONG WITH PERMANENT STRIPING SHALL BE COMPLETED THE FINAL PHASE OF THE 5-804 PROJECT. THIS WORK SHALL BE PERFORMED USING MOVABLE LANE CLOSURE OPERATIONS AND SHALL BE PERFORMED DURING PERIODS OF LOW TRAFFIC FLOW OR AT TIMES APPROVED BY THE ENGINEER. TEMPORARY STRIPING SHALL BE PLACED AS NEEDED DURING THESE OPERATIONS AND AT ANY TIME WORK CEASES.

IN GENERAL, ALL WORK ZONES ALONG I-264 SHALL BE SIGNED FOR DOUBLE FINES.

ANY TEMPORARY TRAFFIC CONTROL ITEMS, DEVICES, MATERIALS AND INCIDENTALS SHALL REMAIN THE PROPERTY OF THE CONTRACTOR, UNLESS OTHERWISE ADDRESSED, WHEN NO LONGER NEEDED.

THE CONTRACTOR SHALL COMPLETELY COVER ANY SIGNS, EITHER EXISTING, PERMANENT, OR TEMPORARY WHICH DO NOT PROPERLY APPLY TO THE CURRENT TRAFFIC PHASING, AND SHALL MAINTAIN THE COVERING UNTIL THE SIGNS ARE APPLICABLE OR ARE REMOVED. THE CONTRACTOR MAY RELOCATE ANY EXISTING SIGN DISTURBED BY ACTIVE CONSTRUCTION, WHICH REMAINS APPLICABLE WHILE CONSTRUCTION IS OCCURRING, TO A LOCATION AS APPROVED BY THE ENGINEER.

IN GENERAL, ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED STARTING AND PROCEEDING IN THE DIRECTION OF THE FLOW OF TRAFFIC AND REMOVED STARTING AND PROCEEDING IN THE DIRECTION OPPOSITE TO THE FLOW OF TRAFFIC. TRAFFIC CONTROL DEVICES SHALL BE MOVED DURING CONSTRUCTION ACTIVITIES TO ACCOMMODATE THE GREATEST LANE WIDTH ALLOWABLE FOR ALL TRAVEL LANES.

IF THE CONTRACTOR DESIRES TO DEVIATE FROM THE TRAFFIC CONTROL SCHEME AND CONSTRUCTION SCHEDULE OUTLINED IN THESE PLANS AND THIS PROPOSAL, HE SHALL PREPARE AN ALTERNATE PLAN AND PRESENT IT IN WRITING TO THE ENGINEER. THIS ALTERNATE PLAN CAN BE USED ONLY AFTER REVIEW AND APPROVAL OF THE DIVISIONS OF TRAFFIC, DESIGN AND CONSTRUCTION, AND THE FEDERAL HIGHWAY ADMINISTRATION, WHERE APPLICABLE.

CONSTRUCTION OPERATIONS USING SHOULDER CLOSURES WILL BE ALLOWED DURING ALL DAYLIGHT HOURS (EXCEPT HOLIDAYS) PROVIDED ANY RESULTING TEMPORARY DROP-OFF CONDITIONS AND SIGNING REQUIREMENTS ARE ADEQUATELY ADDRESSED.

NO LANE CLOSURES WILL BE ALLOWED DURING THE OBSERVANCE OF ALL NATIONAL HOLIDAYS IDENTIFIED IN SECTION 101 OF THE KYTC DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION UNLESS APPROVED BY THE ENGINEER. UNDER SPECIAL CIRCUMSTANCES, KYTC RESERVES THE RIGHT TO RESTRICT THE USE OF LANE CLOSURES DUE TO UNFORESEEN SPECIAL EVENTS.

ALL LANE CLOSURE RESTRICTIONS LISTED SHALL APPLY TO MAINLINE I-264 AND ALL APPROACHES, RAMPS, AND SIDE ROADS. ANY DEVIATION MUST BE PREAPPROVED BY THE ENGINEER.

PROJECT PHASING & CONSTRUCTION PROCEDURES

Maintain a minimum of two lanes of mainline I-264 and ramp traffic open each direction of travel at all times except traffic may be reduced to one lane during times of expected low traffic volumes, and at the discretion of the engineer.

Reduction of mainline I-264 and ramp traffic to one lane will **NOT** be allowed on the project during the following days and times, unless otherwise approved by the Engineer:

RESTRICTED HOLIDAY AND EVENT DATES	
(2025)	
THUNDER OVER LOUISVILLE	6:00AM FRI, APR 11 – 6:00AM MON, APR 14
EASTER	6:00AM FRI, APR 18 - 6:00AM MON, APR 21
KENTUCKY DERBY	6:00AM FRI, APR 25 - 6:00 AM MON, MAY 3
MEMORIAL DAY	6:00AM FRI, MAY 23 - 6:00AM TUES, MAY 27
JULY 4 TH	6:00AM TUES, JUL 1 - 6:00AM MON, JULY 7
LABOR DAY	6:00AM FRI, AUG 29 - 6:00AM TUES, SEPT 2
BOURBON AND BEYOND	6:00AM THURS, SEPT 1 - 6:00AM MON, SEPT 15
LOUDER THAN LIFE	6:00AM THURS, SEPT 18 - 6:00AM MON, SEPT 22
THANKSGIVING	6:00AM WED, NOV 26 - 6:00AM MON, DEC 1
CHRISTMAS/NEW YEARS	6:00AM FRI, DEC 19 - 6:00AM FRI, JAN 3

FUTURE HOLIDAY DATES SHALL BE DETERMINED BY THE DEPARTMENT IF NECESSARY, COMPARABLE TO ABOVE DATES. THE ABOVE DATES ARE SUBJECT TO CHANGE IF THE DEPARTMENT DEEMS NECESSARY.

IF CONSTRUCTION ADJACENT TO THE TRAVELED WAY IS NOT COMPLETED DURING A PERIOD ALLOWING LANE CLOSURES, THEN THE LANE CLOSURE MUST BE REMOVED. LANE CLOSURES SHALL NOT BE LEFT IN PLACE DURING NON-WORKING HOURS

ADDITIONALLY, LIQUIDATED DAMAGES WILL BE CHARGED FOR EACH HOUR OR PORTION OF AN HOUR THAT A MAINLINE I-264 LANE CLOSURE, THAT REDUCES TRAFFIC TO ONE LANE, IS IN PLACE DURING TIMES RESTRICTED IN THE PROJECT PHASING AND CONSTRUCTION PROCEDURES. FOR THE FIRST HOUR THAT TRAFFIC IS REDUCED TO ONE LANE DURING TIMES PROHIBITED IN THE PROJECT PHASING AND CONSTRUCTION PROCEDURES, A PENALTY OF \$7,500 WILL BE ASSESSED FOR THE FIRST 15 MINUTES TRAFFIC IS REDUCED TO ONE LANE, AN ADDITIONAL PENALTY OF \$2,500 WILL BE ASSESSED FOR THE SECOND 15 MINUTES TRAFFIC IS REDUCED TO ONE LANE, AN ADDITIONAL PENALTY OF \$2,500 WILL BE ASSESSED FOR THE 3RD 15 MINUTES TRAFFIC IS REDUCED TO ONE LANE, AND AN ADDITIONAL PENALTY OF \$2,500 WILL BE ASSESSED FOR THE FINAL 15 MINUTES OF THE FIRST HOUR TRAFFIC IS REDUCED TO ONE LANE. A PENALTY OF \$7,500 \$PER HOUR, PER LANE CLOSURE, WILL BE ASSESSED FOR THE SECOND HOUR, OR PORTION OF AN HOUR, AND ALL SUCCESSIVE HOURS, OR PORTION OF AN HOUR, THAT TRAFFIC IS REDUCED TO ONE LANE DURING TIMES PROHIBITED IN THE PROJECT PHASING AND CONSTRUCTION PROCEDURES.

THE CONTRACTOR IS CAUTIONED THAT THE ENGINEER MAY, WITH A MINIMUM OF 48 HOURS WRITTEN NOTICE, PROHIBIT LANE CLOSURES ON HOLIDAYS OR OTHER SPECIAL DAYS WHEN THE LANE CLOSURES WILL BE DETRIMENTAL TO THE FLOW OF TRAFFIC.

PAVEMENT MARKINGS SHALL BE REMOVED BY ULTRA-HIGH PRESSURE WATER BLASTING IN ACCORDANCE WITH SECTION 713.03.04 OF THE KYTC STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (CURRENT EDITION).

THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE BRIDGE IF ANY DAMAGE OCCURS TO THE BRIDGE DECK DURING CONSTRUCTION. THE BRIDGE DECK SHALL REMAIN IN GOOD CONDITION. EXTRA PAYMENT WILL NOT BE MADE TO REPAIR MAJOR DAMAGE TO THE BRIDGE.

IF TRAFFIC SHOULD BE STOPPED DUE TO CONSTRUCTION OPERATIONS AND AN EMERGENCY VEHICLE ON AN OFFICIAL EMERGENCY RUN ARRIVES AT THE SCENE, THE CONTRACTOR SHALL MAKE PROVISIONS FOR THE PASSAGE OF THAT VEHICLE AS QUICKLY AS POSSIBLE.

A MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED ON ALL ROADWAYS WITHIN THE PROJECT LIMITS AT ALL TIMES UNLESS OTHERWISE NOTED IN THE MAINTENANCE OF TRAFFIC PLAN AND/OR APPROVED BY THE ENGINEER.

THE CONTRACTOR SHALL DESIGNATE AN EMPLOYEE OR EMPLOYEES TO BE TRAFFIC COORDINATOR(S). THE TRAFFIC COORDINATOR SHALL INSPECT THE PROJECT MAINTENANCE OF TRAFFIC AT LEAST ONCE A DAY, MONDAY THROUGH FRIDAY, AND TWICE A DAY (MORNING AND EVENING) SATURDAY AND SUNDAY, FOR THE LIFE OF THE PROJECT. ADDITIONALLY, THE TRAFFIC COORDINATOR SHALL REPORT ALL INCIDENTS THROUGHOUT THE WORK ZONE TO THE ENGINEER ON THE PROJECT. A TRAFFIC COORDINATOR SHALL BE ON THE PROJECT AT ALL TIMES WHEN LANE CLOSURES ARE IN USE TO INSPECT THE TRAFFIC CONTROL, MAINTAIN THE SIGNING AND DEVICES AND RELOCATE VARIABLE MESSAGE BOARDS AS NEEDED OR AS DIRECTED BY THE ENGINEER. A TRAFFIC COORDINATOR SHALL BE ON CALL 24 HOURS A DAY, 7 DAYS A WEEK FOR THE PROJECT DURATION. THE TRAFFIC COORDINATOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL MAINTENANCE AND SHALL MAKE AT LEAST ONE PASS-THROUGH INSPECTION ON THE PROJECT PER HOUR AT ALL TIMES LANES ARE CLOSED. THE CONTRACTOR SHALL FURNISH THE NAME AND TELEPHONE NUMBER WHERE THE TRAFFIC COORDINATOR CAN BE CONTACTED AT ANY TIME. THE TRAFFIC COORDINATOR SHALL HAVE ACCESS ON THE PROJECT TO A RADIO OR TELEPHONE TO BE USED IN CASE OF EMERGENCIES OR ACCIDENTS.

Note: In the event that traffic backups reach an unacceptable level, the days and hours of allowable single lane traffic may be modified by the Cabinet.

Failure to maintain 2 lanes of travel per direction on mainline I-264 during dates and times listed above, will result in penalties as described in the Special Note for Fixed Completion Dated and Liquidated Damages.

ASPHALT SURFACING FOR THE PROJECT ALONG WITH PERMANENT STRIPING SHALL BE COMPLETED DURING THE FINAL PHASE OF THE 5-804 PROJECT. THIS WORK SHALL BE PERFORMED USING MOVABLE LANE CLOSURE OPERATIONS AND SHALL BE PERFORMED DURING PERIODS OF LOW TRAFFIC FLOW OR AT TIMES APPROVED BY THE ENGINEER. TEMPORARY STRIPING SHALL BE PLACED AS NEEDED DURING THESE OPERATIONS AND AT ANY TIME WORK CEASES.

I-264
Jefferson County
NHPM 264 1090
FD52 056 0264 021-023
Item No. 5-20017
M.P. 20.590 TO M.P. 21.280 E.B. & M.P. 20.560 TO M.P. 21.020
W.B. & M.P. 22.590 TO M.P. 22.890 W.B.

THIS PROJECT IS A FULLY CONTROLLED ACCESS HIGHWAY

I. DESCRIPTION

Perform all work in accordance with the Department's 2019 Standard Specifications, Supplemental Specifications, Applicable Special Provisions, and Applicable Standard and Sepia Drawings current edition at letting date, except as hereafter specified. Article references are to the Standard Specifications. Furnish all materials, labor, equipment, and incidentals for the following work:

- (1) Maintain and Control Traffic; (2) Asphalt Milling and Texturing and Paving; (3) Pavement Markers and Markings; and (4) All other work specified as part of this contract.

II. MATERIALS

Except as specified in these notes or on the drawings, all materials will be according to the Standard Specifications and applicable Special Provisions and Special Notes. The Department will sample and test all materials according to Department's Sampling Manual and the Contractor will have the materials available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing, unless otherwise specified in these notes.

- A. **Maintain and Control Traffic.** See Traffic Control Plan Project 5-804.00.
- B. **Pavement Markings -6 inch.** Permanent striping will be extruded thermoplastic markings for asphalt surfaces and will be durable type 1 tape for concrete surfaces in accordance with Section 714 of the Specifications.
- C. **Joint Adhesive.** See "Special Note for Longitudinal Pavement Joint Adhesive"
- D. **Asphalt Material for Tack Non-Tracking.** See Special Note for Non-Tracking Tack Coat.

III. CONSTRUCTION METHODS

- A. **Maintain and Control Traffic.** See Traffic Control Plan Project 5-804.00.
- B. **Site Preparation.** Be responsible for all site preparation. Do not disturb existing signs. This item will include, but is not limited to, incidental excavation and

backfilling; removal of all obstructions or any other items; disposal of materials; sweeping and removal of debris; shoulder preparation and restoration; and all incidentals. Site preparation will be only as approved or directed by the Engineer.

- C. **Disposal of Waste.** Dispose of all cuttings, debris, and other waste off the right-of-way at approved sites obtained by the Contractor. The contractor will be responsible for obtaining any necessary permits for this work. Temporary openings in the right of way fence for direct access to waste sites off the right of way or for access to other public roads will not be allowed. No separate payment will be made for obtaining the necessary permits but will be incidental to the other items of the work. Disposal of existing cuttings and brush shall adhere to Section 202 of the current Standard Specifications.
- D. **Pavement Striping and Pavement Markers.** Pavement striping will be in accordance with Section 112 for temporary striping, and Section 714 for Thermoplastic Markings, except that:
 - (1). Striping will be 6" in width.
 - (2). Permanent striping or temporary striping will be in place before a lane is opened to traffic.
 - (3). Permanent Pavement Markers shall be installed per Sepia 7, Sepia 11, Sepia 12, Sepia 13, and Sepia 14.
- E. **On-Site Inspection.** In accordance with section 102.06, each Contractor submitting a bid for this work will make a thorough inspection of the site prior to submitting a bid and will thoroughly familiarize himself with existing conditions so that the work can be expeditiously performed after a contract is awarded. Submission of a bid will be considered evidence of this inspection having been made. Any claims resulting from site conditions will not be honored by the Department.
- F. **Caution:** Information shown on the drawings and in this proposal and the types and quantities of work listed are not to be taken as an accurate or complete evaluation of the material and conditions to be encountered during construction. The bidder must draw his own conclusions as to the conditions encountered. The Department does not give any guarantee as to the accuracy of the data and no claim will be considered for additional compensation if the conditions encountered are not in accordance with the information above.
- G. **Utility Clearance.** It is not anticipated that utility facilities will need to be relocated and/or adjusted; however, in the event it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities.
- H. **Joint Adhesive.** See "Special Note for Longitudinal Pavement Joint Adhesive".
- I. **Asphalt Pave Milling & Texturing.** See Special Note for Asphalt Milling and Texturing.
- J. **Asphalt Material for Tack Non-Tracking.** See Special Note for Non-Tracking Tack Coat.

IV. METHOD OF MEASUREMENT

- A. **Maintain and Control Traffic.** See Traffic Control Plan Project 5-804.00. Only the bid items listed will be measured for payment. No measurement or payment for striping removal or removal or covering of existing pavement marker lenses will be made and will be considered incidental to “Maintain and Control Traffic”. Maintenance and repairs of damages to shoulders caused by the inadvertent application of traffic, will be measured, and paid by the individual contract bid items used to perform the repairs. No additional Maintenance of Traffic, Mobilization, or other items will be considered for measurement or payment for repairs to pavements necessary to maintain traffic.
- B. **Site Preparation.** Other than the bid items listed, site preparation will not be measured for payment, but will be incidental to the other items of work.
- C. **Erosion Control.** No direct measurement or payment will be made for temporary or permanent erosion control measures and will be considered incidental to other items of work.
- D. **Joint Adhesive.** See “Special Note for Longitudinal Pavement Joint Adhesive”.
- E. **Pavement Markers Removal.** No direct payment will be made for the removal of the existing pavement markers prior to the milling operation and shall be considered incidental to milling and texturing or fine milling.
- F. **Temporary Striping.** In accordance with the Specifications, temporary striping placed on final asphalt surface courses used as an interim marking and prior to placement of the final pavement markings will not be measured for payment.
- G. **Asphalt Material for Tack Non-Tracking.** See Special Note for Non-Tracking Tack Coat.

V. BASIS OF PAYMENT

No direct payment will be made other than for the bid items listed. All other items required to complete the construction will be incidental to the bid items listed. Existing signs damaged by the Contractor will be replaced by the Contractor at his expense. Payment will be made in accordance with the KYTC Standard Specifications, current edition with supplemental specifications and current Standard Drawings unless otherwise specified herein.

- A. **Maintain and Control Traffic.** See Traffic Control Plan Project 5-804.00.
- B. **Site Preparation.** Other than the bid items listed, no direct payment will be allowed for site preparation, but will be incidental to the other items of work.
- C. **Pavement Marker Removal.** No direct payment will be made for the removal of the existing pavement markers prior to the milling operation and shall be considered incidental to milling and texturing and fine milling.
- D. **Lane Closures.** Contrary to Section 112, lane closures will not be measured for payment but will be incidental to the bid item “Maintain and Control Traffic”.

- E. **Joint Adhesive.** See “Special Note for Longitudinal Pavement Joint Adhesive”
- F. **Erosion Control.** No direct measurement or payment will be made for temporary or permanent erosion control measures and will be considered incidental to other items of work.
- G. **Temporary Striping.** In accordance with the Specifications, temporary striping placed on final asphalt surface courses used as an interim marking and prior to placement of the final pavement markings will not be measured for payment.
- H. **Asphalt Material for Tack Non-Tracking.** See Special Note for Non-Tracking Tack Coat.
- I. **Mobilization for Milling and Texturing.** In accordance with the Specifications, only 1 LS payment for Mobilization for Milling and Texturing will be made. No additional measurement or payment for Mobilization for Milling and Texturing will be made for the Fine Milling operation.
- J. **Barricade Type III.** No direct measurement or payment for Barricade Type III will be made and will be considered incidental to Maintain and Control Traffic.

I-264
Jefferson County
NHPM 264 1090
FD52 056 0264 021-023
Item No. 5-20017
M.P. 20.590 TO M.P. 21.280 E.B. & M.P. 20.560 TO M.P. 21.020
W.B. & M.P. 22.590 TO M.P. 22.890 W.B.

This project is intended to provide an intermediate thickness mill and inlay to provide a new mainline riding surface through the length of the project. Mainline pavement will be milled and inlaid with a 3.0" depth layer of asphalt base and 1.5" depth layer of asphalt surface. Shoulders will be milled and inlaid with 1.5" layer of asphalt surface full width.

1. The dimensions shown on the typical section for pavement and shoulder widths and thickness are nominal or typical dimensions. The actual dimensions to be constructed may be varied to fit existing conditions as directed or approved by the Engineer. It is not intended that existing pavement or shoulders be widened unless otherwise specified in the Proposal.
2. Due to required part width construction and multiple paving layers, the contractor is to use extreme care to ensure that cross slopes of pavements are not altered from the original cross slope, unless specifically directed by the engineer. The engineer reserves the right to direct the contractor to monitor cross slopes to restore crown in tangent sections, and/or restore original design cross slope in curves.
3. The contractor is to be advised of the locations of overhead utility wires on the project. The following locations are approximate:

Mile 20.620 WB
Mile 22.540 WB

Mile 20.650 EB
Mile 22.589 EB

CAUTION: Other overhead utility locations may exist. These and all other utilities should be avoided on this project. If any utility is impacted, it will be the contractor's responsibility to contact the affected utility and cover any costs associated with the impact.

4. The contractor is advised that the planned locations of work established by mile points are referenced from the Kentucky Transportation Cabinet's Official Route Log. The existing reference markers do not correspond to the established work locations. For reference, the locations of existing mile point signs are shown on the detail sheets which do not correspond to the stationing on the project.
5. If the contractor chooses to remove guardrail for access to a work site, the contractor shall temporarily reinstall the removed guardrail or install temporary guardrail at his own expense to remain in place until the guardrail replacement phase begins.

When practical to do so, offset the location of new guardrail posts to not be driven in the old post hole locations.

6. This project requires the use of a Material Transfer Vehicle. In accordance with Section A of 403.03.05.
7. The speed limit on the project will be reduced by 10 mph. Any time work is suspended the speed limit will revert to 55 mph. Also, double fine signs are set up in the project to be installed while workers are present in the work zone.
8. The contractor is to take care not to damage any existing roadway signs. Any roadway signs that are damaged during construction are to be replaced at the contractor's expense in accordance with section 105.08 of the standard specifications. Any signs encountered that require removal to perform the work must be stored in a covered building, protected from damage and reinstalled after completion of the work. Removal and re-installation of the signs will be considered incidental to other items of work.
9. Coordinate activities of any adjacent contracts with this contract. The engineer will decide the relative priority concerning phasing and maintenance of traffic when conflicts arise with projects in proximity with this project.
10. Protect and avoid any lighting equipment within the project limits. The contractor will be responsible for the cost of any repairs necessary caused by the contractor's operations.
11. The existing edge drain system is to be preserved. Any part of the edge drain system damaged during other construction activities will be replaced at the contractor's expense.
12. The contractor is to be advised that this work is to be constructed along with the I-264 widening and US 42 interchange reconstruction project, known as Item 5-804.00. The contractor shall coordinate activities of this project as an extension of activities on Item 5-804.00.

REFERENCES

1. Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, Edition of 2019.

2. FHWA Manual on Uniform Traffic Control Devices – 2009 Edition.

3. Kentucky Department of Highways Standard Drawings, Current Edition, as applicable:

RGS-002-06	SUPERELEVATION FOR MULTI-LANE PAVEMENT
RGX-001-06	MISCELLANEOUS STANDARDS
RPM-100-11	CURB AND GUTTER CURBS AND VALLEY GUTTER
TPM-170-01	FLEXIBLE DELINEATOR POST ARRANGEMENTS FOR HORIZONTAL CURVES
TPM-171-01	FLEXIBLE DELINEATOR POST ARRANGEMENTS FOR INTERCHANGE RAMPS AND CROSSEOVERS
TPM-200	TYPICAL ENTRANCE RAMP MARKINGS FOR INTERSTATES AND PARKWAYS
TPM -201	TYPICAL EXIT RAMP MARKINGS FOR INTERSTATES AND PARKWAYS
TPM-202	TYPICAL EXIT RAMP MARKINGS FOR INTERSTATES AND PARKWAYS
TPM-203	TYPICAL MARKINGS AT SIGNALIZED INTERSECTIONS
TPM-204	TYPICAL MARKINGS FOR GORE AREAS
TPM-205	TYPICAL MARKINGS FOR ISLANDS AND MEDIANS
TPM-206	TYPICAL MARKINGS FOR TURN LANES
TPR-130	RUMBLE STRIP DETAILS MULTI-LANE ROADWAYS AND RAMPS
TTC-115-04	LANE CLOSURE MULTI-LANE HIGHWAY CASE I
TTC-120-04	LANE CLOSURE MULTI-LANE HIGHWAY CASE II
TTC-135-03	SHOULDER CLOSURE
TTC-160-02	TEMPORARY PAVEMENT MARKER ARRANGEMENTS FOR LANE CLOSURES
TTD-120-03	DOUBLE FINES ZONE SIGNS
TTD-125-03	PAVEMENT CONDITION WARNING SIGNS
TTD-130	SPEED ZONE SIGNING FOR WORK ZONES
TTS-110-02	MOBILE OPERATION FOR PAINT STRIPING CASE III
TTS-115-02	MOBILE OPERATION FOR PAINT STRIPING CASE IV
TTS-120-02	MOBILE OPERATION FOR DURABLE STRIPING CASE 1

4. Kentucky Transportation Cabinet, Department of Highways, Standard Specifications for Road and Bridge Construction, Edition of 2019, Including - Supplemental Specifications, as applicable:

Special Note	Typical Section Dimensions <i>attached</i>
Special Note	Before You Dig <i>attached</i>
Special Note	Fixed Completion Date and Liquidated Damages <i>attached</i>
General Note	Asphalt Pavement Ride Quality (Cat A) <i>attached</i>
General Note	Compaction of Asphalt Mixtures (Option A) <i>attached</i>
Special Note	Asphalt Milling and Texturing <i>attached</i>
Special Note	Special Note for Significant Project <i>attached</i>
Special Note	Special Note for Longitudinal Pavement Joint Adhesive <i>attached</i>
Special Note	Special Note for Paver Mounted Temperature Profiles <i>attached</i>
Special Note	Special Note for Non-Tracking Tack Coat <i>attached</i>
Special Note	Special Note for Pavement Marking Modifications <i>attached</i>

SPECIAL NOTE FOR TYPICAL SECTION DIMENSIONS
I-264
JEFFERSON COUNTY
ITEM NO. 5-20017

The dimensions shown on the typical sections for pavement and shoulder widths are nominal or typical dimensions. The actual dimensions to be constructed may be varied to fit existing conditions as directed or approved by the Engineer. It is not intended that existing pavement or shoulders be widened or narrowed **EXCEPT** where specified elsewhere in the Proposal.

SPECIAL NOTE FOR BEFORE YOU DIG

**I-264
JEFFERSON COUNTY
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Call 1-800-752-6007 toll free a minimum of two and no more than ten business days prior to excavation for information on the location of existing under-ground utilities which subscribe to the before-u-dig (BUD) service. Coordinate excavation with all utility owners, including those who do not subscribe to BUD.

Rev 9/2021

SPECIAL NOTE FOR PAVER MOUNTED TEMPERATURE PROFILES

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction current edition.

1.0 DESCRIPTION. Provide a paver mounted infrared temperature equipment to continually monitor the temperature of the asphalt mat immediately behind all paver(s) during the placement operations for all mainline pavements (including ramps for Interstates and Parkways) within the project limits. Provide thermal profiles that include material temperature and measurement locations.

2.0 MATERIALS AND EQUIPMENT. In addition to the equipment specified in Subsection 403.02 Utilize a thermal equipment supplier that can provide a qualified representative for on-site technical assistance during the initial setup, pre-construction verification, and data management and processing as needed during the Project to maintain equipment within specifications and requirements.

Provide operator settings, user manuals, required viewing/export software for analysis. Ensure the temperature equipment will meet the following:

(A) A device with one or more infrared sensors that is capable of measuring in at least 1 foot intervals across the paving width, with a minimum width of 12 feet, or extending to the recording limits of the equipment, whichever is greater. A Maximum of two (2) brackets are allowed in the influence area under the sensors. A temperature profile must be made on at least 1 foot intervals longitudinally down the road:

(B) Infrared sensor(s):

(1) Measuring from 32°F to 400°F with an accuracy of $\pm 2.0\%$ of the sensor reading.

(C) Ability to measure the following:

(1) The placement distance using a Global Positioning System (GPS) or a Distance Measuring Instrument (DMI) and a Global Positioning System (GPS).

(2) Stationing

(D) GPS: Accuracy ± 4 feet in the X and Y Direction

(E) Latest version of software to collect, display, retain and analyze the mat temperature readings during placement. The software must have the ability to create and analyze:

(1) Full collected width of the thermal profiles,

(2) Paver speed and

(3) Paver stops and duration for the entire Project.

(F) Ability to export data automatically to a remote data server ("the cloud").

At the preconstruction meeting, provide the Cabinet with rights to allow for web access to the data file location. Access to the data is not to be hindered in any way. The Contractor will provide the Cabinet with any vendor specific software, user id, passwords, etc. needed to access the data through this service, cost of this access is incidental to the thermal profile bid item. The Cabinet is to have access to all data as it is being collected. If a third party is used for collecting and distributing the data the Cabinet is to have the same access rights and time as the Contractor.

This web-based software must also provide the Department with the ability to download the raw files and software and to convert them into the correct format.

(G) The thermal profile data files must provide the following data in a neat easy to read table format.

(1) Project information including Road Name and Number, PCN, Beginning and Ending MPs.

(2) IR Bar Manufacturer and Model number

(3) Number of Temperature Sensors (N)

(4) Spacing between sensors and height of sensors above the asphalt mat

(5) Total number of individual records taken each day (DATA BLOCK)

- (a) Date and Time reading taken

(b) Latitude and Longitude

(c) Distance paver has moved from last test location

(d) Direction and speed of the paver

(e) Surface temperature of each of the sensors
- 3.0 CONSTRUCTION. Provide the Engineer with all required documentation at the pre-construction conference.
- (A) Install and operate equipment in accordance with the manufacturer’s specifications.

(B) Verify that the temperature sensors are within ± 2.0% using an independent temperature device on a material of known temperature. Collect and compare the GPS coordinates from the equipment with an independent measuring device.

(1) Ensure the independent survey grade GPS measurement device is calibrated to the correct coordinate system (using a control point), prior to using these coordinates to validate the equipment GPS.

(2) The comparison is considered acceptable if the coordinates are within 4 feet of each other in the X and Y direction.

(C) Collect thermal profiles on all Driving Lanes during the paving operation and transfer the data to the “cloud” network or if automatic data transmission is not available, transfer the data to the Engineer at the end of daily paving.

(D) Contact the Department immediately when System Failure occurs. Daily Percent Coverage will be considered zero when the repairs are not completed within two (2) working days of System Failure. The start of this two (2) working day period begins the next working day after System Failure.

(E) Evaluate thermal profile segments, every 150 feet, and summarize the segregation of temperature results. Results are to be labeled as Minimal 0°-25°F, Moderate 25.1°-50°F and Severe >50°. Severe readings over 3 consecutive segments or over 4 or more segments in a day warrant investigation on the cause of the differential temperature distribution.

4.0 MEASUREMENT. The Department will measure the total area of the pavement lanes mapped by the infrared scanners. Full payment will be provided for all lanes with greater than 85% coverage. Partial payment will be made for all areas covered from 50% coverage to 85% coverage at the following rate Coverage area percentage X Total bid amount. And area with less than 50% coverage will not be measured for payment.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

1. Payment is full compensation for all work associated with providing all required equipment, training, and documentation.

2. Delays due to GPS satellite reception of signals or equipment breakdowns will not be considered justification for contract modifications or contract extensions.

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24891EC	PAVE MOUNT INFRARED TEMP EQUIPMENT	SQFT

SPECIAL NOTE FOR NON-TRACKING TACK COAT

1. DESCRIPTION AND USEAGE. This specification covers the requirements and practices for applying a non-tracking tack asphalt coating. Place this material on the existing pavement course, prior to placement of a new asphalt pavement layer. Use when expedited paving is necessary or when asphalt tracking would negatively impact the surrounding area. This material is not suitable for other uses. Ensure material can “break” within 15 minutes under conditions listed in 3.2.
2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Non-Tracking Tack. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide a tack conforming to the following material requirements:

Property	Specification	Test Procedure
Viscosity, SFS, 77 ° F	20 – 100	AASHTO T 72
Sieve, %	0.3 max.	AASHTO T 59
Asphalt Residue ¹ , %	50 min.	AASHTO T 59
Oil Distillate, %	1.0 max.	AASHTO T 59
Residue Penetration, 77 ° F	0 - 30	AASHTO T 49
Original Dynamic Shear (G*/sin □), 82 ° C	1.0 min.	AASHTO T 315
Softening Point, ° F	149 min.	AASHTO T 53
Solubility, %	97.5 min.	AASHTO T 44

¹ Bring sample to 212 °F over a 10-15 minute period. Maintain 212 °F for 15-20 minutes or until 30-40 mL of water has distilled. Continue distillation as specified in T59.

- 2.2. Equipment. Provide a distributor truck capable of heating, circulating, and spraying the tack between 170 °F and 180 °F. Do not exceed 180 °F. Circulate the material while heating. Provide the correct nozzles that is recommend by the producer to ensure proper coverage of tack is obtained. Ensure the bar can be raised to between 14” and 18” from the roadway.
- 2.3. Personnel. Ensure the tack supplier has provided training to the contractor on the installation procedures for this product. Make a technical representative from the supplier available at the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the non-tracking tack, ensure the pavement surface is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the surface by scraping, sweeping, and the use of compressed air. Ensure this preparation process occurs shortly before application to prevent the return of debris on to the pavement. If rain is expected within one hour after application, do not apply material. Apply material only when the surface is dry, and no precipitation is expected.

- 3.2 Non-tracking Tack Application. Placement of non-tracking tack is not permitted from October 1st to May 15th. When applying material, ensure the roadway temperature is a minimum of 40°F and rising. Prior to application, demonstrate competence in applying the tack according to this note to the satisfaction of the Engineer. Heat the tack in the distributor to between 170 – 180 °F. After the initial heating, between 170 – 180 °F, the material may be sprayed between 165 °F and 180 °F. Do not apply outside this temperature range. Apply material at a minimum rate of 0.70 pounds (0.08 gallons) per square yard. Ensure full coverage of the material on the pavement surface. Full coverage of this material is critical. Increase material application rate if needed to achieve full coverage. Schedule the work so that, at the end of the day's production, all non-tracking tack is covered with the asphalt mixture. If for some reason the non-tracking tack cannot be covered by an asphalt mixture, ensure the non-tracking tack material is clean and reapply the non-tracking tack prior to placing the asphalt mixture. Do not heat material more than twice in one day.
- 3.3 Non-tracking Tack Certification. Furnish the tack certification to the Engineer stating the material conforms to all requirements herein prior to use.
- 3.4 Sampling and Testing. The Department will require a sample of non-tracking tack be taken from the distributor at a rate of one sample per 15,000 tons of mix. Take two 1 gallon samples of the heated material and forward the sample to the Division of Materials for testing within 7 days. Ensure the product temperature is between 170 and 180 °F at the time of sampling.
4. MEASUREMENT. The Department will measure the quantity of non-tracking tack in tons. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of non-tracking tack, the cleaning of the pavement surface, or furnishing and placing the non-tracking tack. The Department will consider all such items incidental to the non-tracking tack.
5. PAYMENT. The Department will pay for the non-tracking tack at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. Non-tracking tack will not be permitted for use from October 1st to May 15th. During this timeframe, the department will allow the use of an approved asphalt emulsion in lieu of a non-tracking tack product but will not adjust the unit bid price of the material. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

Non-Tracking Tack Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Viscosity, SFS, 77 ° F	20 – 100	19 - 102	17 - 18 103 - 105	15 - 16 106 - 107	14 108 - 109	□ 13 □ 110
Sieve, %	0.30 max.	≤ 0.40	0.41 - 0.50	0.51 - 0.60	0.61 - 0.70	□ 0.71
Asphalt Residue, %	50 min.	≥49.0	48.5 – 48.9	48.0 – 48.4	47.5-47.9	□ 47.4
Oil Distillate, %	1.0 max.	≤1.0	1.1-1.5	1.6 - 1.7	1.8-1.9	□2.0
Residue Penetration, 77 ° F.	30 max.	≤ 31	32 - 33	34 - 35	36 - 37	□ 38
Original Dynamic Shear (G*/sin □), 82 ° C	1.0 min.	≥0.95	0.92 – 0.94	0.90 – 0.91	0.85 - 0.89	□ 0.84
Softening Point, ° F	149 min.	≥145	142 - 144	140 - 141	138 - 139	□ 137
Solubility, %	97.5 min.	□ 97.0	96.8 – 96.9	96.6 – 96.7	96.4 – 96.5	□ 96.3

Code

24970EC

Pay Item

Asphalt Material for Tack Non-Tracking

Pay Unit

Ton

Revised: May 23, 2022

SPECIAL NOTE FOR PAVEMENT MARKING MODIFICATIONS

This Proposal may include drawings depicting anticipated pavement marking modifications along the route to be resurfaced. However, per Section 713.03.01 of the Standard Specifications, the Contractor shall still be required to submit a record of existing pavement markings prior to beginning resurfacing activities. The Department requests these records be submitted at least four (4) weeks prior to resurfacing activities beginning in order to coordinate all desired changes between the District Striping Engineer and the Contractor. All changes will be returned to the Contractor to ensure the desired modifications can be performed during final surfacing. As the Contractor is responsible for implementing any pavement marking changes, it is highly recommended any questions are addressed to the Engineer prior to striping. Any incorrect markings will be removed and replaced with the proper markings at the Contractor's expense and in a manner approved by the Engineer.

SPECIAL NOTE FOR LONGITUDINAL PAVEMENT JOINT ADHESIVE

1. DESCRIPTION. This specification covers the requirements and practices for applying an asphalt adhesive material to the longitudinal joint of the surface course of an asphalt pavement. Apply the adhesive to the face of longitudinal joint between driving lanes for the first lane paved. Then, place and compact the adjacent lane against the treated face to produce a strong, durable, waterproof longitudinal joint.
2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Joint Adhesive. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide an adhesive conforming to the following requirements:

Property	Specification	Test Procedure
Viscosity, 400 ° F (Pa·s)	4.0 – 10.0	ASTM D 4402
Cone Penetration, 77 ° F	60 – 100	ASTM D 5329
Flow, 140 ° F (mm)	5.0 max.	ASTM D 5329
Resilience, 77 ° F (%)	30 min.	ASTM D 5329
Ductility, 77 ° F (cm)	30.0 min.	ASTM D 113
Ductility, 39 ° F (cm)	30.0 min.	ASTM D 113
Tensile Adhesion, 77 ° F (%)	500 min.	ASTM D 5329, Type II
Softening Point, ° F	171 min.	AASHTO T 53
Asphalt Compatibility	Pass	ASTM D 5329

Ensure the temperature of the pavement joint adhesive is between 380 and 410 °F when the material is extruded in a 0.125-inch-thick band over the entire face of the longitudinal joint.

2.2. Equipment.

221 Melter Kettle. Provide an oil-jacketed, double-boiler, melter kettle equipped with any needed agitation and recirculating systems.

222 Applicator System. Provide a pressure-feed-wand applicator system with an applicator shoe attached.

2.3 Personnel. Ensure a technical representative from the manufacturer of the pavement joint adhesive is present during the initial construction activities and available upon the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the pavement joint adhesive, ensure the face of the longitudinal joint is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the joint face by the use of compressed air.

Ensure this preparation process occurs shortly before application to prevent the return of debris on the joint face.

3.2 Pavement Joint Adhesive Application. Ensure the ambient temperature is a minimum of 40 ° F during the application of the pavement joint adhesive. Prior to applying the adhesive, demonstrate competence in applying the adhesive according to this note to the satisfaction of the Engineer. Heat the adhesive in the melter kettle to the specified temperature range. Pump the adhesive from the melter kettle through the wand onto the vertical face of the cold joint. Apply the adhesive in a continuous band over the entire face of the longitudinal joint. Do not use excessive material in either thickness or location. Ensure the edge of the extruded adhesive material is flush with the surface of the pavement. Then, place and compact the adjacent lane against the joint face. Remove any excessive material extruded from the joint after compaction (a small line of material may remain).

3.3 Pavement Joint Adhesive Certification. Furnish the joint adhesive's certification to the Engineer stating the material conforms to all requirements herein prior to use.

3.4 Sampling and Testing. The Department will require a random sample of pavement joint adhesive from each manufacturer's lot of material. Extrude two 5 lb. samples of the heated material and forward the sample to the Division of Materials for testing. Reynolds oven bags, turkey size, placed inside small cardboard boxes or cement cylinder molds have been found suitable. Ensure the product temperature is 400°F or below at the time of sampling.

4. MEASUREMENT. The Department will measure the quantity of Pavement Joint Adhesive in linear feet. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of Pavement Joint Adhesive, the cleaning of the joint face, or furnishing and placing the adhesive. The Department will consider all such items incidental to the Pavement Joint Adhesive.
5. PAYMENT. The Department will pay for the Pavement Joint Adhesive at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

Pavement Joint Adhesive Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Joint Adhesive Referenced in Subsection 2.1.1						
Viscosity, 400 ° F (Pa•s) ASTM D 3236	4.0-10.0	3.5-10.5	3.0-3.4 10.6-11.0	2.5-2.9 11.1-11.5	2.0-2.4 11.6-12.0	≤1.9 ≥ 12.1
Cone Penetration, 77 ° F ASTM D 5329	60-100	57-103	54-56 104-106	51-53 107-109	48-50 110-112	≤ 47 ≥ 113
Flow, 140 ° F (mm) ASTM D 5329	≤ 5.0	≤ 5.5	5.6-6.0	6.1-6.5	6.6-7.0	≥ 7.1
Resilience, 77 ° F (%) ASTM D 5329	≥ 30	≥ 28	26-27	24-25	22-23	≤ 21
Tensile Adhesion, 77 ° F (%) ASTM D 5329	≥ 500	≥ 490	480-489	470-479	460-469	≤ 459
Softening Point, ° F AASHTO T 53	≥ 171	≥ 169	166-168	163-165	160-162	≤ 159
Ductility, 77 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9
Ductility, 39 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9

Code
20071EC

Pay Item
Joint Adhesive

Pay Unit
Linear Foot

May 7, 2014

ITEMS FOR INSTALL

Item Number: 5-804

County: JEFFERSON

Description: SIGNALS AONG US42 AND KY22

Fund:

Department: 625

District:

County:

Project No.

Project Manager:

Office Charge No.

Author of List TED

Author Contact

Function:

Activity: 4260

Object Code: E389

Program:

District Traffic Engineer needs to be of any notified Special Orders

Cabinets	Master code		Unit Cost	Cost
	4 T-01-0020	Base Mounted 332 Cabinet	\$6,374.05	\$25,496.20
	4 T-01-0105	ATC Controller	\$1,377.92	\$5,511.68
	4 T-01-0106	1C w/Maxtime (this should go with item ATC controller)	\$1,505.24	\$6,020.96
	4 T-01-0501	Conflict Monitor, Model 2018	\$697.69	\$2,790.76
	8 T-01-0510	Isolator, Model 242 (1 for 2070, plus for ped detector and railroad)	\$31.52	\$252.16
	38 T-01-0700	Load Switches	\$14.70	\$558.60
			Total	\$40,630.36

Signals				
	37 T-02-0009	Siemens 3 Section Signal	\$201.91	\$7,470.67
	37 T-02-0032	Siemen 3 section backplate	\$86.00	\$3,182.00
	9 T-02-0033	Siemen 4 section 12" signal (poly)	\$228.00	\$2,052.00
	3 T-02-0040	Siemen 5 section, 12 inch signal (poly)	\$351.00	\$1,053.00
	3 T-02-0041	Siemen 5 section backplate	\$206.00	\$618.00
	9 T-02-0043	Siemen 4-sec. straight signal backplate	\$124.99	\$1,124.91
	28 T-02-0090	Pedestrian signal housing	\$178.07	\$4,985.96
	19 T-02-0300	LED Module 12" red arrow	\$32.95	\$626.05
	24 T-02-0310	LED Module 12" yellow arrow	\$29.84	\$716.16
	24 T-02-0320	LED Module 12" green arrow	\$27.70	\$664.80
	30 T-02-0330	LED Module 12" red ball	\$24.42	\$732.60
	30 T-02-0340	LED Module 12" yellow ball	\$24.84	\$745.20
	30 T-02-0350	LED Module 12" green ball	\$22.79	\$683.70
	28 T-02-0365	LED Countdown Pedestrian Module	\$88.66	\$2,482.48
			Total	\$27,137.53

Special items				
	24 T-09-0415	30 X 36 through 36 X 36 sign hanger (New)	\$96.49	\$2,315.76
	19 T-02-0650	Pedstl.top mntg.bkt One-way	\$79.10	\$1,502.90
	2 T-02-0660	Pedstl.top mntg.bkt Two-way	\$156.44	\$312.88
	20 T-02-0670	Pedestal	\$654.18	\$13,083.60
	28 T-06-0710	Ped Detector Pole Mount FSA Box	\$20.99	\$587.72
	28 T-06-0730	Ped Button w/o Plunger	\$134.36	\$3,762.08
	28 T-17-0015	9 X 15 Countdown Ped Sign DBL Sided	\$4.88	\$136.64
	1	Radar	\$102,785.00	\$102,785.00
			Total	\$124,486.58

Poles				
	4 T-04-0020	Steel Strain Pole 30 foot	\$4,395.53	\$17,582.12
	5 T-04-0030	Steel Strain Pole 32 foot	\$5,018.46	\$25,092.30
	3 T-04-0040	Steel Strain Pole 34 foot	\$3,998.86	\$11,996.58
	2 T-04-0051	Steel Strain Pole 36 foot	\$6,985.51	\$13,971.02
	2 T-04-0055	Steel Strain Pole 40 foot	\$3,502.20	\$7,004.41
			Total	\$75,646.42

Send copies to:	1,6,8,12	FINAL TOTAL	\$267,900.89
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Grant.DeRossett@ky.gov
Adam.proctor@ky.gov
Jessica.goodwin@ky.gov
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Shannon.riddle@ky.gov

2,3,7,9
4,5,10,11

Contractor Signature
that they have received all the items

updated 6/28/2023

SPECIAL NOTE FOR HOT-DIP GALVANIZING STEEL

These Notes or designated portions thereof, apply where so indicated on the plans, proposals or bidding instruction.

- I. DESCRIPTION.** This work shall consist of surface preparation and hot-dip galvanizing structural steel specified on the plans. An additional coating system as described in Section 607.03.23 of the Specifications is not required when this note is included in the contract.

II. MATERIALS.

- A. Steel.** Use steel specified in the plans; however, fabricator must confirm that the steel material has silicon content either below 0.4% or between 0.15% and 0.22% to ensure galvanizing will perform and bond as required. Steel material out of this range shall be rejected. This specification can only be utilized for rolled steel beam bridges (no plate girders) and associated hardware.
- B. Zinc.** In accordance with AASHTO M111.

III. HOT-DIP GALVANIZING.

A. Application.

Steel members, fabrications and assemblies shall be galvanized by the hot-dip process in the shop according to AASHTO M111 (*Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products*).

Bolts, nuts, washers and steel components shall be galvanized in the shop according to AASHTO M232 (*Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware*).

B. Safeguarding against embrittlement, distortion, and cracking

All steel shall be safeguarded against embrittlement according to ASTM A143 (*Standard Specification for Safeguarding against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement*). Water quenching or chromate conversion coatings shall not be used on any steel work that is to be painted.

All galvanized steel work shall be handled in a manner to avoid mechanical damage and minimize distortion. Members shall be supported during galvanization to prevent permanent distortion. The contractor/fabricator/galvanizer must propose changes to the element prior to preparing shop drawings if necessary to minimize the chances of permanent distortion or cracking during hot-dip galvanizing. Pre-heating must be utilized if necessary to minimize the chance of permanent distortion or cracking.

The contractor is required to inspect each element for distortion following hot-dip galvanizing prior to dipping the next element. Consult the Engineer if distortion is detected before proceeding to the next element.

C. Fabrication

Hot-dip galvanizing shall be indicated on the shop drawings. The fabricator shall coordinate with the galvanizer to incorporate additional steel detail required to facilitate galvanizing of the steel. These additional details shall be indicated on the shop drawings.

To insure identification after galvanizing, piece marks shall be supplemented with metal tags for all items where fit-up requires matching specific pieces.

After fabrication (cutting, welding, drilling, etc.) is complete, all holes shall be deburred and all fins, scabs or other surface/edge anomalies shall be ground or repaired per ASTM A6. The items shall then be cleaned per Steel Structures Painting Council's Surface Preparation Specification SSPC-SP1 (Solvent Cleaning) and SSPC-SP6 (Commercial Blast Cleaning). All surfaces shall be inspected to verify no fins, scabs or other similar defects are present.

All welded attachments shall be connected prior to hot dip galvanization, including shear studs.

Beams shall be handled, stored and transported with their webs vertical and with proper cushioning to prevent damage to the member and coating. Members shall be supported during galvanizing to prevent permanent distortion.

D. Surface Preparation

The Contractor/Fabricator shall consult with the galvanizer to insure proper removal of grease, paint and other deleterious materials prior to galvanizing. The members shall be abrasive blasted/cleaned to SSPC SP6/NACE 3 to remove all mill scale.

E. Coating Requirements

Coating weight, surface finish, appearance and adhesion shall conform to requirements of ASTM A385 (*Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)*) and AASHTO M111 or AASHTO M232, as appropriate.

F. Testing Requirements

Inspection and testing of hot-dip galvanized coatings shall follow the guidelines provided in the American Galvanizers Association publication "*Inspection of Products Hot-dip Galvanized after Fabrication*". Sampling, inspection, rejection and retesting for conformance with requirements shall be according to AASHTO M111 or AASHTO M232 as applicable, with the target coating thickness of 152 microns (6 mils). Coating thickness shall be measured according to AASHTO M111, for magnetic thickness gage measurement and AASHTO M232 as appropriate. The Cabinet may elect to conduct testing in addition to the Standards required testing.

All galvanized steel will be visually inspected for finish and appearance.

Bolts, nuts, washers, and steel components shall be packaged according to AASHTO M232. Identity of bolts, nuts and washers shall be maintained for lot-testing after galvanizing according to Article 505.04(f)(2) for high strength steel bolts.

G. Connection Treatment

After galvanizing and prior to shipping, contact surfaces for any bolted connections shall be roughened by hand wire brushing or according to SSPC-SP7 (Brush-Off Blast Cleaning). Power wire brushing is not allowed.

All bolt holes shall be reamed or drilled to their specified diameters after galvanizing. All bolts shall be installed after galvanizing.

H. Repair of Hot-dip Galvanized Coating

Surfaces with inadequate zinc thickness will be repaired using zinc based solder in accordance to ASTM A780 (*Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings*) Section 4.2.1 and AASHTO M111. Any fins or slivers present after galvanizing will be removed and repaired ASTM A780 (Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings) Section 4.2.1 and AASHTO M111.

Surfaces of galvanized steel that are damaged after the galvanizing operation shall be repaired according to ASTM A780. Damage that occurs in the shop shall be repaired in the shop. Damage that occurs during transport or in the field shall be repaired in the field. Any drips or runs in the galvanizing will be removed by grinding to match the surrounding surface.

All bolt holes shall be reamed or drilled to their specified diameters after galvanizing.

The Cabinet's Project Team must inspect and approve the galvanized steel prior to the subsequent Phase of Work.

V. PAYMENT

The cost of all surface preparation, galvanizing, and all other work described herein shall be the considered as included in the unit price bid for the applicable pay item to be hot-dip galvanized.

The Department will consider payment as full compensation for all work required by these notes and detail drawings.

SPECIAL NOTE

For Tree Removal

**Jefferson County
I-264 Reconstruction
Item No. 5-804**

**NO CLEARING OF TREES 5 INCHES OR GREATER (DIAMETER BREAST
HEIGHT) FROM MAY 15 - JULY 31.**

**If there are any questions regarding this note, please contact Danny Peake, Director,
Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone:
(502) 564-7250.**

SPECIAL NOTE FOR PIPELINE INSPECTION

1.0 DESCRIPTION. The Department will perform visual inspections on all pipe on the project. A video inspection will be required on projects having more than 250 linear feet of storm sewer and/or culvert pipe and on routes with an ADT of greater than 1,000 vehicles. Conduct video inspections on all pipe located under the roadway and 50 percent of the remaining pipe not under the roadway. Storm sewer runs and outfall pipes not under the roadway take precedence over rural entrance pipes. Contractors performing this item of work must be prequalified with the Department in the work type J51 (Video Pipe Inspection and Cleaning). Deflection testing shall be completed using a mandrel in accordance with the procedure outlined below or by physical measurement for pipes greater than 36 inches in diameter. Mandrel testing for deflection must be completed prior to the video inspection testing. Unless otherwise noted, Section references herein are to the Department's Standard Specifications for Road and Bridge Construction, current edition.

2.0 VIDEO INSPECTION. Ensure pipe is clear of water, debris or obstructions. Complete the video inspection and any necessary measurement prior to placing the final surface over any pipe. When paving will not be delayed, take measurements 30 days or more after the completion of earthwork to within 1 foot of the finished subgrade. Notify the Engineer a minimum of 24 hours in advance of inspection and notify the Engineer immediately if distresses or locations of improper installation are logged.

2.1 INSPECTION FOR DEFECTS AND DISTRESSES

A) Begin at the outlet end and proceed through to the inlet at a speed less than or equal to 30 ft/minute. Remove blockages that will prohibit a continuous operation.

B) Document locations of all observed defects and distresses including but not limited to: cracking, spalling, slabbing, exposed reinforcing steel, sags, joint offsets, joint separations, deflections, improper joints/connections, blockages, leaks, rips, tears, buckling, deviation from line and grade, damaged coatings/paved inverts, and other anomalies not consistent with a properly installed pipe.

C) During the video inspection provide a continuous 360 degree pan of every pipe joint.

D) Identify and measure all cracks greater than 0.1" and joint separations greater than 0.5".

E) Video Inspections are conducted from junction to junction which defines a pipe run. A junction is defined as a headwall, drop box inlet, curb box inlet, manhole, buried junction, or other structure that disturbs the continuity of the pipe. Multiple pipe inspections may be conducted from a single set up location, but each pipe run must be on a separate video file and all locations are to be referenced from nearest junction relative to that pipe run.

F) Record and submit all data on the TC 64-765 and TC 64-766 forms.

3.0 MANDREL TESTING. Mandrel testing will be used for deflection testing. For use on Corrugated Metal Pipe, High Density Polyethylene Pipe, and Polyvinyl Chloride Pipe, use a mandrel device with an odd number of legs (9 minimum) having a length not less than the outside diameter of the mandrel. The diameter of the mandrel at any point shall not be less than the diameter specified in Section 3.6. Mandrels can be a fixed size or a variable size.

3.1 Use a proving ring or other method recommended by the mandrel manufacturer to verify mandrel diameter prior to inspection. Provide verification documentation for each size mandrel to the Engineer.

3.2 All deflection measurements are to be based off of the AASHTO Nominal Diameters. Refer to the chart in section 3.6.

3.3 Begin by using a mandrel set to the 5.0% deflection limit. Place the mandrel in the inlet end of the pipe and pull through to the outlet end. If resistance is met prior to completing the entire run, record the maximum distance achieved from the inlet side, then remove the mandrel and continue the inspection from the outlet end of the pipe toward the inlet end. Record the maximum distance achieved from the outlet side.

3.4 If no resistance is met at 5.0% then the inspection is complete. If resistance occurred at 5.0% then repeat 3.1 and 3.2 with the mandrel set to the 10.0% deflection limit. If the deflection of entire pipe run cannot be verified with the mandrel then immediately notify the Engineer.

3.5 Care must be taken when using a mandrel in all pipe material types and lining/coating scenarios. Pipe damaged during the mandrel inspection will be video inspected to determine the extent of the damage. If the damaged pipe was video inspected prior to mandrel inspection then a new video inspection is warranted and supersedes the first video inspection. Immediately notify the Engineer of any damages incurred during the mandrel inspection and submit a revised video inspection report.

3.6 AASHTO Nominal Diameters and Maximum Deflection Limits.

Base Pipe Diameter	AASHTO Nominal Diameter	Max. Deflection Limit	
		5.0%	10.0%
(inches)	(inches)	(inches)	
15	14.76	14.02	13.28
18	17.72	16.83	15.95
24	23.62	22.44	21.26
30	29.53	28.05	26.58
36	35.43	33.66	31.89
42	41.34	39.27	37.21
48	47.24	44.88	42.52
54	53.15	50.49	47.84
60	59.06	56.11	53.15

4.0 PHYSICAL MEASUREMENT OF PIPE DEFLECTION. Alternate method for deflection testing when there is available access or the pipe is greater than 36 inches in diameter, as per 4.1. Use a contact or non-contact distance instrument. A leveling device is recommended for establishing or verifying vertical and horizontal control.

4.1 Physical measurements may be taken after installation and compared to the AASHTO Nominal Diameter of the pipe as per Section 3.6. When this method is used, determine the smallest interior diameter of the pipe as measured through the center point of the pipe (D2). All measurements are to be taken from the inside crest of the corrugation. Take the D2 measurements at the most deflected portion of the pipe run in question and at intervals no greater than ten (10) feet through the run. Calculate the deflection as follows:

$$\% \text{ Deflection} = [(AASHTO \text{ Nominal Diameter} - D2) / AASHTO \text{ Nominal Diameter}] \times 100\%$$

Note: The Engineer may require that preset monitoring points be established in the culvert prior to backfilling. For these points the pre-installation measured diameter (D1) is measured and recorded. Deflection may then be calculated from the following formula:

$$\% \text{ Deflection} = [(D1 - D2) / D1] (100\%)$$

4.2 Record and submit all data.

5.0 DEDUCTION SCHEDULE. All pipe deductions shall be handled in accordance with the tables shown below.

FLEXIBLE PIPE DEFLECTION	
Amount of Deflection (%)	Payment
0.0 to 5.0	100% of the Unit Bid Price
5.1 to 9.9	50% of the Unit Bid Price ⁽¹⁾
10 or greater	Remove and Replace ⁽²⁾

⁽¹⁾ Provide Structural Analysis for HDPE and metal pipe. Based on the structural analysis, pipe may be allowed to remain in place at the reduced unit price. ⁽²⁾ The Department may allow the pipe to remain in place with no pay to the Contractor in instances where it is in the best interest to the public and where the structural analysis demonstrates that the pipe should function adequately.

RIGID PIPE REMEDIATION TABLE PIPE	
Crack Width (inches)	Payment
≤ 0.1	100% of the Unit Bid Price
Greater than 0.1	Remediate or Replace ⁽¹⁾

(1) Provide the Department in writing a method for repairing the observed cracking. Do not begin work until the method has been approved.

6.0 PAYMENT. The Department will measure the quantity in linear feet of pipe to inspect. The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24814EC	Pipeline Inspection	Linear Foot
10065NS	Pipe Deflection Deduction	Dollars

SPECIAL NOTE FOR NON-TRACKING TACK COAT

1. DESCRIPTION AND USEAGE. This specification covers the requirements and practices for applying a non-tracking tack asphalt coating. Place this material on the existing pavement course, prior to placement of a new asphalt pavement layer. Use when expedited paving is necessary or when asphalt tracking would negatively impact the surrounding area. This material is not suitable for other uses. Ensure material can “break” within 15 minutes under conditions listed in 3.2.
2. MATERIALS, EQUIPMENT, AND PERSONNEL.

- 2.1 Non-Tracking Tack. Provide material conforming to Subsection 2.1.1.
- 2.1.1 Provide a tack conforming to the following material requirements:

Property	Specification	Test Procedure
Viscosity, SFS, 77 ° F	20 – 100	AASHTO T 72
Sieve, %	0.3 max.	AASHTO T 59
Asphalt Residue ¹ , %	50 min.	AASHTO T 59
Oil Distillate, %	1.0 max.	AASHTO T 59
Residue Penetration, 77 ° F	0 - 30	AASHTO T 49
Original Dynamic Shear (G*/sin δ), 82 ° C	1.0 min.	AASHTO T 315
Softening Point, ° F	149 min.	AASHTO T 53
Solubility, %	97.5 min.	AASHTO T 44

¹ Bring sample to 212 °F over a 10-15 minute period. Maintain 212 °F for 15-20 minutes or until 30-40 mL of water has distilled. Continue distillation as specified in T59.

- 2.2. Equipment. Provide a distributor truck capable of heating, circulating, and spraying the tack between 170 °F and 180 °F. Do not exceed 180 °F. Circulate the material while heating. Provide the correct nozzles that is recommend by the producer to ensure proper coverage of tack is obtained. Ensure the bar can be raised to between 14” and 18” from the roadway.
- 2.3. Personnel. Ensure the tack supplier has provided training to the contractor on the installation procedures for this product. Make a technical representative from the supplier available at the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the non-tracking tack, ensure the pavement surface is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the surface by scraping, sweeping, and the use of compressed air. Ensure this preparation process occurs shortly before application to prevent the return of debris on to the pavement. If rain is expected within one hour after application, do not apply material. Apply material only when the surface is dry, and no precipitation is expected.

- 3.2 Non-tracking Tack Application. Placement of non-tracking tack is not permitted from October 1st to May 15th. When applying material, ensure the roadway temperature is a minimum of 40°F and rising. Prior to application, demonstrate competence in applying the tack according to this note to the satisfaction of the Engineer. Heat the tack in the distributor to between 170 – 180 °F. After the initial heating, between 170 – 180 °F, the material may be sprayed between 165 °F and 180 °F. Do not apply outside this temperature range. Apply material at a minimum rate of 0.70 pounds (0.08 gallons) per square yard. Ensure full coverage of the material on the pavement surface. Full coverage of this material is critical. Increase material application rate if needed to achieve full coverage. Schedule the work so that, at the end of the day's production, all non-tracking tack is covered with the asphalt mixture. If for some reason the non-tracking tack cannot be covered by an asphalt mixture, ensure the non-tracking tack material is clean and reapply the non-tracking tack prior to placing the asphalt mixture. Do not heat material more than twice in one day.
- 3.3 Non-tracking Tack Certification. Furnish the tack certification to the Engineer stating the material conforms to all requirements herein prior to use.
- 3.4 Sampling and Testing. The Department will require a sample of non-tracking tack be taken from the distributor at a rate of one sample per 15,000 tons of mix. Take two 1 gallon samples of the heated material and forward the sample to the Division of Materials for testing within 7 days. Ensure the product temperature is between 170 and 180 °F at the time of sampling.
4. MEASUREMENT. The Department will measure the quantity of non-tracking tack in tons. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of non-tracking tack, the cleaning of the pavement surface, or furnishing and placing the non-tracking tack. The Department will consider all such items incidental to the non-tracking tack.
5. PAYMENT. The Department will pay for the non-tracking tack at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. Non-tracking tack will not be permitted for use from October 1st to May 15th. During this timeframe, the department will allow the use of an approved asphalt emulsion in lieu of a non-tracking tack product but will not adjust the unit bid price of the material. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

Non-Tracking Tack Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Viscosity, SFS, 77 ° F	20 – 100	19 - 102	17 - 18	15 - 16	14	≤13
			103 - 105	106 - 107	108 - 109	≥ 110
Sieve, %	0.30 max.	≤ 0.40	0.41 - 0.50	0.51 - 0.60	0.61 - 0.70	≥ 0.71
Asphalt Residue, %	50 min.	≥49.0	48.5 – 48.9	48.0 – 48.4	47.5-47.9	≤ 47.4
Oil Distillate, %	1.0 max.	≤1.0	1.1-1.5	1.6 - 1.7	1.8-1.9	>2.0
Residue Penetration, 77 ° F.	30 max.	≤ 31	32 - 33	34 - 35	36 - 37	≥ 38
Original Dynamic Shear (G*/sin δ), 82 ° C	1.0 min.	≥0.95	0.92 – 0.94	0.90 – 0.91	0.85 - 0.89	≤ 0.84
Softening Point, ° F	149 min.	≥145	142 - 144	140 - 141	138 - 139	≤ 137
Solubility, %	97.5 min.	≥ 97.0	96.8 – 96.9	96.6 – 96.7	96.4 – 96.5	≤ 96.3

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24970EC	Asphalt Material for Tack Non-Tracking	Ton

Revised: May 23, 2022

SPECIAL NOTE FOR EXPERIMENTAL KYCT AND HAMBURG TESTING

1.0 General

1.1 Description. The KYCT (Kentucky Method for Cracking Test) and the Hamburg test results will help determine if the mixture is susceptible to cracking and rutting. During the experimental phase, data will be gathered and analyzed by the Department to determine the durability of the bituminous mixes. Additionally, the data will help the Department to create future performance-based specifications which will include the KYCT and Hamburg test methods.

2.0 Equipment

2.1 KYCT Testing Equipment. The Department will require a Marshall Test Press with digital recordation capabilities. Other CT testing equipment may be used for testing with prior approval by the Department.

2.2 Water Baths. One or more water baths will be required that can maintain a temperature of 77° +/- 1.8° F with a digital thermometer showing the water bath temperature. Also, one water bath shall have the ability to suspend gyratory specimen fully submerged in water in accordance with AASHTO T-166, current edition.

2.3 Hamburg Wheel Track Testing. The department encourages the use of the PTI APA/Hamburg Jr. test equipment to perform the loaded wheel testing. The Department will allow different equipment for the Hamburg testing, but the testing device must be approved by the Department prior to testing.

2.4 Gyratory Molds. Gyratory molds will be required to assist in the production of gyratory specimens in accordance with AASHTO T-312, current edition.

2.5 Ovens. Adequate (minimum of two ovens) will be required to accommodate the additional molds and asphalt mixture necessary to perform the acceptance testing as outlined in Section 402 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

2.6 Department Equipment. The Department will provide gyratory molds, PINE 850 Test Press with digital recordation, and CT testing equipment to assist during this experimental phase so data can be gathered. Hamburg test specimens will be submitted to the Division of Materials for testing on the PTI APA/Hamburg Jr if the asphalt contractor or district materials office does not have an approved Hamburg testing device.

3.0 Testing Requirements

3.1 Acceptance Testing. Perform all acceptance testing and aggregate gradation as according with Section 402 and Section 403 of the Kentucky Standard Specifications for Road and Bridge Construction, current edition.

3.2 KYCT Testing. Perform crack resistance analysis (KYCT) in accordance with the current Kentucky Method for KYCT Index Testing during the mix design phase and during the plant production of all surface mixtures. For mix design approvals, submit KYCT results on the Department MixPack. For Class 4 mixtures, submit ingredient materials to the Division of Materials for verification.

3.2.1 KYCT Frequency. Obtain an adequate sample of hot mix asphalt to ensure the acceptance testing, gradation, and KYCT gyratory samples can be fabricated and is representative of the bituminous mixture. Acceptance specimens shall be fabricated first, then immediately after, fabricate the KYCT samples with the gyratory compactor in accordance with Section 2.4 of this Special Note. Analysis of the KYCT specimens and gradation will be required one per subplot produced from the same asphalt material and at the same time as the acceptance specimen is sampled and tested.

3.2.2 Number of Specimens and Conditioning. Fabricate specimens in accordance with the Kentucky Method for KYCT Index Testing. Contrary to the method, for field specimens, fabricate a minimum of 3 and up to 6 test specimens. The specimens shall be compacted at the temperature in accordance with KM 64-411. KYCT mix design specimens shall be short-term conditioned uncovered for four hours at compaction temperature in accordance with KM 64-411. Contrary to the Kentucky Method, plant produced bituminous material shall be short-term conditioned immediately after sampling for two hours uncovered in the oven at compaction temperature in accordance with KM 64-411. Additionally, fabricated specimens shall be allowed to cool in air (fan is permissible) for 30 minutes +/- 5 minutes and conditioned in a 77 °F water bath for 30 minutes +/- 5 minutes. To ensure confidence and reliability of the test results provided by KYCT testing and Hamburg testing, reheating of the asphalt mixture is prohibited.

3.2.3 Record Times. For each subplot, record the time required between drying aggregates in the plant to KYCT specimen fabrication. The production time may vary due to the time that the bituminous material is held in the silo. Record the preconditioning time when the time exceeds the one-hour specimen cool down time as required in accordance with The Kentucky Method for KYCT Index Testing. The preconditioning time may exceed an hour if the technician is unable to complete the test on the same day or within the specified times as outlined in The Kentucky Method for KYCT Index Testing. The production time and the preconditioning time shall be recorded on the AMAW.

3.2.4 File Name. As according to section 7.12 of The Kentucky Method for KYCT Index Testing, save the filename with the following format: "CID_Approved Mix Number_Lot Number_Sublot Number_Date"

3.3 Hamburg Testing. Perform the rut resistance analysis (Hamburg) in accordance with AASTHO T-324, not to exceed 20,000 passes for all bituminous mixtures during the mix design phase and production. For mix design approvals, submit Hamburg results on the Department MixPack. For Class 4 mixtures, submit ingredient materials to the Division of Materials for informational verification.

3.3.1 Hamburg Testing Frequency. Perform testing and analysis per lot of material. The plant produced bituminous material sampled for the Hamburg test does not have to be obtained at the same time as the acceptance and KYCT sample. If the Hamburg test sample is not obtained at the same time as the KYCT sample, determine the Maximum Specific Gravity of the KYCT sample in accordance with AASHTO T-209 coinciding with the Hamburg specimens.

3.3.2 Record Times. Record the production time as according to section 3.2.3 in this special note. Also record the time that the specimens were fabricated and the time the Hamburg testing was started. All times shall be recorded on the AMAW.

3.3.3 File Name. Save the Excel spreadsheet with the following file name; “Hamburg_CID_Approved Mix Number_Lot Number_Sublot Number_Date” and upload the file into the AMAW.

4.0 Data

Submit the AMAW and all test data that was obtained for acceptance, gradation, KYCT, and Hamburg testing within five working days once all testing has been completed for a lot to Central Materials Lab and the District Materials Engineer. Also, any data and or comments that the asphalt contractor or district personnel deem informational during this experimental phase, shall also be submitted to the Central Materials Lab and the District Materials Engineer. Any questions or comments regarding any item in this Special Note can be directed to the Central Office, Division of Materials, Asphalt Branch.

5.0 Payment

Any additional labor and testing equipment that is required to fabricate and test the KYCT and Hamburg specimens shall be considered incidental to the asphalt surface line item. The Department will perform the testing for the KYCT and Hamburg specimens if a producer does not possess the proper equipment.

June 15th, 2022

Special Note for Bridge Demolition, Renovation and Asbestos Abatement

If the project includes any bridge demolition or renovation, the successful bidder is required to notify Kentucky Division for Air Quality (KDAQ) via filing of form (DEP 7036) a minimum of 10 working days prior to commencement of any bridge demolition or renovation work.

Any available information regarding possible asbestos containing materials (ACM) on or within bridges to be affected by the project has been included in the bid documents. These are to be included with the Contractor's notification filed with the KDAQ. If not included in the bid documents, the Department will provide that information to the successful bidder for inclusion in the KDAQ notice as soon as possible. If there are no documents stating otherwise, the bidders should assume there are no asbestos containing materials that will in any way affect the work.



Andy Beshear
GOVERNOR

TRANSPORTATION CABINET

200 Mero Street
Frankfort, Kentucky 406 01

Jim Gray
SECRETARY

Asbestos Inspection Survey

To: Donna Hardin

District: 5

Date: January 27, 2025

Conducted By: O'Dail Lawson

Report Prepared By: O'Dail Lawson

Project and Structure Identification

Project Number: Jefferson 05-0804.00

Structure ID: 056B00002N

Structure Location: US 42 over I-264

Sample Description: Any suspect materials collected were negative for asbestos.

Inspection Date: January 22, 2025

Results and Recommendations

This asbestos survey was performed in accordance with the current USEPA regulations, specifically [40 CFR Part 61](#), Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP) revision, final rule effective November 20, 1990.

The results of the samples collected were negative for the presence of asbestos above 1%. No abatement is required at this time. However, the [OSHA Standard 1926.1101](#) applies if any level of asbestos is present in the samples collected.

It is recommended that this report accompany the 10-Day Notice of Intent for Demolition ([Notification Form DEP 7036](#)) which is to be submitted to the Kentucky Division of Air Quality prior to abatement, demolition, or renovation of any building or structure in the Commonwealth. This form can be submitted electronically at the [EEC Forms Homepage](#)

MRS, Inc. Analytical Laboratory Division

(502) 568 - 2088 or (502) 495 - 1212

Fax: (502) 495 - 0566

BULK SAMPLE ASBESTOS ANALYSIS

Analysis N#	# 3501256 B	Address:	Jefferson County - 056B00002N
Client Name:	K Y T C		
Sampled By:	O'Dail Lawson		

[illegible]

Methodology : EPA Method 600/R-93-116

Date Analyzed : 25-Jan-25

Analyst : Winterford Mensah

Reviewed By: Winters Mensaf
Signature

The test relates only to the items tested. This report does not represent endorsement by NVLAP or any agency of the U.S. Government. Partial Reproduction of any part of this report is strictly prohibited. Samples shall be retained for (30) days.

AIHA # 102459

AJHA #1 02459



Chain of Custody Record

Kentucky Transportation Cabinet

200 Mero Street, 4th Floor West

Frankfort, Kentucky 40622

(502) 564-7250 fax (502) 564-5655

[illegible]

ENVIRONMENTAL TRAINING CONCEPTS, INC
P.O. Box 99603 Louisville, KY 40269
(502)640-2951

Certification Number: ETC-AIR-031324-00278


O'Dail Lawson

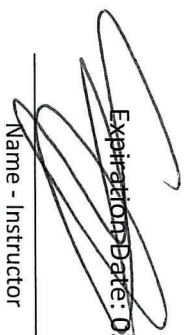
has on 03-13-2024 attended and successfully completed the requirements and passed the examination with a score of 70% or better on the entitled course.

ASBESTOS INSPECTOR REFRESHER

Training was in accordance with 40 CFR Part 763 (AHERA) approved by the Commonwealth of Kentucky, the Indiana Department of Environmental Management, Tennessee Department of Environment & Conservation and The Arkansas Department of Environmental Quality. The above student received requisite training for Asbestos Accreditation under Title II of the Toxic Substance Act (TSCA).

Conducted at: 1520 Alliant Ave., Louisville, KY


Name - Training Manager


Expiration Date: 03-13-2025
Name - Instructor



Andy Beshear
GOVERNOR

TRANSPORTATION CABINET

200 Mero Street
Frankfort, Kentucky 406 01

Jim Gray
SECRETARY

Asbestos Inspection Survey

To: Donna Hardin

District: 5

Date: January 27, 2025

Conducted By: O'Dail Lawson

Report Prepared By: O'Dail Lawson

Project and Structure Identification

Project Number: Jefferson 05-0804.00

Structure ID: 056B00057N

Structure Location: I-264 Eastbound over I-264

Sample Description: Any suspect materials collected were negative for asbestos.

Inspection Date: January 22, 2025

Results and Recommendations

This asbestos survey was performed in accordance with the current USEPA regulations, specifically [40 CFR Part 61](#), Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP) revision, final rule effective November 20, 1990.

The results of the samples collected were negative for the presence of asbestos above 1%. No abatement is required at this time. However, the [OSHA Standard 1926.1101](#) applies if any level of asbestos is present in the samples collected.

It is recommended that this report accompany the 10-Day Notice of Intent for Demolition ([Notification Form DEP 7036](#)) which is to be submitted to the Kentucky Division of Air Quality prior to abatement, demolition, or renovation of any building or structure in the Commonwealth. This form can be submitted electronically at the [EEC Forms Homepage](#)



Fax: (502) 495 - 0566

Analysis N#	# 3501256 C	Address:	Jefferson County - 056B00057N
Client Name:	K Y T C		
Sampled By:	O'Dail Lawson		

[illegible]

Reviewed By: Winterson Mendez
Signature

AJHA #1 02459



Chain of Custody Record

Kentucky Transportation Cabinet

200 Mero Street, 4th Floor West

Frankfort, Kentucky 40622

(502) 564-7250 fax (502) 564-5655

[illegible]

ENVIRONMENTAL TRAINING CONCEPTS, INC
P.O. Box 99603 Louisville, KY 40269
(502)640-2951

Certification Number: ETC-AIR-031324-00278


O'Dail Lawson

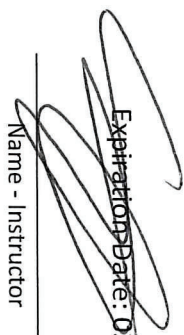
has on 03-13-2024 attended and successfully completed the requirements and passed the examination with a score of 70% or better on the entitled course.

ASBESTOS INSPECTOR REFRESHER

Training was in accordance with 40 CFR Part 763 (AHERA) approved by the Commonwealth of Kentucky, the Indiana Department of Environmental Management, Tennessee Department of Environment & Conservation and The Arkansas Department of Environmental Quality. The above student received requisite training for Asbestos Accreditation under Title II of the Toxic Substance Act (TSCA).

Conducted at: 1520 Alliant Ave., Louisville, KY


Name - Training Manager


Expiration Date: 03-13-2025
Name - Instructor

SPECIAL NOTE FOR CONTRACT COMPLETION DATE AND LIQUIDATED DAMAGES ON BRIDGE REPAIR CONTRACTS

- I. COMPLETION DATE.** The Contractor has the option of selecting the starting date for this Contract. Once selected, notify the Department in writing of the date selected at least two weeks prior to beginning work. All work is to be completed in the 2004 construction season by November 15, 2004. An allotted number of working days are assigned to each structure in this contract as shown below.

STRUCTURE

NUMBER OF WORKING DAYS

FE02

Contrary to Section 108.07.02, the Engineer will begin charging working days for a structure on the day the Contractor starts work or sets up traffic control on that particular structure.

- II. LIQUIDATED DAMAGES.** Liquidated damages will be assessed the Contractor in accordance with the Transportation Cabinet, Department of Highway's current Standard Specifications for Road and Bridge Construction, Section 108.09, when either the allotted number of working days or the November 15, 2004 date is exceeded.

Contrary to the Standard Specifications, liquidated damages will be assessed the Contractor during the months of December, January, February and March when the contract time has expired on any individual bridge or bridges. Contract time will be charged during these months.

All construction must be completed in accordance with the weather limitations specified in Section 606 and/or Section 601 as applicable. No extension of Contract time will be granted due to inclement weather or temperature limitations that occur due to starting work on the Contract or a structure late in the construction season.

01/01/2009



KENTUCKY TRANSPORTATION CABINET

Department of Highways

DIVISION OF RIGHT OF WAY & UTILITIES

TC 62-226

Rev. 01/2016

Page 1 of 1

RIGHT OF WAY CERTIFICATION

<input checked="" type="checkbox"/>	Original	<input type="checkbox"/>	Re-Certification	RIGHT OF WAY CERTIFICATION	
ITEM #		COUNTY		PROJECT # (STATE)	PROJECT # (FEDERAL)
5-804.00		Jefferson		12F0 FD52 056 8556401R	STP 2641 (176)
PROJECT DESCRIPTION					
Reconstruct/Widen (Watterson Expressway) I-264 from Westport Rd (KY 1447) to I-71 including the US 42 interchange.					
<input type="checkbox"/>	No Additional Right of Way Required				
Construction will be within the limits of the existing right of way. The right of way was acquired in accordance to FHWA regulations under the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended. No additional right of way or relocation assistance were required for this project.					
<input checked="" type="checkbox"/>	Condition # 1 (Additional Right of Way Required and Cleared)				
All necessary right of way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Just Compensation has been paid or deposited with the court. All relocations have been relocated to decent, safe, and sanitary housing or that KYTC has made available to displaced persons adequate replacement housing in accordance with the provisions of the current FHWA directive.					
<input type="checkbox"/>	Condition # 2 (Additional Right of Way Required with Exception)				
The right of way has not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Just Compensation has been paid or deposited with the court for most parcels. Just Compensation for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract					
<input type="checkbox"/>	Condition # 3 (Additional Right of Way Required with Exception)				
The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. All remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary right of way will not be fully acquired, and/or some occupants will not be relocated, and/or the just compensation will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction.					
Total Number of Parcels on Project		27	EXCEPTION (S) Parcel #	ANTICIPATED DATE OF POSSESSION WITH EXPLANATION	
Number of Parcels That Have Been Acquired					
Signed Deed		26			
Condemnation		1			
Signed ROE					
Notes/ Comments (Text is limited. Use additional sheet if necessary.)					
LPA RW Project Manager			Right of Way Supervisor		
Printed Name				Printed Name	
Signature				Signature	
Date				Date	
Right of Way Director			FHWA		
Printed Name				Printed Name	
Signature				Signature	
Date				Date	



KENTUCKY TRANSPORTATION CABINET

Department of Highways

DIVISION OF RIGHT OF WAY & UTILITIES

TC 62-226

Rev. 01/2016

Page 1 of 1

RIGHT OF WAY CERTIFICATION

<input checked="" type="checkbox"/>	Original	<input type="checkbox"/>	Re-Certification	RIGHT OF WAY CERTIFICATION	
ITEM #		COUNTY		PROJECT # (STATE)	PROJECT # (FEDERAL)
5-20017.00		Jefferson		NHPM 056 264 21-23	
PROJECT DESCRIPTION					
Resurfacing on I-264 from MP 20.56 to 21.28 & MP 22.59 to 22.89 in Jefferson County.					
<input checked="" type="checkbox"/>	No Additional Right of Way Required				
Construction will be within the limits of the existing right of way. The right of way was acquired in accordance to FHWA regulations under the Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970, as amended. No additional right of way or relocation assistance were required for this project.					
<input type="checkbox"/>	Condition # 1 (Additional Right of Way Required and Cleared)				
All necessary right of way, including control of access rights when applicable, have been acquired including legal and physical possession. Trial or appeal of cases may be pending in court but legal possession has been obtained. There may be some improvements remaining on the right-of-way, but all occupants have vacated the lands and improvements, and KYTC has physical possession and the rights to remove, salvage, or demolish all improvements and enter on all land. Just Compensation has been paid or deposited with the court. All relocations have been relocated to decent, safe, and sanitary housing or that KYTC has made available to displaced persons adequate replacement housing in accordance with the provisions of the current FHWA directive.					
<input type="checkbox"/>	Condition # 2 (Additional Right of Way Required with Exception)				
The right of way has not been fully acquired, the right to occupy and to use all rights-of-way required for the proper execution of the project has been acquired. Some parcels may be pending in court and on other parcels full legal possession has not been obtained, but right of entry has been obtained, the occupants of all lands and improvements have vacated, and KYTC has physical possession and right to remove, salvage, or demolish all improvements. Just Compensation has been paid or deposited with the court for most parcels. Just Compensation for all pending parcels will be paid or deposited with the court prior to AWARD of construction contract					
<input type="checkbox"/>	Condition # 3 (Additional Right of Way Required with Exception)				
The acquisition or right of occupancy and use of a few remaining parcels are not complete and/or some parcels still have occupants. All remaining occupants have had replacement housing made available to them in accordance with 49 CFR 24.204. KYTC is hereby requesting authorization to advertise this project for bids and to proceed with bid letting even though the necessary right of way will not be fully acquired, and/or some occupants will not be relocated, and/or the just compensation will not be paid or deposited with the court for some parcels until after bid letting. KYTC will fully meet all the requirements outlined in 23 CFR 635.309(c)(3) and 49 CFR 24.102(j) and will expedite completion of all acquisitions, relocations, and full payments after bid letting and prior to AWARD of the construction contract or force account construction.					
Total Number of Parcels on Project		EXCEPTION (S) Parcel #		ANTICIPATED DATE OF POSSESSION WITH EXPLANATION	
Number of Parcels That Have Been Acquired					
Signed Deed					
Condemnation					
Signed ROE					
Notes/ Comments (Text is limited. Use additional sheet if necessary.)					
LPA RW Project Manager			Right of Way Supervisor		
Printed Name				Printed Name	
Signature				Signature	
Date				Tom Boykin	
Right of Way Director			FHWA		
Printed Name				Printed Name	
Signature		Digitally signed by Kelly Divine Date: 2025.02.05 15:49:09 -06'00'		Signature	
Date				Date	

UTILITIES AND RAIL CERTIFICATION NOTE

Jefferson County
00STP2641176
FD52 056 8556402U
Mile point: 20.900 TO 22.600
RECONSTRUCT/WIDEN I-264 (WATTERSON EXPRESSWAY) FROM WESTPORT ROAD (KY-1447) TO I-71,
INCLUDING THE US-42 INTERCHANGE
ITEM NUMBER: 05-804.00

PROJECT NOTES ON UTILITIES

The contractor should be aware that there is UTILITY WORK INCLUDED IN THIS ROAD CONSTRUCTION CONTRACT. The Contractor shall review the GENERAL UTILITY NOTES AND INSTRUCTIONS which may include KYTC Utility Bid Item Descriptions, utility owner supplied specifications, plans, list of utility owner preapproved subcontractors, and other instructions. Utility contractors may be added via addendum if KYTC is instructed to do so by the utility owner. Potential contractors must seek prequalification from the utility owner. Any revisions must be sent from the utility owner to KYTC a minimum of one week prior to bid opening.

For all projects over 2000 linear feet, which are defined as a "Large Project" in KRS 367.4903(18), the awarded contractor shall initially mark the first 2000 linear feet minimally of proposed excavation or construction boundaries of the project to be worked using the procedure set forth in KRS 367.4909(9)(k). This temporary field locating of the project excavation boundary shall take place prior to submitting an excavation location request to the underground utility protection Kentucky Contact Center. For large projects, the awarded contractor shall work with the impacted utilities to determine when additional white lining of the remainder of the project site will take place. This provision shall not alter or relieve the awarded contractor from complying with requirements of KRS 367.4905 to 367.4917 in their entirety.

Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs. The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. The contractor is instructed to contact KY 811 for

UTILITIES AND RAIL CERTIFICATION NOTE

Jefferson County
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INCLUDING THE US-42 INTERCHANGE
ITEM NUMBER: 05-804.00

the location of existing underground utilities. Contact shall be made a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY 811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom are to be contacted through their individual Protection Notification Center. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area. Non-compliance with these directives can result in the enforcement of penalties.

NOTE: DO NOT DISTURB THE FOLLOWING FACILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

AT&T - KY – Communication

Charter Communications – Communication

Louisville Gas & Electric – Electric

Louisville Gas & Electric - Natural Gas

Louisville Water Company – Water

MCI/Verizon – Communication

Metropolitan Sewer District - Sewer

Windstream Communications, LLC – Communication

The Contractor is fully responsible for protection of all utilities listed above

THE FOLLOWING FACILITY OWNERS ARE RELOCATING/ADJUSTING THEIR FACILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

Charter Communications – Communication – The company has overhead and underground communication lines throughout the site. Underground communication lines run along the north side of US-42 from approximately STA125+00 to STA137+50. Overhead lines are attached to LG&E poles. The lines run along the south side of US-42 from STA111+38, across I-264 to the north side of the KY-22 Brownsboro Rd slip ramp near STA 3017+50. The line crosses over the intersection to the south side of KY-22 Brownsboro Rd. and continues until it turns on the pole route towards Glenview Ave. near STA306+10. The line crosses diagonally over US42 from approximately STA136+25 to STA137+65 to connect with the existing route.

UTILITIES AND RAIL CERTIFICATION NOTE

Jefferson County
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FD52 056 8556402U
Mile point: 20.900 TO 22.600
RECONSTRUCT/WIDEN I-264 (WATTERSON EXPRESSWAY) FROM WESTPORT ROAD (KY-1447) TO I-71,
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Kentucky Utilities – Electric – The company has transmission and distribution routes throughout the site. Transmission lines run along the south side of US-42 from STA111+38, across I-264 to the north side of the KY-22 Brownsboro Rd slip ramp near STA 3017+50. The line crosses over the intersection to the south side of KY-22 Brownsboro Rd. and continues until it turns on the pole route towards Glenview Ave. near STA306+10. The line crosses diagonally over US42 from approximately STA136+25 to STA137+65 to connect with the existing route.

Distribution lines run along a similar route as the transmission lines, with the following additions. Distribution lines cross US-42 Brownsboro Rd. near STA113+75 and Rudy Ln. near STA 17+70. This line continues along the north side of US-42 Brownsboro Rd to approximately STA119+50. Distribution lines are located along the south side of US-42 Brownsboro Rd. in the parking lot of Brownsboro Center. Distribution lines continue down the south side of KY-22 Brownsboro Rd, beyond the transmission route to STA315+36 with road crossings at approximately STA315+00, STA307+50 to STA309+50, STA304+00, and STA302+00.

Louisville Gas & Electric - Natural Gas – The company has gas mains located throughout the project. The company has an 8" medium pressure plastic gas main throughout the site. An 8" medium pressure plastic gas main crosses under I-264 near STA 5101+58. The gas main runs along the west side of the I-264W to US-22 ramp, Ramp E. The gas main continues along the southwest side of US-22 Brownsboro Rd. near STA 315+26, the gas main crosses to the north side of US-22 Brownsboro Rd. and ties into the existing 8" medium pressure steel gas main and continues to the end of the project. Road Crossings are found near STA306+25, STA303+00, and STA301+00.

An 8" medium pressure plastic gas main runs on the east side of Rudy Ln. from approximately STA10+25 to STA16+00 and turns west along the south side of US-42 Brownsboro Rd. until it ties in with the existing main near STA111+75. A 4" medium pressure plastic gas main crosses US-42 Brownsboro Rd. near STA113+25. A 4" medium pressure plastic gas main crosses under Rudy Ln. near STA18+00. The main continues east along the north side of US-42 Brownsboro Rd. to STA17+50. A 2" medium pressure gas main crosses under US-42 Brownsboro Rd. near STA117+50.

MCI/Verizon – Communication – The company has buried fiber lines throughout the project. Fiber line runs along the south side of US-42 Brownsboro Rd. from STA111+38 to a handhole box near STA112+22. The line runs under US-42 Brownsboro Rd to the and hole box on the north side near STA112+65.

Windstream Communications, LLC – Communication – The company has underground and overhead fiber cable throughout the project. Underground cables run along the north side of US-42 from approximately STA 126+25 to a handhole box at approximately STA137+50. The cable runs underground from the handhole box on the north side of US-42 near STA137+50 to the handhole box on the south

UTILITIES AND RAIL CERTIFICATION NOTE

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ITEM NUMBER: 05-804.00

side of KY-22 Brownsboro Rd near STA306+25. The cable runs east from the handhole box near STA306+25 to the pole near STA307+25. From there, the cable switches to overhead and run along LG&E poles along the south side of KY-22 moving east past STA315+50.

East of I-264 along the south side of US-42 Brownsboro Rd, overhead fiber cables run on LG&E poles from STA111+38 to near STA113+75. There are 2 road crossings over US-42 Brownsboro Rd, one near STA113+75, and the other running diagonal from near STA111+38 to near STA113+50. From the poles on the north side of US-42 Brownsboro Rd, both lines cross diagonally over Rudy Ln to the pole near outside project limits near STA19+00.

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE OWNER OR THEIR SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

AT&T - KY – Communication – The company has overhead and underground fiber and copper communication lines throughout the project. Underground lines run along the north side of US-42 from around STA126+30 to STA135+00. Overhead lines are attached to LG&E poles. The lines run along the south side of US-42 from STA111+38, across I-264 to the north side of the KY-22 Brownsboro Rd slip ramp near STA 3017+50. The line crosses over the intersection to the south side of KY-22 Brownsboro Rd. and continues until it turns on the pole route towards Glenview Ave. near STA306+10. The line crosses diagonally over US42 from approximately STA136+25 to STA137+65 to connect with the existing route. AT&T intends to be clear for construction along US 42 (east of I-264) by April 18, 2025. AT&T intends to be clear for construction along Rudy Lane and US 42 (west of I-264) by May 30, 2025. AT&T intends to be clear for construction along KY 22 by June 30, 2025.

Louisville Gas & Electric - Natural Gas – The company has an inactive gas main attached to the US 42 bridge over I-264, along the north side. LG&E will perform contamination testing on the main. If the main is found to be contaminated, LG&E or their contractor will be responsible for removal and will coordinate with the roadway contractor. **If NOT contaminated, the section of gas main on the bridge will be removed by the roadway contractor.**

The roadway contractor will need to coordinate testing and removal with LG&E. LG&E requires at least one months' notice. Coordination with LG&E and removal of the existing inactive gas main attached to the US 42 structure is incidental to REMOVE STRUCTURE.

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD CONTRACTOR AS INCLUDED IN THIS CONTRACT

Louisville Water Company – Water – The company has water mains throughout the project. Two sections of water main are to be bored under I-264. The first section is an 8" water main STA5089+25

UTILITIES AND RAIL CERTIFICATION NOTE

Jefferson County
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running from Rudy Ln. to Carlimar Ln. and tie into existing water mains. The second section is a new 12” water main and will tie into existing main on Merrifield Rd. and cut across to the east side of the I-264 to KY-22 Brownsboro Rd. ramp (Ramp E) near STA 3010+00. The 12” water main will continue between the ramp and the sound wall, and along the south side of KY-22 Brownsboro Rd. through STA 313+50, where it will tie into the existing main. Multiple road crossing will be installed along KY-22 Brownsboro Rd. and tie into existing water mains. These crossing occur at approximately STA306+50, STA07+90, 312+60, and STA 5115+00 on the slip ramp

A new 12” water main will tie into the existing main on the south side of US-42 Brownsboro Rd., near STA 111+40. The water main will turn south along the west side of Rudy Ln. and connect to an existing main near Merrifield Rd. The pipe will tee and follow along the north side of Merrifield Rd and tie into the section that will be bored under I-264. Existing water main will remain along the south side US-42 Brownsboro Rd. in front of Brownsboro Center. A crossing will run under US-42 Brownsboro road at approximately STA113+50 from the south and tie into an existing water main crossing from the north. Road crossing will run under Rudy Ln. at approximately STA17+75, STA15+50 on the west to STA16+25 on the east, STA11+60.

A 12” water main will be installed along the north side of US-42 Brownsboro Rd. between Northfield Dr. and I-264. The main will tie into the existing main near STA127+60. Around STA 124+91, the main will run under US-42 Brownsboro Rd and tie into the existing main on the south side of the road.

Sections of existing water mains are to be abandoned or removed. The section of water main running over I-264 attached to the south side of the US-42 Brownsboro Rd. overpass is to be removed. Water main running underneath KY-22 Brownsboro Rd. will be abandoned.

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☒ No Rail Involvement ☐ Rail Involved ☐ Rail Adjacent

UTILITIES AND RAIL CERTIFICATION NOTE

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AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
AT&T - KY - Communication	1340 E. John Rowan Blvd Bardstown KY 40004	Scott Roche	(502) 348-4528	sr8832@att.com
Charter Communications - Communication	1018 Linn Station Road Louisville KY 40223	Michael (Ben) York	(502) 548-1632	Michael.York@charter.com
Kentucky Utilities - Electric	820 West Broadway Louisville KY 40202	Caroline Justice	(502) 627-3708	Caroline.Justice@lge-ku.com
Louisville Gas & Electric - Natural Gas	820 West Broadway Louisville KY 40202	Caroline Justice	(502)627-3708	caroline.justice@lge-ku.com
Louisville Water Company - Water	550 South Third Street Louisville KY 40202	Pat Howard	(502) 569-3615	phoward@louisvillewater.com
MCI/Verizon - Communication		Jeff Tucker	(502) 830-1827	jeffrey.tucker@verizon.com
Metropolitan Sewer District - Sewer	700 West Liberty Street Louisville KY 40203	Taylor Friesz	(502) 540-6163	Taylor.Friesz@louisvillemsd.org
Windstream Communications, LLC - Communication	111 S. Main St Elizabethtown KY 42701	James Galvin	(270) 765-1818	james.galvin@windstream.net

UTILITIES AND RAIL CERTIFICATION NOTE

<p>Jefferson County NHPM 056 264 21-23 Mile point: 20.700 TO 22.927 ADDRESS CONDITION OF I 264 FROM MILEPOINT 20.7 TO MILEPOINT 22.927 (2022CCR) ITEM NUMBER: 05-20017.00</p>

PROJECT NOTES ON UTILITIES

The contractor should be aware that there is UTILITY WORK INCLUDED IN THIS ROAD CONSTRUCTION CONTRACT. The Contractor shall review the GENERAL UTILITY NOTES AND INSTRUCTIONS which may include KYTC Utility Bid Item Descriptions, utility owner supplied specifications, plans, list of utility owner preapproved subcontractors, and other instructions. Utility contractors may be added via addendum if KYTC is instructed to do so by the utility owner. Potential contractors must seek prequalification from the utility owner. Any revisions must be sent from the utility owner to KYTC a minimum of one week prior to bid opening.

For all projects under 2000 Linear feet which require a normal excavation locate request pursuant to KRS 367.4901-4917, the awarded contractor shall field mark the proposed excavation or construction boundaries of the project (also called white lining) using the procedure set forth in KRS 367.4909(9)(k). For all projects over 2000 linear feet, which are defined as a "Large Project" in KRS 367.4903(18), the awarded contractor shall initially mark the first 2000 linear feet minimally of proposed excavation or construction boundaries of the project to be worked using the procedure set forth in KRS 367.4909(9)(k). This temporary field locating of the project excavation boundary shall take place prior to submitting an excavation location request to the underground utility protection Kentucky Contact Center. For large projects, the awarded contractor shall work with the impacted utilities to determine when additional white lining of the remainder of the project site will take place. This provision shall not alter or relieve the awarded contractor from complying with requirements of KRS 367.4905 to 367.4917 in their entirety.

Please Note: The information presented in this Utility Note is informational in nature and the information contained herein is not guaranteed.

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The Kentucky Transportation Cabinet maintains the right to remove or alter portions of this contract if a utility conflict occurs. The utility facilities as noted in the previous section(s) have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless

UTILITIES AND RAIL CERTIFICATION NOTE

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specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating.

The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives. The contractor is instructed to contact KY 811 for the location of existing underground utilities. Contact shall be made a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor shall submit Excavation Locate Requests to the Kentucky Contact Center (KY 811) via web ticket entry. The submission of this request does not relieve the contractor from the responsibility of contacting non-member facility owners, whom are to be contacted through their individual Protection Notification Center. It may be necessary for the contractor to contact the County Court Clerk to determine what utility companies have facilities in the area. Non-compliance with these directives can result in the enforcement of penalties.

Utility coordination efforts determined that no significant utility relocation work is required to complete the project. Any work pertaining to these utility facilities is defined in the bid package and is to be carried out as instructed by the Kentucky Transportation Cabinet. The contractor will be responsible for any coordination or adjustments that are discussed or quantified in the proposal.

NOTE: DO NOT DISTURB FACILITIES LOCATED WITHIN THE PROJECT DISTURB LIMITS

***The Contractor is fully responsible for protection of all utilities within the project footprint.**

UTILITIES AND RAIL CERTIFICATION NOTE

<p>Jefferson County NHPM 056 264 21-23 Mile point: 20.700 TO 22.927 ADDRESS CONDITION OF I 264 FROM MILEPOINT 20.7 TO MILEPOINT 22.927 (2022CCR) ITEM NUMBER: 05-20017.00</p>

THE FOLLOWING FACILITY OWNERS ARE RELOCATING/ADJUSTING THEIR FACILITIES WITHIN THE PROJECT LIMITS AND WILL BE COMPLETE PRIOR TO CONSTRUCTION

Not Applicable

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE OWNER OR THEIR SUBCONTRACTOR AND IS TO BE COORDINATED WITH THE ROAD CONTRACT

Not Applicable

THE FOLLOWING FACILITY OWNERS HAVE FACILITIES TO BE RELOCATED/ADJUSTED BY THE ROAD CONTRACTOR AS INCLUDED IN THIS CONTRACT

Not Applicable

RAIL COMPANIES HAVE FACILITIES IN CONJUNCTION WITH THIS PROJECT AS NOTED

☒ No Rail Involvement ☐ Rail Involved ☐ Rail Adjacent

UTILITIES AND RAIL CERTIFICATION NOTE

Jefferson County
NHPM 056 264 21-23
Mile point: 20.700 TO 22.927
ADDRESS CONDITION OF I 264 FROM MILEPOINT 20.7 TO MILEPOINT 22.927 (2022CCR)
ITEM NUMBER: 05-20017.00

UTILITIES AND RAIL CERTIFICATION NOTE

<p align="center"> Jefferson County NHPM 056 264 21-23 Mile point: 20.700 TO 22.927 ADDRESS CONDITION OF I 264 FROM MILEPOINT 20.7 TO MILEPOINT 22.927 (2022CCR) ITEM NUMBER: 05-20017.00 </p>

AREA FACILITY OWNER CONTACT LIST

Facility Owner	Address	Contact Name	Phone	Email
AT&T - KY - Communication	1340 E. John Rowan Blvd Bardstown KY 40004	Scott Roche	(502) 348-4528	sr8832@att.com
Charter Communications - Communication	1018 Linn Station Road Louisville KY 40223	Michael (Ben) York	(502) 548-1632	Michael.York@charter.com
Kentucky Utilities - Electric	820 West Broadway Louisville KY 40202	Caroline Justice	(502) 627-3708	Caroline.Justice@lge-ku.com
Louisville Gas & Electric - Natural Gas	820 West Broadway Louisville KY 40202	Caroline Justice	(502)627-3708	caroline.justice@lge-ku.com
Louisville Water Company - Water	550 South Third Street Louisville KY 40202	Pat Howard	(502) 569-3615	phoward@louisvillewater.com
MCI/Verizon - Communication	2421 Holloway Road Louisville, KY 40299	Jeff Tucker	(502) 830-1827	jeffrey.tucker@verizon.com
Metropolitan Sewer District - Sewer	700 West Liberty Street Louisville KY 40203	Taylor Friesz	(502) 540-6163	Taylor.Friesz@louisvillemsd.org
Windstream Communications, LLC - Communication	111 S. Main St Elizabethtown KY 42701	James Galvin	(270) 765-1818	james.galvin@windstream.net

GENERAL UTILITY NOTES AND INSTRUCTIONS APPLICABLE TO ALL UTILITY WORK MADE A PART OF THE ROAD CONSTRUCTION CONTRACT

The contractor should be aware the following utility notes and KYTC Utility Bid Item Descriptions shall supersede, replace and take precedence over any and all conflicting information that may be contained in utility owner supplied specifications contained in the contract, on plans supplied by the utility owner, or any utility owner specifications or information externally referenced in this contract.

Where information may have been omitted from these notes, bid item descriptions, utility owner supplied specifications or plans; the KYTC Standard Specifications for Road and Bridge Construction shall be referenced.

PROTECTION OF EXISTING UTILITIES

The existing utilities shown on the plans are shown as best known at the time the plans were developed and are to be used as a guide only by the Contractor. The Contractor shall use all means at his disposal to accurately locate all existing utilities, whether shown on the plans or not, prior to excavation. The contractor shall protect these utilities during construction. Any damage to existing utilities during construction that are shown or not shown on the plans shall be repaired at the Contractor's expense.

The contractor will be responsible for contacting all utility facility owners on the subject project to coordinate his activities. The contractor will coordinate his activities to minimize and, where possible, avoid conflicts with utility facilities. Due to the nature of the work proposed, it is unlikely to conflict with the existing utilities beyond minor facility adjustments. Where conflicts with utility facilities are unavoidable, the contractor will coordinate any necessary relocation work with the facility owner and Resident Engineer. The utility facilities depicted in the plans have been determined using data garnered by varied means and with varying degrees of accuracy: from the facility owners, a result of S.U.E., field inspections, and/or reviews of record drawings. The facilities defined may not be inclusive of all utilities in the project scope and are not Level A quality, unless specified as such. It is the contractor's responsibility to verify all utilities and their respective locations before excavating. The contractor shall make every effort to protect underground facilities from damage as prescribed in the Underground Facility Damage Protection Act of 1994, Kentucky Revised Statute KRS 367.4901 to 367.4917. It is the contractor's responsibility to determine and take steps necessary to be in compliance with federal and state damage prevention directives.

PREQUALIFIED UTILITY CONTRACTORS

Some utility owners may require contractors that perform relocation work on their respective facilities as a part of the road contract be prequalified or preapproved by the utility owner. **Utility contractors may be added via addendum if KYTC is instructed to do so by the utility owner. Potential contractors must seek prequalification from the utility owner. Any revisions must be sent from the utility owner to KYTC a minimum of one week prior to bid opening.** Those utility owners with a prequalification or preapproval requirement are as follows:

Louisville Water Company

The bidding contractor needs to choose a subcontractor who is a Louisville Water Company prequalified contractor in the categories of 04-inch to 12-inch ductile iron and pvc water main.

The bidding contractor needs to review the above list and choose from the list of approved subcontractors at the end of these general notes as identified above before bidding. When the list of approved subcontractors is provided, only subcontractors shown on the following list(s) will be allowed to work on that utility as a part of this contract. In such instances, the utility subcontractor is not required to be prequalified with the KYTC Division of Construction Procurement.

IF A UTILITY SUPPLIED CONTRACTOR LIST IS NOT PROVIDED

When the above list of approved subcontractors for the utility work is not provided, the utility work can be completed by the prime contractor, or a prime contractor-chosen subcontractor. In such instances, the subcontractor shall be prequalified with the KYTC Division of Construction Procurement in the work type of "Utilities" (I33). Those who would like to become prequalified may contact the Division of Construction Procurement at (502) 564-3500. Please note: it could take up to 30 calendar days for prequalification to be approved. The prequalification does not have to be approved prior to the bid, but must be approved before the subcontract will be approved by KYTC and the work can be performed.

CONTRACT ADMINISTRATION RELATIVE TO UTILITY WORK

All utility work is being performed as a part of a contract administered by KYTC; there is not a direct contract between the utility contractor and utility owner. The KYTC Section Engineer is ultimately responsible for the administration of the road contract and any utility work included in the contract.

SUBMITTALS AND CORRESPONDENCE

All submittals and correspondence of any kind relative to utility work included in the road contract shall be directed to the KYTC Section Engineer, a copy of which may also be supplied to the utility owner by the contractor to expedite handling of items like material approvals and shop drawings. All approvals and correspondence generated by the utility owner shall be directed to the KYTC Section Engineer. The KYTC Section Engineer will relay any approvals or correspondence to the utility contractor as appropriate. At no time shall any direct communication between the utility owner and utility contractor without the

communication flowing through the KYTC Section Engineer be considered official and binding under the contract.

ENGINEER

Where the word “Engineer” appears in any utility owner specifications included in this proposal, utility owner specifications included as a part of this contract by reference or on the utility relocation plans, it shall be understood the “Engineer” is the Kentucky Transportation Cabinet (KYTC) Section Engineer or designated representative and the utility owner engineer or designated representative jointly. Both engineers must mutually agree upon all decisions made with regard to the utility construction. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

INSPECTOR OR RESIDENT PROJECT REPRESENTATIVE

Where the word “Inspector” or “Resident Project Representative” appears in the utility specifications included in this proposal, utility owner specifications included as a part of this contract by reference or on the utility relocation plans, it shall be understood the “Inspector” or “Resident Project Representative” is the utility owner inspector and KYTC inspector jointly. The Transportation Cabinet, Section Engineer shall make all final decisions in all disputes.

NOTICE TO UTILITY OWNERS OF THE START OF WORK

One month before construction is to start on a utility, the utility contractor shall make notice to the KYTC Section Engineer and the utility owner of when work on a utility is anticipated to start. The utility contractor shall again make confirmation notice to the KYTC Section Engineer and the utility owner one week before utility work is to actually start.

UTILITY SHUTDOWNS

The Contractor shall not shut down any active and in-service mains, utility lines or services for any reason unless specifically given permission to do so by the utility owner. The opening and closing of valves and operating of other active utility facilities for main, utility line or utility service shut downs are to be performed by the utility owner unless specific permission is given to the contractor by the owner to make shutdowns. If and when the utility owner gives the contractor permission to shutdown mains, utility lines or utility services, the contractor shall do so following the rules, procedures and regulations of the utility owner. Any permission given by the utility owner to the contractor to shutdown active and in-service mains, utility lines or services shall be communicated to the KYTC Section Engineer by the utility owner that such permission has been given.

Notice to customers of utility shut downs is sometimes required to be performed by the utility contractor. The contractor may be required; but, is not limited to, making notice to utility customers in a certain minimum amount of time in advance of the shut down and by whatever means of communication specified by the utility owner. The means of communication to the customer may be; but is not limited to, a door hanger, notice by newspaper ad, telephone contact, or any combination of communication methods deemed necessary, customary and appropriate by the utility owner. The contractor should refer to the utility owner specifications for requirements on customer notice.

Any procedure the utility owner may require the contractor to perform by specification or plan note and any expense the contractor may incur to comply with the utility owner’s shut down procedure and notice to customers shall be considered an incidental expense to the utility construction.

CUSTOMER SERVICE AND LATERAL ABANDONMENTS When temporary or permanent abandonment of customer water, gas, or sewer services or laterals are necessary during relocation of utilities included in the contract, the utility contractor shall perform these abandonments as part of the contract as incidental work. No separate payment will be made for service line and lateral abandonments. The contractor shall provide all labor, equipment and materials to accomplish the temporary or permanent abandonment in accordance with the plans, specifications and/or as directed by the engineer. Abandonment may include, but is not limited to, digging down on a water or gas main at the tap to turn off the tap valve

or corporation stop and/or capping or plugging the tap, digging down on a sewer tap at the main and plugging or capping the tap, digging down on a service line or lateral at a location shown on the plans or agreeable to the engineer and capping or plugging, or performing any other work necessary to abandon the service or lateral to satisfactorily accomplish the final utility relocation.

STATIONS AND DISTANCES

All stations and distances, when indicated for utility placement in utility relocation plans or specifications, are approximate; therefore, some minor adjustment may have to be made during construction to fit actual field conditions. Any changes in excess of 6 inches of plan location shall be reviewed and approved jointly by the KYTC Section Engineer or designated representative and utility owner engineer or designated representative. Changes in location without prior approval shall be remedied by the contractor at his own expense if the unauthorized change creates an unacceptable conflict or condition.

RESTORATION

Temporary and permanent restoration of paved or stone areas due to utility construction shall be considered incidental to the utility work. No separate payment will be made for this work. Temporary restoration shall be as directed by the KYTC Section Engineer. Permanent restoration shall be “in-kind” as existing.

Restoration of seed and sod areas will be measured and paid under the appropriate seeding and sodding bid items established in the contract for roadway work.

BELOW ARE NOTES FOR WHEN “INST” ITEMS ARE IN THE CONTRACT MEANING THE UTILITY COMPANY IS PROVIDING CERTAIN MATERIALS FOR UTILITY RELOCATION

MATERIAL

Contrary to Utility Bid Item Descriptions, those bid items that have the text “**Inst**” at the end of the bid item will have the major components of the bid item provided by the utility owner. No direct payment will be made for the major material component(s) supplied by the utility company. All remaining materials required to construct the bid item as detailed in utility bid item descriptions, in utility specifications and utility plans that are made a part of this contract will be supplied by the contractor. The contractor’s bid price should reflect the difference in cost due to the provided materials.

The following utility owners have elected to provide the following materials for work under this contract:

No materials are being supplied by the utility owner(s). All materials are to be supplied by the contractor per bid item descriptions, utility specifications and utility plans.

SECURITY OF SUPPLIED MATERIALS

If any utility materials are to be supplied by the utility owner, it will be the responsibility of the utility contractor to secure all utility owner supplied materials after delivery to the project site. The utility contractor shall coordinate directly with the utility owner and their suppliers for delivery and security of

the supplied materials. Any materials supplied by the utility owner and delivered to the construction site that are subsequently stolen, damaged or vandalized and deemed unusable shall be replaced with like materials at the contractor's expense.

Standard Water Bid Item Descriptions

THESE BID ITEM DESCRIPTIONS SHALL SUPERCEDE ANY BID ITEM DESCRIPTIONS CONTAINED IN UTILITY OWNER SUPPLIED SPECIFICATIONS PROVIDED ELSEWHERE IN THIS PROPOSAL.

W AIR RELEASE VALVE This bid item description shall apply to all air release valve installations of every size except those defined as “Special”. This item shall include the air release valve, main to valve connecting line or piping, manhole, vault, structure, access casting or doors, tapping the main, labor, equipment, excavation, proper backfill, and restoration required to install the air release valve at the location shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready-for-use. Please refer to the Utility Company’s Specifications. If the Company does not have specifications, KYTC’s Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

BOLLARDS This item is for payment for furnishing and installing protective guard posts at above-ground utility installations. A bollard may consist of, but is not limited to, a steel post set in concrete or any other substantial post material. This item shall include all labor, equipment, and materials needed for complete installation of the bollard, as specified by the utility owner specifications and plans. If the Company does not have specifications, KYTC’s Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

NOTE: A bid code for this item has been established in standard roadway bid items and shall be used for payment of this item. The bid code is 2134IND.

W CAP EXISTING MAIN This item shall include the specified cap, concrete blocking and/or mechanical anchoring, labor, equipment, excavation, backfill, and restoration required to install the cap on an existing main to be left in service at the location shown on the plans or as directed, in accordance with the specifications. This item is not to be paid to cap new main installations or mains that are to be abandoned. This pay item is only to be paid to cap existing mains to be left in service. Caps on new mains are to be considered incidental to the new main, as are other fittings, and are not to be paid under this item. All caps on existing mains shall be paid under this one bid item included in the contract, regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company’s Specifications. If the Company does not have specifications, KYTC’s Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

Plugging of existing abandoned mains shall be performed and paid in accordance with Section 708.03.05 of KYTC Standard Specifications for Road and Bridge Construction, using Bid code 01314, Plug Pipe.

W CATHODIC PROTECTION This item is for providing and installing all cathodic protection materials to iron pipe and fittings, as specified in plans and specifications, complete and ready-for-use. Materials to be supplied and installed by the contractor shall include, but are not limited to, anodes, wire, fusion kits, test stations, and/or marker posts. All cathodic protection required for the entire project shall be paid under this one item. Please refer to the Utility Company’s Specifications. If the Company does not have specifications, KYTC’s Specifications shall be referenced. This item shall be paid LUMP SUM (LS) when complete.

W DIRECTIONAL BORE Payment under this item is made whenever the plans or specifications specifically show directional boring is to be utilized to minimize the impact of open-cut for the installation of water main under streets, creeks, etc. Payment under this item shall include the specified bore pipe, labor, and equipment. No separate payment shall be made for bore pipe installed in the bore, whether used as a carrier pipe or an encasement of a separate carrier pipe. This item shall also include pipe anchors at

each end of the bore, when specified, to prevent the creep or contraction of the bore pipe. Carrier pipe installed within a bore pipe shall be paid separately under pipe items. Payment under this item shall not be size specific and no separate bid items will be established for size variations. The bore pipe sizes to be included under this item shall be as shown on the plans and/or in the specifications. Any and all directional bores in each contract shall be paid under one directional bore bid item included in the contract, regardless of size. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT CONCRETE This item shall include all labor, equipment, excavation, concrete, reinforcing steel, backfill, restoration, etc., to construct the concrete encasement of the water main as shown on the plans, and in accordance with the specifications and standard drawings. Payment under this item shall be in addition to the carrier pipe, as paid under separate bid items. Carrier pipe is not included in this bid item. Any and all concrete encasements shall be paid under one bid item included in the contract, regardless of the size of the carrier pipe or the volume of concrete or steel reinforcement, as specified in the plans and specifications. No separate bid items will be established for size variations. Measurement of pay quantity shall be from end of concrete to end of concrete. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT STEEL BORED This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to bore and install the encasement in accordance with the plans and specifications, complete and ready-for-use. The size shall be the measured internal diameter of the encasement pipe. The sizes of encasement to be paid under the size ranges specified in the bid items shall be as follows:

- Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
- Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
- Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
- Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
- Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
- Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately but shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W ENCASEMENT STEEL OPEN CUT This item shall include the steel encasement pipe size as specified on the plans and in the specifications, casing spacers, end seals, labor, and equipment to open-cut and install the encasement in accordance with the plans and specifications, complete and ready-for-use. The size shall be the measured internal diameter of the encasement pipe. The size encasement to be paid under the size ranges specified in the bid items shall be as follows:

- Range 1 = All encasement sizes greater than 2 inches to and including 6 inches
- Range 2 = All encasement sizes greater than 6 inches to and including 10 inches
- Range 3 = All encasement sizes greater than 10 inches to and including 14 inches
- Range 4 = All encasement sizes greater than 14 inches to and including 18 inches
- Range 5 = All encasement sizes greater than 18 inches to and including 24 inches
- Range 6 = All encasement sizes greater than 24 inches

(Encasement sizes of 2 inches internal diameter or less shall not be paid separately but shall be considered incidental to the carrier pipe.) Payment under this bid item shall not include the carrier pipe. Carrier pipe shall be paid under a separate bid item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W FIRE HYDRANT ADJUST This item includes all labor, equipment, excavation, materials, and backfill to adjust the existing fire hydrant using the fire hydrant manufacturer's extension kit for adjustments of 18" or less. Adjustments greater than 18" require anchoring couplings and vertical bends to adjust to grade. The Contractor will supply and install all anchor couplings, bends, fire hydrant extension, concrete blocking, restoration, granular drainage material, etc., needed to adjust the fire hydrant, complete and ready-for-use as shown on the plans, and in accordance with the specifications and standard drawings. This also includes allowing for the utility owner inspector to inspect the existing fire hydrant prior to adjusting, contractor returning unusable fire hydrants to the utility owner warehouse and picking up a replacement hydrant. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete and ready for use.

W FIRE HYDRANT ASSEMBLY This item includes all labor, equipment, new fire hydrant, isolating valve and valve box, concrete pad around valve box (when specified in specifications or plans), piping, anchoring tee, anchoring couplings, fire hydrant extension, excavation, concrete blocking, granular drainage material, backfill, and restoration, to install a new fire hydrant assembly as indicated on plans and standard drawings, complete and ready-for-use. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FIRE HYDRANT RELOCATE This item includes all labor and equipment to remove the existing fire hydrant from its existing location and to reinstall at a new location. This item shall include a new isolating valve and valve box, concrete pad around valve box (when required in specifications or plans), new piping, new anchoring tee, anchoring couplings, fire hydrant extensions, concrete blocking, restoration, granular drainage material, excavation, and backfill as indicated on plans, specifications, and standard drawings, complete and ready-for-use. This item shall also include allowing for utility owner inspector to inspect the existing fire hydrant prior to reuse, contractor returning unusable fire hydrants to the utility owner warehouse and picking up a replacement hydrant for use if the existing fire hydrant is determined unfit for reuse. No additional payment will be made for rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FIRE HYDRANT REMOVE This item includes removal of an abandoned fire hydrant, isolating valve, and valve box, to the satisfaction of the engineer. The removed fire hydrant, isolating valve, and valve box shall become the property of the contractor for his disposal as salvage or scrap. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FLUSH HYDRANT ASSEMBLY This item shall include the flushing hydrant assembly, service line, tapping the main, labor, equipment, excavation, backfill, and restoration required to install the flush hydrant at the location shown on the plans and in accordance with the specifications and standard drawings, complete and ready-for-use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W FLUSHING ASSEMBLY This item shall include the flushing device assembly, service line, meter box and lid, tapping the main, labor, equipment, excavation, backfill, and restoration required to install the flushing device at the location shown on the plans and in accordance with the specifications and standard drawings, complete and ready-for-use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W LEAK DETECTION METER This item is for payment for installation of a water meter at main valve locations, as shown on the plans, for detection of water main leaks. The meter shall be of the size and type specified in the plans or specifications. This item shall include all labor, equipment, meter, meter box or vault, connecting pipes between main and meter, main taps, tapping saddles, casting, yoke, and any other associated material needed for installation of a functioning water meter in accordance with the plans and specifications, complete and ready-for-use. No separate payment will be made under any other contract item for connecting pipe or main taps. All leak detection meters shall be paid under one bid item included in the contract, regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete and ready for use.

W LINE MARKER This item is for payment for furnishing and installing a water utility line marker as specified by the utility owner specifications and plans. A line marker may consist of a post or monument of whatever materials specified and shall include markings and/or signage on same as specified by plans or specifications. This item shall include all labor, equipment, and materials needed for complete installation of the marker. This item shall be paid EACH (EA) when complete.

W LINE STOP SIZE 1 OR 2 This item shall include the line stop saddle/sleeve, valve, completion plug and any other material, labor, and equipment necessary to complete the line stop as indicated in the plans and/or specifications. This installation shall allow the waterline system to operate as usual without any interruption of service. The size shall be the measured internal diameter of the live pipe to be tapped. The line stop size to be paid under sizes 1 or 2 shall be as follows:

Size 1 = All live tapped main sizes up to and including 8 inches

Size 2 = All live tapped main sizes greater than 8 inches

Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W MAIN POINT RELOCATE This item is intended for payment for horizontal and/or vertical relocation of a short length of an existing main at the location shown on the plans. This bid item is to be used to relocate an existing water main at point locations, such as to clear a conflict at a proposed drainage structure, pipe, or any other similar short relocation situation, and where the existing pipe material is to be reused. The contractor shall provide any additional pipe or fitting material needed to complete the work, as shown on the plans and specifications. The materials provided shall be of the same type and specifications as those that exist. Substitution of alternative materials shall be approved by the engineer in advance on a case-by-case basis. New polyethylene wrap is to be provided (if wrap exists or is specified in the specifications to be used). If it is necessary that the pipe be disassembled for relay, payment under this item shall also include replacement of joint gaskets as needed. Bedding and backfill shall be provided and performed the same as with any other pipe installation as detailed in the plans and specifications. Payment under this item shall be for each location requiring an existing main to be relocated horizontally or vertically, regardless of pipe size or relocation length. No separate pay items will be established for pipe size variations or relocation segment length variations. Water Main Relocate shall not be paid on a linear feet basis but shall be paid EACH (EA) at each location when complete and placed in service. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced.

W METER This item is for payment for installation of all standard water meters of all sizes 2 inches in diameter or less as specified on the plans. This item shall include all labor, equipment, meter, meter box, casting, yoke, and any other associated materials needed for installation of a functioning water meter, in accordance with the plans and specifications, complete and ready-for-use. This item shall include connections to the new or existing water service line. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER ADJUST This item includes all labor, equipment, excavation, materials, backfill, restoration, etc., to adjust the meter casting to finished grade (whatever size exists) at the location shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready-for-use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER RELOCATE This item includes all labor, equipment, excavation, additional fittings, disinfection, testing, restoration, etc., to relocate the existing water meter (whatever size exists), meter yoke, meter box, casting, etc., from its old location to the location shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready-for-use. The new service pipe (if required) will be paid under the short side or long side service bid item. Any and all meter relocations of 2 inches or less shall be paid under one bid item included in the contract, regardless of size. Each individual relocation shall be paid individually under this item; however, no separate bid items will be established for meter size variations of 2 inches in diameter or less. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER VAULT SIZE RANGE 1 OR 2 This item is for payment for installation of an underground structure for housing of a large water meter, fittings, and valves as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or access doors, the specified meter(s) valve(s), all piping, and fitting materials associated with installing a functioning meter and vault in accordance with the plans, standard drawings, and specifications, complete and ready-for-use. The size shall be the measured internal diameter of the meter and piping to be installed. The size meter vault to be paid under size 1 or 2 shall be as follows:

Size Range 1 = All meter and piping sizes greater than 2 inches up to and including 6 inches
Size Range 2 = All meter and piping sizes greater than 6 inches

This item shall be paid EACH (EA) when complete. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced.

W METER/FIRE SERVICE COMBO VAULT This item is for payment for installation of an underground structure for housing of a water meter and fire service piping, fittings, and valves as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or access doors, the specified meter(s), valve(s), all piping, and fitting materials associated with installing a functioning meter and fire service vault, in accordance with the plans and specifications, complete and ready-for-use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W METER WITH PRESSURE REDUCING VALVE (PRV) This item is for payment for installation of all standard water meters with pressure reducing valves (PRV) of all sizes 2 inches in diameter or less,

as specified on the plans. This item shall include all labor, equipment, meter, PRV, meter box, casting, yoke, and any other associated materials needed for installation of a functioning water meter with PRV, in accordance with the plans and specifications, complete and ready-for-use. This item shall include connections to the new or existing water service line. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W PIPE This item shall apply to all pipe of every size and type material to be used as water main, except those bid items defined as "Special". This item includes the pipe specified by the plans and specifications, all fittings (including, but not limited to, bends, tees, reducers, plugs, and caps), tracing wire with test boxes (if required by specifications), polyethylene wrap (when specified), labor, equipment, excavation, bedding, backfill, restoration, testing, sanitizing, etc., required to install the specified new pipe and new fittings at the locations shown on the plans, or as directed, in accordance with the specifications and standard drawings, complete and ready-for-use. No additional payment will be made for rock excavation. This bid item includes material and placement of flowable fill under existing and proposed pavement, and wherever else specified on the plans or in the specifications. This item shall include all temporary and permanent materials, as well as equipment required to pressure test and sanitize mains including, but not limited to, pressurization pumps, hoses, tubing, gauges, main taps, saddles, temporary main end caps or plugs and blocking, main end taps for flushing, chlorine liquids or tablets for sanitizing, water for testing/sanitizing and flushing (when not supplied by the utility), chlorine neutralization equipment and materials, and any other items needed to accomplish pressure testing and sanitizing the main installation. This item shall also include pipe anchors at each end of polyethylene pipe runs, when specified to prevent the creep or contraction of the pipe. When owner specifications require, this bid item shall include contractor preparation of as-built drawings to be provided to the engineer and/or utility owner at the end of construction. Measurement of quantities under this item shall be through fittings, encasements, and directional bores (only when a separate carrier pipe is specified within the directional bore pipe). Measurements shall be further defined to be to the center of tie-in where new pipe contacts existing pipe at the center of connecting fittings, to the outside face of vault or structure walls, or to the point of main termination at dead ends. No separate payment will be made under pipe items when the directional bore pipe is the carrier pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W PLUG EXISTING MAIN This item shall include the specified plug, concrete blocking and/or mechanical anchoring, labor, equipment, excavation, backfill, and restoration required to install the plug on an existing main to be left in service at the location shown on the plans or as directed, in accordance with the specifications. This item is not to be paid to plug new main installations or mains that are to be abandoned. This pay item is only to be paid to plug existing mains that are to be left in service. Plugs on new mains are to be considered incidental to the new main, as are other fittings, and are not to be paid under this item. All plugs on existing mains left in service shall be paid under this one bid item included in the contract, regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

Plugging of existing abandoned mains shall be performed and paid in accordance with Section 708.03.05 of KYTC Standard Specifications for Road and Bridge Construction, using Bid code 01314, Plug Pipe.

W PRESSURE REDUCING VALVE This item shall apply to all pressure reducing valves (PRV) of every size required in the plans and specifications, except those bid items defined as "Special". Payment under this description is to be for PRVs being installed with new main. This item includes the PRV as specified in the plans and specifications, polyethylene wrap (if required by specification), labor, equipment, excavation, anchoring (if any), pit or vault, backfill, restoration, testing, disinfection, etc., required to install the specified PRV at the location shown on the plans, in accordance with the specifications and standard

drawings, complete and ready-for-use. If required on the plans and/or proposed adjoining DIP is restrained, PRVs shall be restrained. PRV restraint shall be considered incidental to the PRV and adjoining pipe. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W PUMP STATION This item is for payment for installation of pumps and an above or below ground structure for housing of the pumps. This item shall include all pumps, piping, fittings, valves, electrical components, building materials, concrete, any other appurtenances, labor, equipment, excavation, and backfill, to complete the pump station installation as required by the plans, standard drawings, and specifications, complete and ready-for-use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LUMP SUM (LS) when complete.

W REMOVE TRANSITE (AC) PIPE This item shall include all labor, equipment, and materials needed for removal and disposal of the pipe as hazardous material. All work shall be performed by trained and certified personnel, in accordance with all environmental laws and regulations.

Any and all transite AC pipe removed shall be paid under one bid item included in the contract, regardless of size. No separate bid items will be established for size variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid LINEAR FEET (LF) when complete.

W SERVICE LONG SIDE This item shall apply to all service line installations of every size bid up to and including 2-inch inside diameter, except those service bid items defined as "Special". This item includes the specified piping material, main tap, tapping saddle (if required), corporation stop materials, coupling for connecting the new piping to the surviving existing piping, encasement of 2 inches or less internal diameter (if required by plans or specifications), labor, equipment, excavation, backfill, testing, disinfection, and restoration, at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready-for-use. This bid item is to pay for service installations where the ends of the service connection are on opposite sides of the public roadway and the service line crosses the centerline of the public roadway, as shown on the plans. The length of the service line is not to be specified. Payment under this item shall not be restricted by a minimum or maximum length. The contractor shall draw his own conclusions as to the length of piping that may be needed. Payment under this item shall include boring, jacking, or excavating across the public roadway for placement. Placement of a service across a private residential or commercial entrance alone shall not be reason to make payment under this item. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. This pay item does not include installation or relocation of meters. Meters will be paid separately. No additional payment will be made for rock excavation or for special bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W SERVICE SHORT SIDE This item shall apply to all service line installations of every size up to and including 2-inch internal diameter, except those service bid items defined as "Special". This item includes installation of the specified piping material of the size specified on plans, encasement of 2 inches or less internal diameter (if required by plans or specifications), main tap, tapping saddle (if required), corporation stop, coupling for connecting the new piping to the surviving existing piping, labor, equipment, excavation, backfill, testing, disinfection, and restoration at the locations shown on the plans or as directed, in accordance with the specifications and standard drawings, complete and ready-for-use. This bid item is to pay for service installations where both ends of the service connection are on the same side of the public roadway, or when an existing service crossing a public roadway will remain and is being extended, reconnected, or relocated, with all work on one side of the public roadway centerline as shown on the plans. The length of

the service line is not to be specified and shall not be restricted to any minimum or maximum length. Placement of a service lateral across a private residential or commercial entrance alone shall not be reason to make payment under this item. Private or commercial entrances shall not be considered a public roadway in defining payment under this item. The contractor shall draw his own conclusions as to the length of piping that may be needed. This pay item does not include installation or relocation of meters. Meters will be paid separately. No additional payment will be made for rock excavation or for bedding required in rock excavation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W SERVICE RELOCATE This item is for the relocation of an existing water service line where a meter is not involved, and where an existing service line can easily be adjusted by excavating alongside and moving the line horizontally and/or vertically a short distance without cutting the service line to avoid conflicts with road construction. This item shall include excavation, labor, equipment, bedding, and backfill to relocate the line, in accordance with the plans and specifications, complete and ready-for-use. Payment under this item shall be for each location requiring relocation. Payment shall be made under this item regardless of service size or relocation length. No separate pay items will be established for size or length variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W STRUCTURE ABANDONMENT This item is to be used to pay for abandonment of larger above or below ground water structures such as meter vaults, fire pits, pump stations, tanks, etc. Payment under this item shall not be limited to size or scope; however, structures with connecting pipes of 2 inches or less shall not be paid under this item but shall be considered incidental to water construction (i.e., abandonment of standard water meters up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted fill or flowable fill for abandonment of the structure in-place and complete restoration. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W STRUCTURE REMOVAL This item is to be used to pay for removal of larger above or below ground water structures such as meter vaults, fire pits, pump stations, tanks, etc. Payment under this item shall not be limited to size or scope; however, structures with connecting pipes of 2 inches or less shall not be paid under this item but shall be considered incidental to water construction (i.e., removal of standard water meters up to and including 2 inches would not be paid under this item). Payment under this item shall include all labor, equipment, and compacted backfill for removal of the structure and complete restoration. No separate bid items will be established for size or structure variations. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W TAPPING SLEEVE AND VALVE SIZE 1 OR 2 This item shall include the specified tapping sleeve, valve, valve box, concrete pad around valve box (when required in specifications or plans), labor, and equipment to install the specified tapping sleeve and valve, complete and ready-for-use, in accordance with the plans and specifications. The size shall be the measured internal diameter of the live pipe to be tapped. The size tapping sleeve and valve to be paid under sizes 1 or 2 shall be as follows:

- Size 1 = All live tapped main sizes up to and including 8 inches
- Size 2 = All live tapped main sizes greater than 8 inches

Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W TIE-IN This item shall be used for all main tie-in bid items of every size, except those defined as “Special”. This item includes all labor, equipment, excavation, fittings, sleeves, reducers, couplings, blocking, anchoring, restoration, disinfection, testing, and backfill required to make the water main tie-in as shown on the plans and in accordance with the specifications, complete and ready-for-use. Pipe for tie-ins shall be paid under separate bid items. This item shall be paid EACH (EA) when complete.

Plugging of existing abandoned mains shall be performed and paid in accordance with Section 708.03.05 of KYTC Standard Specifications for Road and Bridge Construction, using Bid code 01314, Plug Pipe.

W VALVE This item shall apply to all valves of every size required in the plans and specifications, except those bid items defined as “Special”. Payment under this description is to be for gate or butterfly valves being installed with new main. This item includes the valve as specified in the plans and specifications, polyethylene wrap (if required by specifications), labor, equipment, excavation, anchoring (if any), valve box and valve stem extensions, backfill, concrete pad around valve box (if required by specifications), restoration, testing, disinfection, etc., required to install the specified valve at the location shown on the plans, in accordance with the specifications and standard drawings, complete and ready-for-use. If required on plans and/or proposed adjoining DIP is restrained, valves shall be restrained. Valve restraint shall be considered incidental to the valve and adjoining pipe. This description does not apply to cut-in valves. Please refer to the Utility Company’s Specifications. If the Company does not have specifications, KYTC’s Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE ANCHOR EXISTING This item is intended to pay for installation of restraint hardware on an existing valve where no restraint exists, to hold the valve in place to facilitate tie-ins and other procedures where restraint is prudent. This work shall be performed in accordance with water specifications and plans. This bid item shall include all labor, equipment, excavation, materials, and backfill to complete restraint of the designated valve, regardless of size, at the location shown on the plans, complete and ready-for-use. Materials to be provided may include, but are not limited to, retainer glands, lugs, threaded rod, concrete, reinforcing steel, or any other material needed to complete the restraint. Should the associated valve box require removal to complete the restraint, the contractor shall reinstall the existing valve box, the cost of which shall be considered incidental to this bid item. No separate bid items are being provided for size variations. All sizes shall be paid under one bid item. Please refer to the Utility Company’s Specifications. If the Company does not have specifications, KYTC’s Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE BOX ADJUST This item include all labor, equipment, valve box and valve stem extensions (if required), excavation, backfill, concrete pad around valve box (when specified in specifications or plans), restoration, etc., to adjust the top of the box to finished grade, complete and ready-for-use. Please refer to the Utility Company’s Specifications. If the Company does not have specifications, KYTC’s Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE BOX REMOVE This item is in payment for all labor, equipment, restoration materials, disposal, and any other effort for removal of a valve box, leaving the valve in place. Please refer to the Utility Company’s Specifications. If the Company does not have specifications, KYTC’s Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE CUT-IN This item is for new cut-in valve installations of all sizes, where installation is accomplished by cutting out a section of existing main. This item shall include cutting the existing pipe, supplying the specified valve, couplings or sleeves, valve box, concrete pad around valve box (when required in specifications or plans), labor, equipment, and materials to install the valve at the locations

shown on the plans, or as directed by the engineer, complete and ready-for-use. Any pipe required for installation shall be cut from that pipe removed or supplied new by the contractor. No separate payment will be made for pipe required for cut-in valve installation. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

W VALVE REMOVE This item is in payment for all labor, equipment, and restoration materials for cutting of existing pipe and any other effort necessary for total removal of an existing valve and valve box. This bid item shall include disposal of the valve and box, unless plans or specifications state the valve and box are to be salvaged and delivered to the utility owner for reuse. No separate pay items are to be established for size variations. All valve removals, regardless of size, shall be paid under this one pay item. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.

If plugging of existing abandoned mains is needed after valve removal, the work shall be performed and paid in accordance with Section 708.03.05 of KYTC Standard Specifications for Road and Bridge Construction, using Bid code 01314, Plug Pipe.

W VALVE VAULT This item is for payment for installation of an underground structure for housing of specific valve(s), as required by the plans and specifications. This item shall include all labor, equipment, excavation, concrete, manhole castings or doors, the specified valve(s), all piping, and fitting materials associated with installing a functioning valve vault, in accordance with the plans, standard drawings, and specifications, complete and ready-for-use. Please refer to the Utility Company's Specifications. If the Company does not have specifications, KYTC's Specifications shall be referenced. This item shall be paid EACH (EA) when complete.



Louisville Water 4” -20” Pipeline Material Specification

March 2020

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03 21 00 - REINFORCEMENT BARS
SECTION 03 21 16
EPOXY-COATED REBAR ANCHORS

1. GENERAL

- A. Steel Reinforcing Bar Anchors shall conform to the requirements of ASTM A615 – Specification for Deformed and Plain Billet –Steel Bars for Concrete Reinforcement for Grade 60 reinforcing steel.
- B. Steel Reinforcing Bar Anchors shall be fusion bonded epoxy coated in accordance with ASTM A775 –Specification for Epoxy-Coated Reinforcing Steel Bars and the Concrete Reinforcing Steel Institute's Fusion Bonded Epoxy Coating Applicator Plant Certification Program. The fusion bonded epoxy coating shall show no evidence of separation from the bar and be free from holes, voids, contamination, cracks or other damaged areas.

2. PRODUCTS

- A. Fabrication: Reinforcing steel shall be accurately formed to the dimensions and shapes shown on Louisville Water Company Standard Drawing #5006. Standard Hooks (180° degrees) shall be bent around a pin having a diameter of 3 inches (3") for No.4 bars; 4.5 inches (4.5") for No.6 bars; 6 inches (6") for No. 8 bars; and 10.75 inches (10.75") for No. 10 bars. Bars shall be bent cold.
- B. Fabrication Tolerances:
 - 1. Sheared Length: +/- One inch (1")
 - 2. Bend Dimensions:
 - 3. +/-One Half inch (1/2") for #4 Bar Size.
 - 4. +/-One inch (1") for Larger than #4 Bar Size.
- C. Reinforcing Steel shall be rejected if the extent of the epoxy coating damage exceeds 1% of the surface area in any one-foot length.
- D. The proposed contractor(s) shall provide certification stating that the reinforcing steel and epoxy coating conform to the requirements of ASTM A615 and/or ASTM A775 Standards (latest editions) upon request by LWC.

**SECTION 04 22 00
CONCRETE UNIT MASONRY**

1. GENERAL

- A. Provision of concrete blocks for supporting fire hydrants and temporary support of gate valves.
- B. Related work:
 - a. Fire hydrants and gate valves
- C. Submittals:
 - a. Submit manufacture's information showing the concrete block type, dimensions and compliance with ASTM C90.

2. PRODUCTS

- A. The concrete blocks shall be new, 4" x 8" x 16" solid concrete block, with actual dimensions of 3.625" x 7.625" x 15.625".
- B. The solid concrete block shall comply with ASTM C90 for normal weight load bearing concrete masonry units. The solid concrete block shall have a minimum weight of 31.25 lbs. and have a minimum compressive strength of 1,900 psi.

3. MANUFACTURERS

- A. The concrete block shall be as supplied by Lowes Home Improvement or approved equal.

22 11 00 FACILITY WATER DISTRIBUTION
SECTION 22 11 16.02
BRASS FITTINGS AND VALVES

1. GENERAL

- A. All items shall comply with applicable provisions of the AWWA C800 section 4 "material shall comply with the requirements of the Safe Drinking Water Act standards currently in effect for no lead brass". Louisville Water Company reserves the right to require the contractor to supply an affidavit from the manufacturer stating that the products provided comply.

2. PRODUCTS

- A. Contractor shall provide installation instructions with all couplings and valves and will be required to provide to the Inspectors.
- B. All items that the Louisville Water Company rejects as not conforming to standards shall be returned to the Contractor at the expense of the Contractor. If the items are found to be defective, they shall be replaced with like items at the Contractor's expense.
- C. Valves and fittings shall be complete and ready to install when shipped. The Contractor shall use care in preparing them for shipment to avoid damage during handling or transit. Damaged items will be returned at contractor's expense.
- D. Corporation stops shall be suitable for both dry and wet tapped connections on PVC and ductile iron water mains.
- E. All fittings in the Bidders Proposal Sheet described as "compression" style, shall be manufactured with a stainless steel gripper ring. The gripper ring shall be molded into the gasket and is drawn down when the nut is tightened, providing a mechanical restraint and hydraulic seal. In addition, the interior portion of the nut must have a transparent fluorocarbon coating that provides smooth torque transfer.
- F. Items 2050006 & 2050007 height must not exceed 7 W' from bottom of inlet to the top of the stop.

3. MANUFACTURERS

- A. Prequalified manufacturers of brass fittings and valves are (or approved equal):

Mueller	Trenton Pipe
Ford Meter Box	Merit Brass
A Y McDonald	Lee Brass
Cambridge Brass	Milwaukee
Watts	Kitz

26 05 00 – COMMON WORK RESULTS FOR ELECTRICAL
SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1. GENERAL

- A. Provision of tracing wire for locating buried PVC pipe.
- B. Related work:
 - a. PVC pipe, Asbestos Cement (AC) pipe, gate valves and key tubes
- C. Submittals:
 - a. Submit manufacture's information showing the tracer wire type, AWG size, insulation color and materials composition and wire materials of construction.

2. PRODUCTS

- A. Tracer wire shall be new, 12 AWG solid THHN copper conductor.
- B. The wire shall be covered with PVC insulation over which a nylon (polyamide) jacket is applied and rated for 600 volts. The insulation and jacket shall be RoHS compliant and utilize virgin grade material.
- C. The insulation color shall be blue for water service to match the APWA color code standard for identification of buried utilities.

3. MANUFACTURERS

- A. The tracer wire shall be Pro-Line Safety Products or approved equal.

31 25 00 – EROSION & SEDIMENTATION CONTROLS
SECTION 31 25 14.16
ROLLED EROSION CONTROL MATS AND BLANKETS

1. GENERAL

- A. Provision of geotextile filter fabric for lining of fire hydrant drainage pits.
- B. Related work:
 - 1.Fire Hydrants
- C. Submittals
 - 2. Submit manufacture’s information showing the geotextile fabric type, weight, color and materials of construction.

2. PRODUCTS

- A. The geotextile fabric shall be #200 spum bond polyproptlene (i.e., 2 ounces per square yard or 67.7 grams per square meter) with the following characteristics:

Test		ASTM Method	Unit	Average	Minimum
Material weight			$\frac{g}{m^2}$	68	65.5
Tensile Grab	MD	D5034-09	lbs.	38.5	34.6
Grab Elongation	MD	D5034-09	%	118	106
Tensile Grab	CD	D5034-09	lbs.	34.4	31
Grab Elongation	CD	D5034-09	%	128	115.5

- B. The geotextile fabric shall be supplied in 48-inch x 48-inch sheets.

3. MANUFACTURERS

- A. Geotextile filter fabric shall be #200 polypropylene as manufactured by Ovasco Industries or approved equal.

33 01 00 - OPERATION & MAINTENANCE OF UTILITIES
SECTION 33 01 10.54
CLEANING OF WATER UTILITY PIPING (POLY PIGS)

- 1. GENERAL
 - A. Provision of polyurethane foam pipeline cleaners for pigging of the water main prior to placing the main in-service.
 - B. Related Work:
 - a. Ductile Iron Pipe and PVC Pipe, Ductile Iron Fittings, Gate Valves
 - C. Submittals:
 - a. Submit manufacture’s information showing the pipeline cleaner type, diameter, density, length of nose and length of body, color and materials of construction.
- 2. PRODUCTS:
 - A. Pipeline cleaners shall be new, of medium density (5-8 lbs./c.f.), flexible, and composed of an open cell urethane foam body with high resilience.
 - B. The outer coating shall be composed of a tough urethane elastomer coating applied in crisscross bands to enhance cleaning and yield strong resistance to wear yet remain flexible to allow the cleaner to pass through fittings, bends, gate valves and other diameter reductions of up to 65% of the cross-section area of the nominal main.
 - C. Pipeline cleaner shall be bullet shaped and have a nose on one end and be blunt on the other end and have crisscross bands and sized for the type of water main being cleaned.
 - D. Pipeline cleaners shall be color coded for the type of service intended and for easy identification, e.g., blue for PVC pipeline cleaners and red for ductile iron pipeline cleaners.
 - E. The materials that compose the pipeline cleaner shall be food grade compatible.
 - F. Pipeline cleaners must have an outside diameter based on the type and size of main to be pigged, in accordance with Table 1 for DR 18 PVC pipe and Table 2 for Pressure Class 350 Ductile Iron pipe.

Table 1- Poly Pig Sizes for DR 18 PVC Pipe

Nominal Pipe Size, in.	AWWA C900 DR 18 PVC I.D, in.	Poly Pig Size, in.
4	4.27	4.55
6	6.13	6.35
8	8.04	8.3
12	11.73	12.05

Table 2- Poly Pig Sizes for PC 350 Ductile Iron Pipe

Nominal Pipe Size, in.	Pressure Class 350 Ductile Iron Pipe I.D, in.	Poly Pig Size, in.
4	4.3	4.55
6	6.4	6.65
8	8.55	8.85
12	12.64	13.05
16	16.72	17.10
20	20.84	21.35

- 3. MANUFACTURERS
 - A. Pipeline cleaners shall be Municipal Series Model B4 for DR 18 PVC pipe and Model RX-4 for Ductile Iron pipe as manufactured by Pipeline Pigging Products, Incorporated or approved equal.

33 05 00 – COMMON WORK RESULTS FOR UTILITIES
SECTION 33 05 07.24
STEEL CASING PIPE

1. GENERAL

- A. The Casing Pipe shall be shipped on flatbed trucks with end bulkheads on the truck and shall be banded together in a maximum of one layer. Each bundle shall not exceed six lengths of pipe. A non-construction grade 4 x 4 timber shall be placed between each layer and/or bundle. Each 4 x 4 timber shall contain a wood chock at the end of the 4 x 4 placed firmly against the pipe. The wood chock shall be 3 ½ x 3 ½ x 3 ½ triangular in shape.

2. PRODUCTS

- A. The material shall conform to the chemical and mechanical requirements of the latest revision of ASTM A 139 “Electric-Fusion (ARC) Welded Steel Pipe” (NPS 4 and over), unless otherwise stated herein.
- B. The pipe furnished shall be grade B. The steel shall be new and previously unused.
- C. Hydrostatic testing shall not be necessary.
- D. All pipe lengths shall be 20 feet, + or – ½ inch, and shall be beveled at one end (for field welding of circumferential joints) and shall be plain right angle cut at the other end. All burrs at the end of the pipe shall be removed.
- E. The wall thickness at any point shall be within 12.5% of the thickness specified in the “Louisville Water Company Technical Specifications and Standard Drawings for Pipeline Construction 2008”.
- F. Circumference- The outside circumference of the pipe shall not vary more than + or – 1% but not exceeding + or – 3/4” from the nominal outside circumference.
- G. Ovality (Out-of-Roundness) - The pipe diameter within 4.0 in. of ends, shall not vary more than 1% from the specified diameter.
- H. Straightness- All pipe lengths shall be 20-foot in length unless approved by the Project Manager.
- I. All ID obstructions (bead welds, slags, etc.) shall not extend more than 3.32” from the ID face.

SECTION 33 05 07.24.01 CASING SPACERS

1. GENERAL

- A. Casing Spacers shall be utilized to protect pipe from damage caused by being pulled through metal casing pipe and to prevent the bells from sliding and resting on the casing pipe. Refer to "Louisville Water Company Technical Specifications and Standard Drawings for Pipeline Construction 2008" Drawing 1500, Steel Casing Pipe and Casing Runners.

2. PRODUCTS

- A. Casing spacers shall provide projections around the entire circumference of the carrier pipe.
- B. Casing spacers shall be in segments for field assembly, without the need for special tools.
- C. Spacer segments shall be secured around the carrier pipe by means other than adhesives.
- D. If Casing spacers contain polymers, the polymer shall contain ultraviolet inhibitors.
- E. Casing spacers shall have a minimum compressive strength of 3000 psi.
- F. Casing spacers shall have impact strength of 1.5 ft-lbs./inch.
- G. Casing spacers shall have a dielectric strength of 800 volts/mil.
- H. Each casing spacer shall have full length, integral skids with a minimum bandwidth of 5" and a runner height of 1.95" – 2.2" for a carrier pipe diameter of 4" through 14".
- I. Each casing spacer shall have full length, integral skids, with a minimum bandwidth of 8" and a runner height of 1.95" – 2.2" for a carrier pipe diameter of 16" through 30".
- J. Casing spacers may utilize varying numbers of same size segments to comprise a wrap, around the entire circumference of the carrier pipe.

3. MANUFACTURERS

- A. Prequalified manufacturer are APS, GPT Ranger II, or approved equal.

SECTION 33 05 09.43
TAPPING SADDLES

1. GENERAL

- A. The Louisville Water Company has both PVC and Ductile Iron Pipe installed in the system. The Louisville Water Company has DR14 and DR18 PVC pipe that meets AWWA C900, “Standard for Polyvinyl Chloride (PVC) Pressure Pipe – 4” through 12” for Water.” Louisville Water Company infrastructure contains thickness class 54 and Pressure Class 350 Ductile Iron Pipe that meets AWWA C151. Water temperature inside the pipe will vary from 34° Fahrenheit to 90° Fahrenheit. Water pressure rating for pipe shall be: 305 PSI for DR14 PVC Pipe; 350 PSI for Ductile Iron Pipe and 235 PSI for DR18 PVC Pipe. Saddles must withstand the aforementioned service conditions.

2. PRODUCTS

- A. Materials received damaged will be returned at contractor’s expense.
- B. The straps for PVC Pipe shall be constructed of type #304 stainless steel or better and flattened to provide a wide bearing surface against the pipe. All saddles shall provide a minimum of two inches total width along the pipe’s axis for taps up to one inch in size. Taps 1 ¼” through 2” shall have a minimum of three inches total band width with full circumferential support.
- C. Service Saddles for Ductile Iron Pipe must be constructed with dual bronze straps and having 4 bolts attached with brass unitized nuts and washers in accordance with AWWA C800 & M23. Nuts shall be brass alloy per ASTM B62 and AWWA C800.
- D. The body shall be cast from certified 85-5-5-5 water works brass conforming to the latest edition of ASTM B-62 and AWWA C800.
- E. The rubber gasket shall be EPDM rubber or better and shall conform to the pipe surface and bonded in place for easy installation.

3. MANUFACTURERS

- A. Provided below is a list of prequalified manufacturers for PVC Pipe and Ductile Iron Pipe (or approved equal):

Pre-qualified Manufacturers	PVC Pipe	Ductile Iron Pipe
A.Y. McDonald	3845	3825
Ford Style	202BS	202B
Mueller	BR2S	BR2B
SmithBlair	325’S	325’S

SECTION 33 05 09.44 TAPPING SLEEVE & GATE VALVE

1. PRODUCTS

A. TAPPING SLEEVE

1. Tapping Sleeve shall meet the requirements of AWWA C223 and AWWA C500/C509 as applicable to the type of valve specified.
2. Tapping sleeve shall be a high-pressure full circumference band with a flanged (FLG) outlet. Sleeves shall have a rated minimum working pressure of 200 PSI up to and including 10-inch outlets.
3. Sleeve bodies and branches shall be 18-8 stainless steel type 304 per ASTM A240 and fully passivated for maximum corrosion protection. FLG outlets shall be the same stainless steel or ductile iron and joined to the body as one unit.
4. The branch shall contain a 3/4-inch NPT bronze or stainless steel test plug located at the 12 o'clock position, based on length of sleeve (top of sleeve) for release of air during installation and to allow for hydrostatic testing.
5. Gaskets shall provide a full circumferential seal around the body and a hydro-mechanical seal at the outlet seal and be compounded for use with potable water and shall meet or exceed the most recent edition of ASTM D2000.
6. Bolts, heavy hex nuts and washers shall be 18-8 stainless steel type 304 and treated to prevent galling.
7. Sleeves shall be delivered complete with gaskets & accessories. Sleeves must be tagged and marked indicating the size & O.D. ranges.

B. GATE VALVE

1. General Requirements:
 - i. Unless otherwise specified below, these requirements shall apply to all gate valves.
 - ii. Gate valves shall meet the requirements of AWWA C500 and AWWA C509 as applicable to the type of valve specified.
 - iii. Buried and submerged valves shall be furnished with mechanical joints and stainless steel hardware, non-rising stem design.
 - iv. Exposed valves shall be furnished with Class 250 flanged ends; provide valves outside screw and yoke. Exposed valves 16-inch and larger shall be furnished with a valve bypass.
 - v. The valve body, bonnet, and gate castings shall be constructed of ductile iron, and shall have full shell thickness according to AWWA C509, Table 2, Section 4.4.
 - vi. Rising stem valves shall be sealed with adjustable and replaceable packing; valve design must permit packing replacement under operating system pressures with only moderate leakage.
 - vii. Non-rising stem valves shall use double O-ring stem seal, except that packing shall be used where gear operators are required.

viii. Except as otherwise specified, valves shall be rated for the following working water pressures:

Valve Size	Pressure (psig)
3-inch to 20-inch	250

- ix. All valve bodies shall be hydrostatically tested to at least twice the rated working water pressure. In addition, valves shall be seat-tested, bi-directional at the rated working pressure, with a bubble tight seal. Provide certification of testing.
- x. Flanged valves to have face-to-face dimensions per ANSI C115.
- xi. All bonnet and packing gland bolts shall be zinc or cadmium electroplated steel; packing gland bolts shall have bronze nuts.
- xii. All valves shall be marked per AWWA Standards, including name of manufacturer, valve size and working pressure, and year of manufacture.
- xiii. Valve operation shall be open right (turning clockwise). Provide permanent label showing “OPEN” and arrows.
- xiv. Valves shall be suitable for potable water service.
- xv. Gate Valves shall be Type V134 resilient seated ductile iron gate valves manufactured by Mueller, American Flow Control, or equal.
- xvi. Internal and external epoxy of valve body, including bonnet, per AWWA C550.
- xvii. Gate shall be encapsulated with synthetic rubber. It shall be bonded and vulcanized in accordance with ASTM D429 Method B.
- xviii. No recesses in valve body.
- xix. Valves shall be installed as shown on the PROJECT DRAWINGS.

2.Buried Valve Requirements

- i. Buried valves shall conform to the requirements above, except mechanical joint bell ends per AWWA C111. All exposed valve hardware (nuts, bolts, washers, etc.) including bonnet, bonnet cover, stuffing box, gear adapter, and joints shall be Type 304 stainless steel.
- ii. Stem shall be non-rising design, double O-ring seals for non-geared valves and shall incorporate packing for geared valves.
- iii. Valve shall be provided with valve box, 2-inch operating nut and extension stem and stem cover, and tee handled valve wrenches.
- iv. All valves that have mechanical joint ends shall have MJ coupled restraint joints.

SECTION 33 05 19
DUCTILE IRON PIPE

1. GENERAL
- A. Pipe shall be ductile iron and shall be manufactured in accordance with the latest edition of AWWA C150 and C151 and AWWA/ANSI C104/A21.4-Standard for Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-lined Molds, for the water distribution system of the Louisville Water Company. Water temperature inside the pipe will vary from approximately 34° F to 84° F. All pipe shall be furnished with push-on joints as per the latest edition of AWWA/ANSI C151/A21.51, Sec. 51.2.6.

2. PRODUCTS

A. METAL THICKNESS REQUIRED FOR DUCTILE IRON PIPE

Size	Rated Working Pressure (Meet or Exceed)	Nominal Metal Thickness
4"	350	0.25"
6"	350	0.25"
8"	350	0.25"
10"	350	0.26"
12"	350	0.28"
14"	350	0.31"
16"	350	0.34"
20"	250	0.38"
24"	250	0.43"
30"	250	0.49"
36"	250	0.56"
48"	250	0.70"

B. SPECIFIC REQUIREMENTS

1. Certificate of Compliance: A certificate stating compliance with the latest edition of AWWA/ANSI C104/A21.4 shall be submitted with this bid. Records supporting compliance with the testing procedures and acceptance values established in the standard shall be made available upon request.
2. Louisville Water Company reserves the right to have either independent testing or its own employee evaluation present during production to verify compliance to applicable AWWA standards.
3. Coating: Pipe shall have an outside asphaltic coating approximately 1 mil thick. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and strongly adherent of the pipe. The inside shall be lined with cement mortar lining and seal coated in accordance with the latest edition of AWWA/ANSI C104/A21.4 – Standard for Cement-Mortar Linings for Ductile Iron Pipe and fittings for Water. Thickness of the cement lining shall not be less than 1/6 inch for 3 to 12 inch pipe, 3/32 inch for 14 to 24 inch pipe and 1/8 inch for 30 to 48 inch pipe. Special attention is directed to strict observance of the requirements in AWWA Standard C104, 4.11, relating to characteristic of asphaltic seal as to

deleterious effects upon quality, color, taste or odor imparted to potable water, leaching resistance and limit of toxic substances.

4. Joints:

- A. Mechanical and Push-On: Mechanical and push-on joints including accessories shall conform to ANSI/AWWA C111/A21.11.
- B. Restrained: When restrained joints are required, they shall be boltless push-on type. Boltless restrained joints shall be either U.S. Pipe and Foundry "TR Flex", American Ductile Iron Pipe "Flex-Ring", or equal. Restrained joint pipe shall be furnished with a factory welded retaining ring. The use of field installed retaining rings such as "Gripper Rings" and "Field Lock Gaskets" will be permitted for 12" and smaller ductile iron water main only.

5. Marking Pipe: Each length of pipe shall be clearly marked by the manufacturer identifying the name of the manufacturer, year of manufacture, identified as being ductile iron, new weight without lining, pressure rating, metal thickness or nominal thickness, casting period and nominal length of pipe.

6. Type and Class: Pipe shall be of nominal 18 ft. or 20 ft. laying lengths as per the latest edition of AWWA/ANSI C151/A21.51, free of surface defects, especially pitting, with push-on type joints and shall be furnished complete with standard rubber o-ring gaskets meeting the latest edition of AWWA/ANSI C111/A21.11- Standard for Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

3. MANUFACTURERS

A. Past accepted or used Manufacturers (or Approved Equal):

US Pipe	McWane
Griffin Pipe	Clow
American Ductile Iron	

7. All others shall submit technical specifications and affidavit of compliance that the pipe meets AWWA specifications as listed and all other Louisville Water Company specifications listed herein.

SECTION 33 05 19.01
POLYWRAP FOR WRAPPING DUCTILE IRON

1. GENERAL

A. POLYETHYLENE WRAP

1. All material supplied shall be free from defects in material and workmanship and shall meet standards as stated in this specification.
2. All polyethylene wrap shall be linear low density, 8 mil thick, Tube-Type.
3. Wrap shall be furnished in rolls appropriate to the project (no scrap pieces), non-perforated.
4. Wrap shall be tinted PMS color 299-C or LWC approved tinted blue color.
5. Product shall be in conformance with the latest edition of AWWA Standard C105/A21.5.
6. Film shall be manufactured of virgin polyethylene materials.
7. A certificate of compliance to all AWWA C105/A21.5 requirements shall be provided by the manufacturer.
8. Approved manufacturers are Hamilton Plastics, Christy's, Champion Plastics, and AA Thread.

SECTION 33 05 19.02
POLYTAPE FOR WRAPPING DUCTILE IRON

1. GENERAL

A. POLYETHYLENE TAPE

1. All material supplied shall be free from defects in material and workmanship and shall meet standards as stated in this specification.
2. The material shall have a polyethylene film backing with the following performance characteristics.
 - (1) Minimum thickness shall be 7 mils.
 - (2) Minimum tensile strength shall be 20 lbs/inch per ASTM D-1000.
 - (3) Adhesion to steel shall be a minimum of 25 oz/inch per PSTC-101.
 - (4) Adhesion to backing shall be a minimum of 25 oz/inch per PSTC-101.
 - (5) Minimum operating temperature shall be no greater than 40 degrees Fahrenheit.
 - (6) Maximum operating temperature shall be no less than 180 degrees Fahrenheit.
3. Tape shall be minimum 1.89 inches in width and yellow in color.
4. Tape shall be Polyken 809 as manufactured by Berry Global Inc. or equal.

SECTION 33 05 31.16 PVC PIPE

1. GENERAL

- A. The pipe supplied shall be Polyvinyl Chloride Pipe, cast iron O.D. base design, blue in color and manufactured in accordance with the latest edition of ANSI/AWWA C900, "AWWA standard for underground installation of Polyvinyl Chloride (PVC) Pressure Pipe and fabricated fittings, 4" through 12" for water distribution." This pipe is intended for use as municipal water pipe in the potable water distribution system of Louisville Water Company.

2. PRODUCTS

A. Certifications:

1. The manufacturer of the pipe furnished under these specifications must be listed by the Underwriters Laboratory, be approved by the Factory Mutual System and in compliance with the National Sanitation Foundation (NSF) standard number 61.
2. Certification of compliance with the latest edition of AWWA C900 with the testing procedures and acceptance values established in the standard shall be made available upon request. Each length of pipe, including the integral bell, shall be pressure tested to two times the AWWA rated pressure for a minimum of five (5) seconds.
3. Louisville Water Company reserves the right to have independent testing or an its own representative evaluation present during production to verify compliance to referenced AWWA standards.

B. Type and Class:

1. Pipe shall be of nominal 20' laying lengths. Exclusions are taken to the AWWA allowance of random lengths, length variance shall be ± 1 inch. Pipe shall have gasket bell end type joints and shall be furnished complete with gaskets in place, meeting the latest revision to ASTM F477, "Elastomeric Seals for Joining Plastic Pipe".

C. Markings:

1. Pipe shall bear identification markings that will remain legible during normal handling, storage, and installation. The markings shall be prescribed by AWWA Standards applied in a manner that will not reduce the strength of the pipe or otherwise damage it. The tapered end of the pipe shall have a fully-seated line encircling its circumference. Additional markings on the pipe shall include the following and shall be applied at intervals of not more than five feet:
 - a. Nominal size (for example, 4 in.)
 - b. PVC
 - c. Dimension Ratio (DR)
 - d. AWWA pressure class
 - e. AWWA designation number for this standard
 - f. Manufacture's name or trademark and production record code, including year of manufacture
 - g. Seal (mark) of the testing agency that verified the suitability of the pipe material for potable water service.

D. Bevel Requirements:

- 1. Factory-finished spigot ends must have a minimum level of 15 degrees to a maximum bevel of 22.5 degrees. The vertical face of the spigot end may not exceed 75% of pipe wall thickness and the horizontal length of the bevel shall not exceed 1.25”.

3. MANUFACTURERS

A. PVC water main shall be manufactured by (or approved equal):

North American	Certainteed
Sanderson	Diamond Plastics Royal
Vulcan	National Pipe
Vinylplex	

SECTION 33 05 31.26
SERVICE SLEEVES

1. GENERAL

- A. Provision of SERVICE SLEEVE for installing water service line 2-inch and smaller.
Service sleeve shall be used as a casing pipe installed prior to the installation of paved roads for the future service line (carrier pipe).

2. PRODUCTS

- A. Service sleeve shall be new Schedule 40 PVC pipe with a minimum 2-inch inside diameter.
- B. Schedule 40 PVC pipe shall be made in accordance to ASTM 1785 and ASTM 2466.
- C. Schedule 40 PVC pipe shall be gray in color.
- D. Schedule 40 PVC pipe shall be IPS.
- E. Schedule 40 PVC pipe shall be supplied in 20-ft length

SECTION 33 05 73
VALVE BOXES, LIDS, & RISERS

1. PRODUCTS

A. LWC Valve Boxes

- i. LWC Valve boxes are a unit and shall be delivered as a valve box set.
- ii. The units must conform to the enclosed drawings.
- iii. Contractor will be required to create molds for the valve boxes.
- iv. The casting shall be cast iron conforming to the latest editions of ANSI/AWWA A21.10/C110; ASTM 126, Class B; or ASTM A48, Class 30.
- v. The casting shall be uniform, smooth and free of burrs, spurs and cracks.
- vi. The thickness and dimensions shall conform to the attached drawings.
- vii. The coating for general use under normal conditions shall be a petroleum-asphaltic coating approximately 1 mil thick. The coating shall be applied to the entire external portions of the unit.
- viii. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and strongly adherent to the casting.
- ix. The weight of each complete unit shall be a minimum of seventy (70) pounds.
- x. Drawings are included in the bid package for clarification and measurement purposes. All units must conform to the enclosed drawings.

B. County 5 1/4-inch Valve Box Lids & Risers

- i. The Lids and Risers furnished under this bid must be interchangeable with the Tyler Union
- ii. Two Piece 5 1/4" shaft valve boxes marked "Water".
- iii. The casting shall be cast iron conforming to the latest editions of ANSI/AWWA A21.10/C110; ASTM 126, Class B; or ASTM A48, Class 30.
- iv. The casting shall be uniform, smooth and free of burrs, spurs and cracks.
- v. The coating for general use under normal conditions shall be a petroleum-asphaltic coating approximately 1 mil thick. The coating shall be applied to the entire external portions of the unit.
- vi. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and strongly adherent to the casting.

2. MANUFACTURERS

- A. Preapproved manufacturers for LWC Valve Boxes are Sigma Corporation, Russell Pipe or General Foundries.
- B. Preapproved manufacturers for County 5 1/4" Valve Box Lids & Risers are Sigma Corporation, Russell Pipe, Star Pipe, Tyler Union or General Foundries.

SECTION 33 05 73.01
PLASTIC METER VAULTS & EXTENSION RINGS

1. PRODUCTS

- A. Meter vaults and elevator rings shall be designed to support a vertical 20,000 pound axial load equally distributed around the rim while freestanding (without horizontal support) on a flat surface with a maximum deflection of less than or equal to 0.5 inches.
- B. The vaults shall be designed to a minimum pipe stiffness of four (4) PSI. The pipe stiffness shall be tested in accordance with ASTM D2412.
- C. Meter vaults shall not develop environmental stress cracking or be subject to deformation, sagging, or degradation in any manner while in storage or in underground applications.
- D. Meter vaults shall be resistant to moisture and both acid and alkaline conditions.
- E. Meter vaults shall be suitable to be stored outside and withstand ultra violet (U.V.) radiation and all weather conditions with temperatures ranging from -30° (degrees) to 140° (degrees) Fahrenheit.
- F. The small meter vault weight shall not exceed 50 lbs. and the large meter vault weight shall not exceed 80 lbs. Meter vaults shall not be corrugated.
- G. The small meter vault shall have an inside diameter range of 19.50" to 20.30" at the top of the vault and shall be 19.0" on the bottom of the vault.
- H. The large meter vault shall have an inside diameter range of 35.50" to 36.25".
- I. Manufacturer's data showing inside diameter, outside diameter, length, pipe stiffness (testing according to ASTM D2412), section modules, vertical load carried at 0.25 inch deflection of pipe shall be provided upon request. Certified test data showing compliance with the strength requirements of this specification shall be provided upon request.
- J. The interior surface area shall be of white color for reflective purposes.
- K. There shall be 2 mouse holes measuring 3" wide X 4" tall 180 degrees opposite each other at bottom of vault.
- L. Elevator rings must be compatible with the manufacturer's own vault and with pre-qualified manufacturer's vaults listed.
- M. Sizes of elevator rings for the 20 x 36 vault shall be 4", 6", 8". A 22-degree sloped model shall also be provided. The size provided for the 36 x 36 vault shall be 3".
- N. Average Thermal Resistance "R" per specimen thickness shall be no less than 0.150 (Hr.ft2.degF)/BTU.

2. MANUFACTURERS

- A. The following are Pre-qualified:
 - i. Oldcastle Precast: Item #00202032, body HW0020-36 Blk/Wht, 2MH, SW, LVILLE
 - ii. Oldcastle Precast: Item #00362003 0036-36 B Body B-W 2 Mshl
 - iii. Bingham & Taylor: Item # MMP2036 – Diameter 20-inch, Depth 36-inch
 - iv. Bingham & Taylor: Item # PMP3636 – Diameter 36-inch, Depth 36-inch

SECTION 33 05 73.02 METER SETTERS

1. GENERAL

- A. The 1 1/2-inch and 2-inch Meter Setters with 1-inch bypass to be furnished shall be manufactured in accordance with these specifications and the standards of the water service industry for potable water service installation.
- B. The setter assemblies shall have dimensions in compliance with the attached drawings.
- C. These setters shall be utilized in the potable water distribution system of Louisville Water Company; water temperature will vary from 34 - F to 90 - F, with a maximum working water pressure of 125 psi.

2. PRODUCTS

A. General Assembly and Shipment

- 1. Copper Tubing: The copper tubing shall be soft copper, Type K in all sizes and shall conform to the latest edition of AWWA C800 A.2, ASTM B88 and B88M.
- 2. Fittings: The fittings shall be in accordance with the latest edition of AWWA C800 and ASTM B88 with joints as described in the attached drawing (see pages DR-1 and DR-2).
- 3. Solder connections shall be lead-free and suitable for standard copper tubing.
- 4. Threaded connections shall be standard iron pipe threads.
- 5. Meter flanges shall be standard 1 1/2 and 2-inch with support brackets and contain either EPDM or better rubber gaskets with 5/8-inch holes in wings for meter bolts.
- 6. Meter assembly bottom support spreaders shall be copper.
- 7. Each setter shall be packaged complete with all components and gaskets and shall be partially assembled into the following components:

(1) 1 1/2-INCH METER SETTER

- (a) Two (2) 90° ell with yoke bar and eye (1 1/2 -inch solder x 1 1/2 -inch male thread with female compression coupling)
- (b) Four (4) adapters (1 1/2 -inch solder x 1 1/2 -inch male thread or compression)
- (c) Two (2) tees (1 1/2 -inch x 1 1/2 -inch x 1-inch thread)
- (d) One (1) 1 1/2 -inch angle meter valve with padlock wings on inverted key and support brackets on meter flange (1 1/2 female thread on 1 1/2 meter flange).
- (e) One (1) 1 1/2 -inch angle check valve with support brackets on meter flange (1 1/2 -inch female thread on 1 1/2 -inch meter flange).
- (f) Two (2) 1-inch angle meter valves on bypass with padlock wings on inverted key and a 1-inch meter coupling nut (1 -inch female thread x 1 -inch female thread).
- (g) Four (4) adapters on bypass (1-inch male thread x 1-inch solder).

(2) 2-INCH METER SETTER

- (a) Two (2) 90° ell with yoke bar and eye (2-inch solder x 2-inch male thread with female compression coupling).
- (b) Four (4) adapters (2-inch solder x 2-inch male thread or compression).
- (c) Two (2) tees (2-inch x 2-inch x 1-inch thread)
- (d) One (1) 2-inch angle meter valve with padlock wings on inverted key and support brackets on meter flange (female thread on meter flange).
- (e) One (1) 2-inch angle check valve with support brackets on meter flange (female thread on meter flange).

- (f) Two (2) 1-inch angle meter valves on bypass with padlock wings on inverted key and a 1-inch meter coupling nut (1-inch female thread x 1-inch female thread).
- (g) Four (4) adapters on bypass (1-inch male thread x 1-inch solder).

3. MANUFACTURERS

A. The following are pre-qualified models. All other models must be pre-approved by the Project Manager.

- 1. 1-1/2-inch Meter Setter
 - (1) Ford VFH 66
 - (2) A.Y. McDonald 20R621WDFF 664
 - (3) Mueller
- 2. 2-inch Meter Setter
 - (1) Ford VFH 77
 - (2) A.Y. McDonald 20R721WDFF 774
 - (3) Mueller

SECTION 33 05 73.03 PIPE REPAIR SLEEVES

1. GENERAL

- A. Stainless Steel Bands - Shall be of flexible stainless steel. Consist of one or more sections. Made of #304 stainless steel per ASTM A240, minimum 20 gauge. Bands shall have applicable outside diameter (O.D.) ranges adhered to the band in the form of a stamp or label, for easy identification.

2. PRODUCTS

- A. Lugs - Shall be made of high-strength ductile iron. Designed so there is no interference between lug fingers and wrench room used to tighten the nuts.
- B. Bolts and Nuts - Shall be #304 stainless steel with rolled NC threads and treated to prevent galling. Nuts shall be #304 stainless steel, heavy hexagon head.
- C. Bolt Length - On the 4, 6 and 8 inch sleeves, the center bolt shall be 1 ½ inch longer than the standard 6 7/8 inches (shall be minimum of 8 3/8 inch). On the larger sleeves, the center bolt shall be 2 inches longer than the standard 7 inches (shall be a minimum of 9 inches).
- D. Gaskets - Shall be engineered of a rubber compound suitable for potable water. Must be gridded and overlapping to ensure adequate seal. Must meet or exceed ASTM D2000. Must be free of excessive adhesive, which could interfere with the seal.
- E. Band Lengths - Sleeves 12 inch and smaller shall be single band not less than 12 inches in length, with a five (5) bolt lug pattern. Sleeves 16 inch shall be double band and not be less than fifteen (15) inches in length with a six (6) bolt lug pattern. Sleeves 20 inch and larger shall be double band not less than 24 inches in length, with a ten (10) bolt lug pattern.

SECTION 33 05 73.04
FRAMES, RISERS, AND MONITOR CASTINGS

1. GENERAL

- A. All castings for water meter vaults shall be iron-cast gray iron per ASTM A48, Class 25 or ductile iron with a minimum tensile strength of 25,000 pounds.
- B. All castings shall be painted with one coat of black asphaltic material, or electrostatically applied epoxy paint. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and shall be strongly adherent to the casting.
- C. Monitor castings shall consist of a flange and ring.
- D. Hooks, bolts, and nuts for elevator/ riser rings for J-hook style shall be brass or bronze and installed in the frames prior to delivery. Hooks must be capable of bending to a minimum deflection of 90 degrees in any direction without breaking or cracking.
- E. Hex-head bolts and nuts for risers shall be carbon steel and meet ASTM 325 Type 1.

2. PRODUCTS

A. Workmanship

- 1. Inside lip of the frame must be void free with a clean, uniform, smooth, machined like finish.
- 2. The surface of the casting shall be free of adhering sand, scale, cracks, and hot tears as determined by visual inspections.
- 3. No repairing by plugging and welding will be accepted.
- 4. All frames shall be smooth and free of burrs and sharp edges.

B. Dimensions

- 1. Dimensions shall be in accordance with the attached drawings 5102, 5103, 5103B, 5104, 5105, and 5106. A tolerance of 1/16" will be allowable on all physical dimensions except brass hook anchor hole with a 1/32" + only (not less) on risers.

C. Performance Standards

- 1. Small frames (light) must be interchangeable with Ford Meter Box Co., model C3.
- 2. Small frames (heavy) must be interchangeable with Ford Meter Box model C3H.
- 3. Risers furnished under this bid shall work with Ford Meter Box Co. small frames model C3, C3H, Meter Box Covers MC-36, and Bingham and Taylor's BTC-3 and BTC-3H.
- 4. Risers for monitor castings shall work with Ford Meter Box model RR-11.
- 5. Monitor rings must be interchangeable with Ford Meter Box model RR-11.
- 6. A minimum weight load capacity certification shall be provided from an independent engineering testing company (written in English). Materials shall be capable of withstanding a minimum weight load capacity in accordance with AASHTO M306 testing standards. The proof loads shall be 20,000 pounds for heavy frames, monitor castings, and elevator/riser rings and 7,500 pounds for light frames.
- 7. Failure to meet minimum proof loads listed will be cause for immediate rejection.

3. MANUFACTURES

A. The castings shall be from the following manufacturers or approved equal:

- | | |
|----------------------|---------------------|
| • Ford Meter Box | • General Foundries |
| • Bingham and Taylor | • Vestal Industries |

SECTION 33 05 81 ALUMINUM HATCHES

1. PRODUCTS

- A. Hatch shall have an H-20 load capacity to handle vehicular traffic.
- B. Hatch channel frame and door panel must be made of ¼" aluminum diamond plate.
- C. Hatch channel frame must be 6" in depth to mount flush, top and bottom, when installing a 6" concrete slab top.
- D. Hatch must be equipped with a #304 stainless steel hold open arm and release mechanism to secure the door once it is opened.
- E. Top of hatch door must close flush with the top of the frame.
- F. Hatch door must open at 90° (degrees).
- G. All hinges and fastening hardware shall be #304 stainless steel.
- H. Unit shall lock using a #304 stainless steel slam lock with removable key wrench that will be provided with each hatch.
- I. Hatch shall have a 1 ½" drain hole located inside the channel frame. Any re-enforcement shall not protrude outside of the exterior rectangular frame.
- J. Hatch shall come equipped with a #304 stainless steel compression spring to counter balance the door weight and resist downward pressure while being closed.
- K. Hatch shall come equipped with a recessed #304 stainless steel or better handle to assist in opening and closing the door. The top of the handle shall be recessed a minimum of ½" below the top surface of the hatch.
- L. Louisville Water Company standard frame opening size will be 30" x 36".
- M. Hatch Lid shall have four (4) spaces with 4" diameter clearance from any re-enforcement to allow four (4) holes to be drilled by others, of 4" in diameter at locations determined by the manufacturer. Locations shall not interfere with the loading design capacity.

2. MANUFACTURES

- A. The hatches shall be from the following manufacturers or approved equal:
 - USF Fabrication
 - EJ USA
 - Cierra/Babcock-Davis
 - Halliday

40 05 00 - COMMON WORK RESULTS FOR PROCESS INTERCONNECTIONS
SECTION 40 05 17
COPPER TUBING

1. PRODUCTS

- A. A Purchase Order number must appear on all bills of lading and invoices.
- B. Copper shall be Type K soft, free from defects, pinholes, kinks, and shall be rounded.
- C. The material supplied shall be in conformance with the latest edition of the AWWA C800 Standard, ASTM B88 and B88M.

2. MANUFACTURERS

- A. The prequalified manufactures are as follows or approved equal:
 - 1. Cerro
 - 2. Mueller
 - 3. Weiland
 - 4. Howell
 - 5. Great Lakes

SECTION 40 05 61.23 SWING CHECK VALVES

1. GENERAL

- A. The swing check valves shall have a cast iron or ductile iron body and cover. The cast iron shall equal or exceed the requirements of ASTM A-126, Class B with a tensile strength greater than 31,000 PSI. Ductile iron shall conform to ASTM A-395 or ASTM A-536.

2. PRODUCTS

- A. Swing check valves must be certified for use in drinking water in accordance with NSF/ANSI 61 and are Certified Lead-Free per NSF/ANSI 372. Every valve is to be tested in accordance with and is certified to AWWA C508.
- B. The valve shall have a ductile iron or stainless steel clapper disc certified for use in drinking water in accordance with NSF/ANSI 61 and are Certified Lead-Free per NSF/ANSI 372. The clapper shall open fully to provide a net flow not less than the nominal pipe area. The disc shall bear against a stop in the full open position located to withstand impact or flow pressure which might damage the disc and related parts.
- C. The clapper disc shall have a composition disc seating surface of EPDM rubber or better, conforming to the requirements of AWWA C508.
- D. The hinge pin shall be of stainless steel and provide free rotation of the clapper disc.
- E. The machined seat ring shall screw into the valve body and provide a uniform seating surface for the clapper.
- F. All internal parts shall be readily accessible through the valve cover.
- G. Cover and flange nuts and bolts shall be type #304 stainless steel.
- H. Cover and flange gaskets shall be EPDM or BUNA-N rubber, 1/8 inch thick and of uniform dimensions, conforming to the requirements of AWWA C508.
- I. The ends shall be flanged and shall conform in dimensions and drilling to ANSI B16.1, Class 125.
- J. The valves shall conform to all applicable requirements of AWWA C508, "Standard for Swing Check Valves for Waterworks Service, 2 inch through 24 inch NPS and NSF/ANSI 61 and are Certified Lead-Free per NSF/ANSI 372."
- K. The coating furnished shall be suitable for potable water service and shall conform to AWWA C550, "Protective Internal Coatings for Valves and Hydrants."
- L. All internal and external surfaces except finished or bearing surfaces shall be shop cleaned and coated in accordance with this specification and applicable Steel Structures Painting Council specifications (SSPC).
- M. The surface shall be free of irregularities, burrs and sharp or rough edges prior to the application of the coating.
- N. Surface preparations for fusion bonded epoxy coating system shall conform with SSPC SP10, "White Metal Blast Cleaning." The fusion bonded epoxy coating shall be suitable for ferrous and non-ferrous metals subject to chemical corrosion and/or physical abrasion. Preheat and cure requirements of the manufacturer shall be observed. Dry powder shall be spray applied uniformly to achieve a minimum final dry film thickness of 8 mils.
- O. The selected coating system specifications shall be submitted for approval. A light clear color shall be used to enhance inspection.
- P. All swing check valves shall be guaranteed against defects in materials and workmanship for a period of one (1) year from date of shipment. Parts to replace those in which a defect has developed within such period will be supplied without charge, piece for piece, upon proper proof of defect.
- Q. Swing check valves shall be guaranteed to operate under a working pressure of 150 PSI, without leakage or damage to any parts. Valves shall be factory tested at 350 PSI.

- R. The valve body and cover shall be hydrostatically tested to withstand 350 PSI. No leakage through the body joints shall occur for one (1) minute.
- S. Seat and disc closure shall be hydrostatically tested to withstand 175 PSI differential pressure against the outlet end. Maximum permissible leakage shall be one (1) fluid ounce per hour per inch of nominal valve size.
- T. The valve casting shall have cast markings or a permanently affixed nameplate identifying the manufacturer, valve size, working pressure, flow directions (arrow) and year of manufacture.

SECTION 40 05 61.24
FLAT FACED FLANGED SPOOL PIECES

1. GENERAL

- A. All steel pipe and fittings listed in Section 2 Paragraph A1 and Section 3 Paragraph A, below shall conform to the requirements of the latest editions of the following AWWA specifications:

C-800- C200	Steel water pipe 6” and larger
C-207	Steel pipe flanges
C-210	Liquid epoxy coating systems for interior and exterior of steel water pipelines.

2. PRODUCTS

- A. All Spool pieces must have flat faced flanges.
- B. Description – Large Meter By-Pass and Test Spools
Steel flanged spool with one (1) 2” female Standard Iron Pipe (FIP)) threaded steel outlet. (Weldolets) Outlets will be installed between flanged eyelets to allow suitable clearance so that nuts and bolts may be inserted through the flanges.

Nominal Lengths

Nominal Size	Length
3 Inch	7 Inch
4 Inch	7 Inch
6 Inch	7 ½ Inch
8 Inch	8 Inch

- C. Description- Large Meter By-Pass Spools
Steel flanged spool with two (2) 2” female Standard Iron Pipe (FIP) threaded Steel outlet. (Weldolets) Outlets will be installed between flanged eyelets to allow suitable clearance so that nuts and bolts may be inserted through the flanges. Outlets shall be spaced 180⁰ apart.

Nominal Lengths

D. Nominal E. Size	Length
F. 3 Inch	7 Inch
G. 4 Inch	7 Inch
H. 6 Inch	7 ½ Inch
I. 8 Inch	8 Inch

D. Pipe

Pipe shall be Schedule 40 black and shall meet or exceed the latest edition of AWWA standards as follows:

AWWA	C-200	Steel Pipe
ASTM	A120	Welded Steel
AWWA	C-800	Service Lines

E. Preparations of the Ends

The ends shall be plain end and fitted with flat faced flanges and shall conform to and tested with the latest edition of AWWA Standard C-200 “Steel Water Pipe”.

Steel Weldolet With Female Standard Iron Pipe Thread (FIP)

Schedule	40
End Preparations	Threaded Female Outlets
Strength Requirements	Conform to latest editions of ANSI B16.9, B16.11, ASTM A-105

F. Flanges

1. Flanges shall be flat faced AWWA Standard steel hub slip-on conforming with the latest edition of AWWA Standard C-207 – “Steel Pipe Flanges For Water Works Service – Sizes 4 inch through 144 inch”.
2. Materials shall conform to the latest edition of AWWA Standard C-207, Section 4.
3. The dimensions and drilling shall conform with the latest edition of AWWA Standard C-207, Table 3, Class D.

G. Coating

1. The coating shall be high solid epoxy coating/Porter coating #7536 or equal and must conform to the latest edition of AWWA C-210 “Liquid Epoxy Coating Systems for the Interior and Exterior of Steel Water Pipelines” and must be EPA approved for potable water linings.
2. The application instructions shall be in strict adherence with manufacturer’s instructions and the latest edition of AWWA Standard C-210.
3. Surface preparations shall be performed and all mill scale shall be removed prior to the application of the coating.
4. Two (2) coats shall be applied and the finished coating shall be free of holidays and pinholes and have a minimal dry film thickness of 10 to 12 mils.
5. Threaded flanges shall be cleaned and with no obstruction to the threads.

H. Attachment of Weldolet

1. The pipe of depth and tap drill size shall be in compliance with the attached sheet Standard Drawing #9004 Weldolet Fitting.
2. The weld fillet shall conform to the latest edition of AWWA Standard C-200, "Steel Water Pipe".

I. Welded Joints

1. The manufacturer shall be responsible for the quality of all work performed by his organization and meet the latest edition of the standard qualification procedure of the American Welding Society and the latest edition of AWWA C-207.

J. Handling

1. Handling and shipping shall be in compliance with the latest edition of AWWA C-200, "Steel Water Pipe".
2. Finished spools shall be stacked on pallets with sufficient spacers or pads to prevent damage to the spool pieces and/or the coatings.
3. Spool pieces showing chips or abrasions will be rejected. The contractor at his expense shall replace or recondition each rejected section.

SECTION 40 05 61.25

MJ RESTRAINED JOINT ADAPTERS

1. GENERAL

- A. A compact, bolt through, Mechanical Joint (MJ) Restrained Adapter designed to connect MJ valves to MJ fittings, or MJ fittings to other MJ fittings at a linear distance not to exceed one and one-half inches shall be provided. The design of the restraint shall be such that it can replace the piece of pipe commonly needed to join an MJ fitting to another MJ fitting or valve. The restraint shall be designed to eliminate the need for MJ glands and rubbers.

2. PRODUCTS

- A. Restrained Adapter shall be an integral casting, i.e. no welds and made of ductile iron conforming to ASTM A80-55-06 and rated at 350 psi
- B. Restrained Adapter shall be supplied with NSF 61, 5-mil fusion bonded epoxy coating conforming to AWWA C116/A21.16-09 as well as the coating, surface preparation and application requirements of ANSI/ AWWA C550.
- C. The same design of Restrained Adapter shall be available in sizes 4" to 20". Restrained Adapter and accessories (MJ gaskets, nuts and bolts) shall be packaged in one (1) box.
- D. Mechanical Joint gasket shall be Styrene Butadine Rubber (SBR) or approved equal.
- E. Bolts shall be weathering steel (Corten). Nuts shall be SAE Grade 2 steel with black oxide coating. For restraint sizes 4" to 8", bolt length shall be 5". For restraint size 12" to 20", bolt length shall be 6".

3. MANUFACTURERS

- A. Restrained Joint Adapters shall be Star Pipe Series 100 MJ, Foster Adapter by In Fact, or approved equal.

SECTION 40 05 61.26 BELL JOINT CLAMPS

1. PRODUCTS

- A. The joint clamp must be designed to fit pipe and fittings with a spigot end OD range of 50.3 to 51.98 inches and with a bell face height up to 5.00 inches.
- B. The joint clamp design must fit and function properly on all classes of both the Dennis Long Company and AWWA standard PIT cast iron pipe, as well as American Standard specifications (ASA) for lead joint cast iron pipe and fittings.
- C. Joint clamps shall have a working pressure rating of 150 psi minimum.
- D. Clamps must be ductile iron and shall have asphaltic coating of approximately 1 mil thick. All bolts must be low alloy Cor-ten and all thread.
- E. Rubber gaskets must not require additional fasteners or restraints to remain securely attached to clamps during assembly. Gaskets shall be made from NBR or EPDM.
- F. Each Bell Joint Clamp provided by the manufacturer shall be packaged and contain all the necessary parts and materials required to install the bell joint clamp on the pipe.
- G. Hex head bolts shall be 1 3/4" - 2" wrench size and be able to accommodate standard air/impact tools and sockets for these sizes. Hex head nuts shall be 1 3/4" wrench size and be able to accommodate standard air/impact tools and sockets for this size. In no case shall the head thickness of a bolt or nut compromise LWC's ability to fasten and tighten bolts for the clamps using impact sockets tools.
- H. The joint clamp shall allow reasonable room for impact socket thickness to ensure standard air impact tools can easily access bolts and nuts on clamps, in a manner that allows standard air/impact tools to assemble, disassemble, tighten or loosen bell joints clamps.
- I. The joint clamp shall be NSF 61 certified.
- J. Clamp shall include the following standard items:
 - a. Standard Hook Assembly
 - b. Body Segment
 - c. Shoe
 - d. Gasket

2. MANUFACTURERS

- A. Clamp shall be proportionally designed for 48" pipe and supplied as Romac bell joint leak clamp 416 BJLC or approved equal.

SECTION 40 05 61.27
DUCTILE IRON PIPE RESTRAINED JOINT GASKETS

1. GENERAL

- A. The restrained joint gaskets shall be designed for use on Louisville Water Company ductile iron pipe meeting the specifications herein "33 05 19 Ductile Iron Pipe".

2. PRODUCTS

- A. The gaskets shall be used in pressurized ductile iron to prevent the joints from separating due to thrust forces.
- B. The gaskets shall be pressure rated to the pressure class of the pipe and fittings. Restrained joint gaskets for pipe 4" to 24" shall have a minimum pressure rating of 250 PSI.
- C. The gaskets shall conform to the latest edition of the AWWA/ANSI C111/A21.11.
- D. The rubber shall be made of EPDM or SBR.

SECTION 40 05 61.28 RESTRAINT JOINT CLAMPS

1. GENERAL

- A. Mechanical joint restraint shall include a restraining mechanism which, when actuated, imparts wedging against the entire circumference of the pipe, increasing its resistance as the pressure increases. Mechanical joint restraints utilizing set screws are not approved for sizes 4" to 12".

2. PRODUCTS

- A. Glands shall be manufactured of ductile iron conforming to the latest edition of ASTM A536.
- B. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. They shall have a working pressure of at least 250 PSI with a minimum safety factor of 2:1.
- C. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts, conforming to the latest editions of ANSI/AWWA A21.11 and C153/A21.53.
- D. Restraint joint clamps from 4" to 12" shall fit both PVC and Ductile Iron Pipe.
- E. Restraint joint clamps from 16" or larger shall fit only Ductile Iron pipe.
- F. Mechanical joint restraint shall include a restraining mechanism which, when actuated, imparts wedging against the pipe, increasing its resistance as the pressure increases.

3. MANUFACTURERS

- A. Prequalified manufactures for Restraint Joint Clamps (or approved equal) are:
 - (1) Romac
 - (2) Star
 - (3) Ford grip rings (for Ductile Iron Pipe 4"-24")
 - (4) Ebba Iron
 - (5) Sigma

SECTION 40 05 61.29 DUCTILE IRON FITTINGS

1. GENERAL

- A. Submit shop drawings
 - 1. Include all fittings, bends, outlets, restrained joints, tees, special deflection bells, adapters, solid sleeves and specials.
 - 2. Include manufacturer's drawings and specifications providing complete details of all items.
 - 3. All other pertinent information for all items to be furnished; product data to show compliance of all couplings, supports, fittings, coatings and related items.
- B. Submit the name of the fitting suppliers.
- C. Submit Catalog cuts and installation instructions for boltless restrained joint pipe, and mechanically restrained and flanged connections to valves and fittings.
- D. If mechanical coupling system is used, submit piping, fittings, and appurtenant items which will be utilized to meet system requirements.
- E. Submit Certification that all bolts to be furnished conform to referenced standards.
- F. Submit information on all warranties.

2. PRODUCTS

- A. Fittings
 - 1. General
 - (1) Pipe fittings shall be ductile iron and meet the requirements of ANSI/AWWA C110/A21.10 or AWWA C153/A21.53.
 - (2) Fittings shall have the same pressure rating, as a minimum, of the connecting pipe. Minimum pressure rating is 350psi for 20-inch diameter and smaller.
 - (3) Fittings shall be provided with the same joints and couplings that match the pipe restraining method.
 - (a) Push On Joints
 - (i) Mechanical Joint Fittings (and Valves)
 - (ii) 4"-12" Utilize Romac Gripper Glands or Bolt-Through Restraint (e.g. Foster Adapters)
 - (iii) 16"-20" Utilize EBAA Iron MegaLug
 - (b) Boltless Restrained Joints
 - (i) 20" and Smaller: Mechanical Joint Fittings, or Boltless Restrained Fittings (same manufacturer as pipe), or Friction type restrained glands such as Megalug, or Mechanical Joint Coupled End Joint
 - (ii) For >20": Boltless Restrained Fittings (same manufacturer as pipe). The use of friction type restrained joints such as Megalugs shall not be allowed for piping greater than 20-inch diameter. Valves may be either Boltless Restrained or Mechanical Joint Coupled End Joint with 316 stainless steel bolts.
 - (c) Flanged Joints = AWWA Flanged Joint Fittings
 - (4) Closures shall be made with restrained mechanical joint ductile iron solid sleeves.
- B. Couplings
 - 1. General
 - (1) Couplings shall meet and be similar to pipeline restraining system.
 - (2) Couplings shall be manufactured for potable water use using standard materials meeting NSF 61 and 372 and AWWA standards.
 - (3) Provide restraining tabs, eyelets or the like where necessary.
 - (4) Couplings shall be from reputable potable water manufactures such as EBAA Iron, Romac, Smith-Blair, Krausz, Dresser, and Ford Meter Box.
 - 2. Restrained Flange Adapters
 - (1) Ductile Iron – ASTM A536, Grade 65-45-12
 - (2) Flanged – ASME/ANSI B16.1, Class 125; match pipe system

- (3) Allowable joint deflection of 5-degrees
- (4) Fully restrained with tie-rods/gussets to limit movement after installation
- (5) Minimum of six (6) restraining T-bolts and nuts made of high strength low alloy steel, coarse thread meeting AWWA C111.
- (6) Wedges acceptable; No set-screws allowed
- (7) Fusion-bonded NSF 61 epoxy coating, interior and exterior
- (8) Romac Restrained Flanged Coupling Adapter (RFCA), Smith Blair Style 911/912 Flange-Lock Restrained FCA, Dresser Style 127 (restrained), or approved equal
- 3. Restrained Dismantling Joint
 - (1) Compatible with flanged fittings
 - (2) Adjustable length of at least 2.5 inches
 - (3) Allowable deflection of a minimum of 1.5 degrees
 - (4) Ductile Iron – ASTM A536, Grade 65-45-12
 - (5) Flanged – ASME/ANSI B16.1, Class 125; match pipe system
 - (6) Restrained with tie-rods to limit movement after installation
 - (7) Minimum of four (4) restraining T-bolts and nuts made of high strength low alloy steel, coarse thread meeting AWWA C111.
 - (8) Fusion-bonded NSF 61 epoxy coating, interior and exterior
 - (9) Romac DJ400 or approved equal
- 4. Dresser Style Couplings
 - (1) Shall consist of two steel follower rings, two resilient gaskets, one steel middle ring, EPDM rubber wedge, and a set of steel follower trackhead bolts.
 - (2) Steel to Steel – prepare ends per manufacturer's recommendations
 - (3) Externally restrained / rodded (stainless steel)
 - (4) Romac 501 or approved equivalent
- 5. MegaLug
 - (1) MegaLug by EBAA Iron or approved equal
 - (2) Fusion bonded epoxy
 - (3) Domestic Iron
- 6. Restrained Transition Couplings – (steel vault to ductile iron water main)
 - (1) Restrained couplings Typically used to join steel pipe (e.g. from vault) to ductile iron pipe water main.
 - (2) Insulating Coupling with separate insulated restraining rods system including rod sleeves, isolation washer/hardware kit.
 - (3) Style shall be from steel pipe size to ductile iron pipe size.
 - (4) Coupling shall have factory fusion-bonded epoxy coating or approved equal.
 - (5) The restraints or double end rods and nuts shall be manufactured of stainless steel nuts and bolts or have a factory-applied corrosion-resistant coating.
 - (6) Coupling shall incorporate dissimilar metals insulating boot and gasket kit including isolation sleeves for tie-rods.
 - (7) The couplings shall be insulating couplings with insulated restraining rods from vault to pipe.

C. CORROSION PROTECTION

- 1. Interior Coatings
 - (1) Ductile iron fittings shall have a cement mortar lining and seal coat in accordance with AWWA C104/A21.4.
 - (2) Fittings
 - (a) Buried fittings may be either factory fusion-bonded epoxy coated per AWWA C550, or cement mortar lined seal coat in accordance with AWWA C104/A21.4. Lining shall be NSF 61 certified.

D. GASKETS

1. General Materials

- (1) All gasket materials shall comply with Table 5-1 of AWWA M-41 and per AWWA C110, C111, and C115
- (2) Rubber-gasket joints shall conform to AWWA C111
- (3) Gaskets shall have proven performance in the potable water industry for resistance to chlorinated and chloraminated water systems.
- (4) Generally EPDM material shall be used for all pipes, fittings and valves.
- (5) Gaskets shall be supplied by the pipe or fitting manufacturer.
- (6) Comply with applicable joint type and pressure rating of the pipe system.

2. Push-On Joints:

- (1) EPDM material
- (2) Nitrile (NBR) shall be used within 200 feet of any buried underground petroleum storage tank
- (3) "Joint Restraint"
 - (a) Shall be used minimum within 200 feet of any facility such as a tank, pump station or control valve vault (e.g. PRV) or as shown on plans for pipe sizes <16-inches.
 - (b) US Pipe Field-Lok, or American Fast-Grip, or approved equal.

3. Flanged Joints

- (1) Gaskets shall be full face
- (2) Pre-punched holes
- (3) Minimum 1/8" thick
- (4) EPDM or Viton material
- (5) Special pressure rated for 350psi such as US Pipe "Flange-Tyte" or American "Toruseal" or approved equal.

4. Flange Isolation Kits

- (1) Isolating and Sealing Gasket
 - (a) One full faced isolating and sealing gasket, LineBacker Type "E", 1/8" thick, G-10 retainer containing a precision tapered groove to accommodate the controlled compression of a Teflon (or Viton) quad-ring sealing element. Sealing element placement shall accommodate either flat, raised face or RTJ flanges. The quad-ring seal shall be pressure energized. The G-10 retainer shall have a 550 volts/mil dielectric strength and a minimum 50,000 psi compressive strength. The full faced flange isolating gasket shall be 1/8" less in I.D. than the I.D. of the flange in which it is installed.
- (2) Full Length Bolt Isolating Sleeves
 - (a) One full length G-10 sleeve (extending half way into both steel washers) for each flange bolt. The G-10 shall be a 1/32 inch thick tube with a 400 volts/mil dielectric strength and water absorption of 0.10% or less.
- (3) Washers
 - (a) Two, 1/8 inch thick, G-10 isolating washers for each bolt. Their compressive strength shall be 50,000 psi, dielectric strength 550 volts/mil and water absorption of 0.10% or less. Two, 1/8 inch thick zinc plated, hot rolled steel washers for each bolt. The I.D. of all washers shall fit over the isolating sleeve and both the steel and isolating washers shall have a same I.D. and O.D.

SECTION 40 05 61.30
REPAIR COUPLING AND GASKETS

1. GENERAL

A. Center Ring, End Ring and Gaskets

1. Standard couplings shall have the ability to be used as a straight coupling as well as a transition coupling.

2. PRODUCT

- A. Couplings shall be ductile iron per ASTM A536 or greater and shall be shop coated for protection during shipment and storage. Ends must have a smooth inside taper for uniform gasket seal. The 4, 6 and 8 inch couplings shall have a center ring length of a minimum of five (5) inches. The 10-12 inch couplings shall have a center ring length of minimum of six (6) inches. The 14-16 inch and larger couplings shall have a center ring length of a minimum of seven (7) inches.
- B. Center rings shall have applicable outside diameter (O.D.) ranges posted on the barrel for easy identification. This may be in the form of stamp or adhered label.
- C. Gaskets shall be sized to fit standard cast and ductile iron pipe and shall be engineered of rubber compound suitable for potable water lines per ASTM D2000. Gaskets must have the size embossed for easy identification.
- D. Transition Rings and Gaskets
 - (a) Transition rings and gaskets must be sized to be used with repair couplings to provide transition in outside diameter (O.D.) ranges from standard pipe to oversized pipe as indicated by outside diameter (O.D.) ranges.
- E. Bolts and Nuts
 - (a) Bolts and Nuts shall be trackhead with a heavy hexagon nut. Bolts and nuts shall be #304 stainless steel with rolled threads and treated to prevent galling.

3. MANUFACTURERS

A. Acceptable Manufacturers (or approved equal):

Ford Meter Box	Powerseal
JCM	Romac
Mueller	SmithBlair

SECTION 40 05 65.23 VALVES AND APPURTENANCES

1. GENERAL

- A. All valves furnished under this specification shall conform to the latest edition of AWWA C509 "Standard for Resilient Seat Gate Valves for Water Systems" or AWWA C515 Standard, "Reduced- Wall, Resilient-Seated Gate Valves for Water Supply". Protective interior shall be provided meeting all requirements of the latest edition AWWA C550 Standard, "Protective Interior Coating for Valves and Fire Hydrants" (latest edition). Only ductile iron bodies will be accepted.
- B. Catalog data, net weight and certified drawings as per the latest edition of Section 4.1, 4.2, and 4.3 of AWWA C509 and/or AWWA C515 Standards (latest editions) shall be furnished with submittal.

2. PRODUCTS

- A. Resilient-seated gate valves shall conform in all respects to ANSI/AWWA C515-09 with non-rising stems, fully bronze mounted with O-ring seals. Stems shall be made of one piece as per the requirements of AWWA C509 and/or AWWA C515 Standards (Section 4, latest editions). Valves shall be of standard manufacture and of the highest quality both as to materials and workmanship and shall conform to the latest revisions of AWWA Specification C-500. Valves shall have a rated working pressure of 250 psi, and test pressure of 500 psi and shall be opened by turning clockwise only.
- B. All internal components shall be able to withstand without damage or distortion an input torque of 50 ft-lbs. above that listed in the torque test in Section 5 of the AWWA C509 and/or AWWA C515 Standards (latest edition). All test results pertaining to Section 5 of AWWA C509 and/or AWWA C515 Standards (latest edition) shall be furnished upon request.
- C. All bonnet and packing gland nuts and bolts, and operator retainer nuts or pins shall not be less than #304 stainless steel. All bolts and fasteners shall be non-metric. Bonnets for 4" diameter gate valves shall have four (4) bolts. Bonnets for 6" – 12" diameter shall have at least six (6) bolts. Bonnets for 16" diameter and larger shall have bolts per manufacturer recommendation.
- D. All bonnet and packing gland bolts shall be zinc or cadmium electroplated steel; packing gland bolts shall have bronze nuts.
- E. Gate Valves shall be designed for buried service where groundwater may completely submerge the valve and actuator. Gate valves shall be furnished with mechanical joint end connections with stainless steel hardware T-316. The end connections shall be suitable to receive ductile iron pipe. All gate valves 24-inch and larger shall be equipped with mechanical restraint mechanisms to pipe utilizing a positive mechanical restraint such as American's Coupling Gland Ends, or approved equal, employing stainless steel 316 bolts and nuts. No friction type restraint such as Mega lugs will be acceptable for 24-inch and larger gate valves.
- F. Wheel valves shall have flanged ends rated at 125 lbs. in accordance with AWWA C509 and/or AWWA C515 Standards (latest editions). It shall also conform to the dimensions and drillings of ANSI B16.1, class 125 or ANSI/AWWA C110/A21.10 Standards (latest editions). Wheel valves shall be handwheel operated, left hand open with an arrow symbol (\leftarrow LHO)(left hand open) indicating direction of open. Handwheels shall be ductile iron.
- G. All gate valves supplied shall be MJ x MJ, or Flange x MJ type. The operating nut shall be ductile iron. Gate and tapping valves shall have operating nuts that are right hand open (clockwise) type and labeled for the direction of open with an arrow symbol (\rightarrow)

- RHO)(right hand open). The operating nut locking mechanism shall be visibly centered on the stem.
- H. All valves and appurtenances shall have the name of the manufacturer, year manufactured, valve size, flow-directional arrows, and the working pressure for which they are designed cast in raised letters on some appropriate part of the body.
 - I. The epoxy coating shall be fusion-bonded and shall comply with ANSI/AWWA C550 Standards (latest editions) on all internal and external surfaces of the valve body and bonnet to a minimum thickness of 10 mils.
 - J. The disk shall seat in wedging fashion utilizing two guides, either integral with the body or the wedge. The disk shall be fully encapsulated with EPDM or equivalent rubber.
 - K. Gate valves and tapping valves shall be supplied with a means to lift and handle each valve (i.e. cast-in-place lifting lugs or locking steel collars that attach to the stem directly under the operating nut).
 - L. All valves shall packages shall include MJ Gate accessory packs, bolts and gaskets for tapping and flanged gates as required for installation. The valves shall be protected with end caps, cardboard or plastic, over each outlet to protect the coating on the interior of the valve.
 - M. Contractor shall provide a certificate stating that the valve and all materials used in its construction conform to the requirements of AWWA C509 and/or AWWA C515 Standards (latest editions)..
 - N. Format and location: The gate valves shall be Iron body, Resilient Seat Gate Valve as manufactured by Mueller Co., American Flow Control Series 2500, or an approved equal.
 - O. The valve manufacturer shall supply and integrally mount all valve operators at the factory. The valve and operators shall be shipped as a unit.

SECTION 40 05 67.36
WATER PRESSURE REGULATORS FOR PRV

1. PRODUCT

- A. Regulators must meet requirements of ASSE Standard 1003 – “performance requirements for water pressure reducing valves”.
- B. Regulators must have an integral by-pass check valve.
- C. Regulators must have a built in strainer on regulators 1” and smaller.
- D. Regulators must have bronze bodies with sealed spring cage. Sealed spring cage shall be bronze or corrosion resistant 304 stainless steel or epoxy coated, cast iron with adjusting screw.
- E. Regulators must cover the range of 75-150 PSI and be factory set at 85 - 90 PSI. Bidders must include instructions for adjusting pressure with each regulator.
- F. ¾” Regulators shall be furnished with ¾” male meter thread ends and must meet or exceed a minimum flow capacity of 22 GPM at a 50 PSI drop below set pressure.
- G. 1” Regulators shall be furnished with 1” male meter thread ends and must meet or exceed a minimum flow capacity of 32 GPM at a 50 PSI drop below set pressure.
- H. 1 1/2” Regulators shall be furnished with 1 1/2” NPT threaded female union inlet x NPT female outlet and must meet or exceed a minimum flow capacity of 70 GPM at a 50 PSI drop below set pressure.
- I. 2” Regulators shall be furnished with 2” NPT threaded female union inlet x NPT female outlet and must meet or exceed a minimum flow capacity of 100 GPM at a 50 PSI drop below set pressure.
- J. All nuts and bolts shall be #304 stainless steel.
- K. Elastomers must be EPDM Rubber.

2. MANUFACTURERS

- G. Prequalified models are the following:
 - 1. Watts L25AUB-Z3-HR-Z6
 - 2. Wilkins 600 XL HR-SC-DM

SECTION 40 05 78.11 AIR RELEASE VACUUM VALVE

1. GENERAL

- A. Air release and vacuum valves shall be designed to control the flow of large air volumes both into and out of the pipelines to which they are connected. Valves shall be tight against leakage under a working pressure of 250 psi and shop tested at a pressure of 300 psi.

2. PRODUCTS

- A. The air release vacuum valve shall be comprised of a small orifice assembly and large orifice assembly housed in a single body. The large orifice assembly shall exhaust air from a pipeline during the initial filling of the pipeline. The large orifice assembly shall not blow shut while exhausting air, even while venting air at sonic velocity. When all air has been exhausted from the pipeline, the large orifice float ball shall be buoyed up to seat tightly against a resilient seat ring. The large orifice float ball shall remain tightly closed while the pipeline is under positive pressure. Should the pipeline pressure fall below atmospheric pressure, the large orifice float ball shall fall away from the seat ring and permit air to enter the pipeline.
- B. The small orifice assembly shall automatically release air accumulations from the pipeline while under positive pressure. When the valve body fills with air, the small orifice float ball falls to open the small orifice and exhaust the air to atmosphere. When the air has been exhausted, the small orifice float shall be buoyed up and tightly close the small orifice. There shall be no baffles, deflectors, or stems.
- C. Each valve shall be furnished with a flanged gate valve for isolation purposes.
- D. Referenced Standards:
 - 1. American Society of Mechanical Engineers (ASME): B16.1, Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.
 - 2. American Water Works Association (AWWA): C512, Standard for Air-Release, Air Vacuum, and Combination Air Valves for Waterworks Service. C550, Standard for Protective Interior Coatings for Valves and Hydrants.
- E. Air release vacuum valve shall conform to AWWA C512. The exterior of air valves shall be coated in accordance with AWWA C550. The interior of air valves shall be coated in accordance with AWWA C550. Air release vacuum valves shall be factory tested in accordance with AWWA C512. They shall be suitable for operating pressures between 3 and 250 psi for water service. They shall combine operating features of air and vacuum valve, and air release valve. The air and vacuum portion shall automatically exhaust air during filling of system and allow air to re-enter during draining or when vacuum occurs. The air release portion shall automatically exhaust entrained air that accumulates in system. The valve shall be single body or dual body with air/water inlet: NPT and Air Outlet: NPT.

3. MANUFACTURERS

- A. Acceptable manufacturers (or Approved Equal):
 - 1. A.R.I. Flow Control Accessories Ltd.; Model D-040-C, D-040-STST.
 - 2. A.R.I. Flow Control Accessories Ltd.; Models S-050-C, S-050-C-V, S-052
- B. Materials:
 - 1. Body and cover: Reinforced nylon body and stainless steel base or stainless steel body and stainless steel base.
 - 2. Base Reinforced nylon or stainless steel.
 - 3. Clamping stem, plug – Reinforced nylon
 - 4. Float – Foamed polypropylene
 - 5. Flange made of reinforced nylon/cast ductile/ ST 37

- 6. 2-Inch threaded male connection NPT
- 7. Discharge outlet – polypropylene
- C. Design requirements:
 - 1. Size: 2 IN.
 - 2. Working Pressure: 250 psi
 - 3. Release 10 cfm at 10 psi differential at 150 psi line pressure.
- D. Contractor shall furnish any accessories required to provide a completely operable valve.
- E. Air release vacuum valve shall be complete shop assemble unit including any interconnecting piping, speed control valves, control isolation valves and electrical components.
- F. Air release vacuum valve shall have internal epoxy coating suitable for potable water for all iron body valves in accordance with AWWA C550.
- G. Air release vacuum valve shall be shop hydrostatically tested to piping system test pressure.
- H. Contractor shall provide one (1) set of any special tools or wrenches required for operation or maintenance for each type valve.

SECTION 40 05 81.13 FIRE HYDRANTS

1. PRODUCTS

- A. Fire Hydrants furnished under this bid shall meet or exceed the American Water Works Association (AWWA) latest edition of Standard C502 – “Standard for Dry Barrel Fire Hydrants,” except as otherwise noted in these specifications.
- B. Hydrant inlet shall be 6” DIPS mechanical joint with accessory packs unattached to joint.
- C. Hydrants shall be supplied with black caps and gaskets having 1 ½” pentagon nut and supplied without chains.
- D. All below ground external bolts, studs and nuts (excluding MJ Bolts) shall be 304 stainless steel or approved equal.
- E. Gaskets and other materials shall not contain asbestos.
- F. Manufacturer will provide full detail or chemical composition of all lubrication oil and or grease.
- G. Hydrants shall be furnished in varying depths of bury. Bury depth shall be stenciled on the lower part of the hydrant barrel in a minimum of 3” lettering.

CASTING AND APPEARANCE

- A. Hydrants shall be furnished with (2) two – 4” I.D. outlets at 120°. The hydrants operating nut shall be 1 ½” pentagon and 1” minimum in height.
- B. Hydrants furnished shall have all bronze on bronze moving parts. Hydrants shall be coated with a primer and a second coat of the color “traffic orange” or “chrome yellow” as specified by the Project Manager.
- C. Hydrant stem threads shall be Acme Profile. Hydrant nozzle threads shall be copper alloy National Standard Threads.
- D. Distance from the bury line to center of the breakaway flange shall be between 2 & 4 inches. Distance from the bury line to the center of the nozzle shall be between 18 & 24 inches.
- E. Approved bury depths: 3’6”, 4’, 4’6”, 5’, 5’6”, 6’ and 6’6”

HYDRANTS – OPERATION

- A. Hydrants shall be designed for a minimum working pressure of 200 psi.
- B. Hydrants shall have a minimum main valve openings of 5 ¼”.
- C. All hydrants shall have breakaway stem and barrel. Breakaway stem coupling shall be attached to stem with a coupling pin that protrudes a minimum of 1/2” to facilitate removal. Stem coupling pin must protrude one (1) side only and be secured with a cotter pin. Stem coupling pin material to be 304 stainless steel or approved equal.
- D. The frangible parts (stem coupling and flange) shall break in a manner that prevents damage to other parts of the hydrant.

- E. All hydrants shall have removable valve stem and seat.
- F. Hydrants shall be self-draining.
- G. Hydrant internal drain holes shall comply with the following requirements:
 - i. Minimum of two (2) drain holes per hydrant in the seat ring
 - ii. Minimum drain hole diameter shall be 0.25"
- H. Hydrant external drain ports shall comply with the following requirements:
 - i. Minimum of two (2) drain ports per hydrant
 - ii. Drain ports shall be tapped with NPT
 - iii. Minimum tap size shall be 0.125" NPT
 - iv. Hydrants shall be shipped with drain ports unplugged.
- I. Hydrant valve seat threads shall be copper alloy to copper alloy.
- J. Hydrants shall not exceed a maximum allowable head loss of 13.0 PSI at 1,500gpm.
- K. Hydrant main valve shall close with pressure.
- L. Hydrant lubrication shall be by oil or grease.

2. MANUFACTURERS

- A. Approved manufacturers for fire hydrants are as follows (or approved equal):

American Flow Control	6" B84B
The Mueller Centurion	A 425 5/14
US Pipe Metropolitan	250 M94

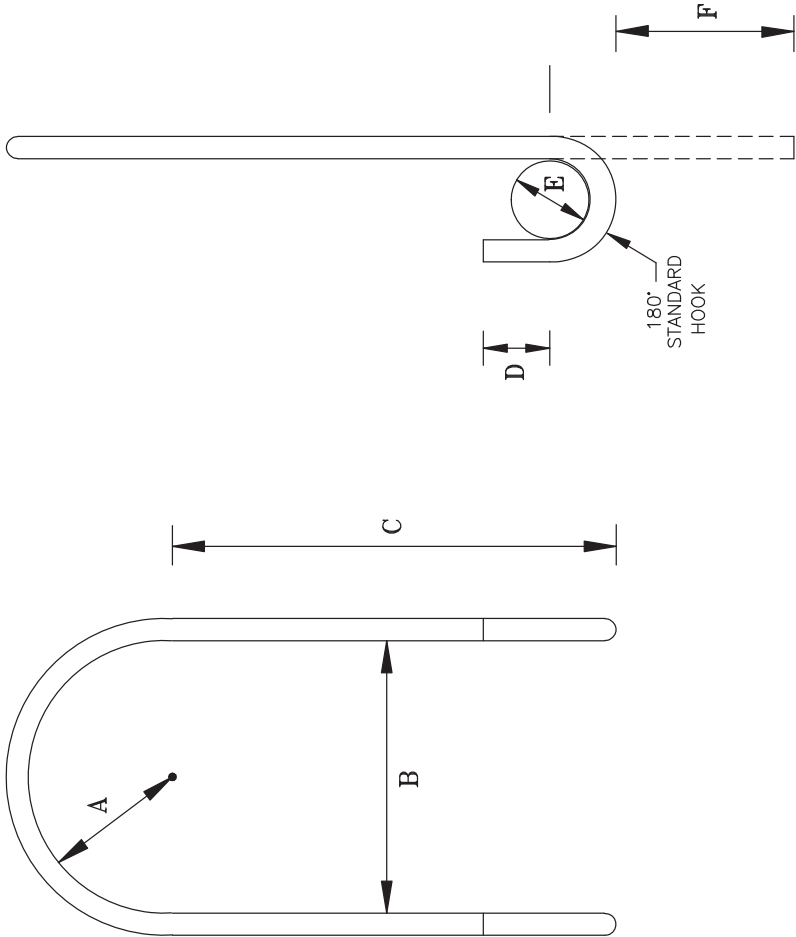
SECTION 40 05 89
KEYTUBE

1. PRODUCTS

- A. Keytube shall be new corrugated polyethylene pipe with appropriate inside diameter, non-perforated and flexible.
- B. Corrugated polyethylene pipe shall be double wall.
- C. Corrugated polyethylene pipe inner wall thickness shall be a minimum 0.5 mm.
- D. Corrugated polyethylene pipe shall be made in accordance to ASTM 2648, ASTM 477, ASTM 3212 and AASHTO M 252
- E. Corrugated polyethylene pipe shall be black in color.
- F. Corrugated polyethylene pipe shall be suited for heavy construction.

2. MANUFACTURERS

- A. Corrugated polyethylene shall be Maxflo AE Pipe as manufactured by Timewell Drainage Products, Incorporated or approved equal.



NOTES:

- 1. REINFORCING STEEL SHALL BE DEFORMED GRADE 60 AND EPOXY COATED.
- 2. REINFORCING STEEL SHALL BE INSTALLED WITH A MINIMUM DISTANCE OF 3" TO SURROUNDING TRENCH WALLS AND BOTTOM.

REINFORCING SCHEDULE

GATE VALVE SIZE	BAR SIZE	TOTAL LENGTH (+/-)	A	B	C	D	E	F
4" DIA.	#4	62"	5"	10"	17"	2.5"	3"	6"
6" DIA.	#4	68"	6"	12"	18"	2.5"	3"	6"
8" DIA.	#4	76"	7.5"	15"	20"	2.5"	3"	6"
12" DIA.	#6	103"	9.5"	19"	28"	3"	4.5"	8"
16" DIA.	#8	155"	12"	24"	47"	4"	6"	11"
20" DIA.	#10	218"	13.5"	27"	70"	5"	10.75"	17"

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300 S. 3RD STREET, SUITE 200
JEFFERSON, NH 02464-3400
GREGORY C. HEITZMAN - PRESIDENT
JAMES H. BRAMMILL - VICE PRESIDENT/CHIEF ENGINEER

STANDARD DRAWING
REINFORCING STEEL FOR
ANCHORING GATE VALVES

DATE	JUNE 2009	SCALE	NONE
DRAWING NO.	5006	SHEET	1 OF 1



NOTE
LID HAS WAFFLE DESIGN OF $\frac{7}{16}$ " SQUARES WITH
 $\frac{1}{16}$ " DEEP x $\frac{3}{16}$ " WIDE VALLEYS BETWEEN SQUARES
WITH A BLOCK TYPE "W" IN CENTER
 $1\frac{1}{2}$ " TALL x $1\frac{1}{2}$ " WIDE WITH $\frac{1}{4}$ " WIDE BARS
AROUND WHICH A SQUARE BACKGROUND
 $2\frac{3}{8}$ " x $2\frac{3}{8}$ " x $\frac{1}{16}$ " DEEP HAS BEEN CAST
THE WAFFLE DESIGN IS OPTIONAL
CASTING DIMENSIONS SHOWN ARE MINIMAL
THICKNESSES
CASTING TOLERANCES ARE + $\frac{1}{16}$ " FOR VALVE BOX
FRAME AND - $\frac{1}{16}$ " FOR LID
SHOP DRAWINGS MUST BE SUBMITTED TO THE
ENGINEER FOR APPROVAL.



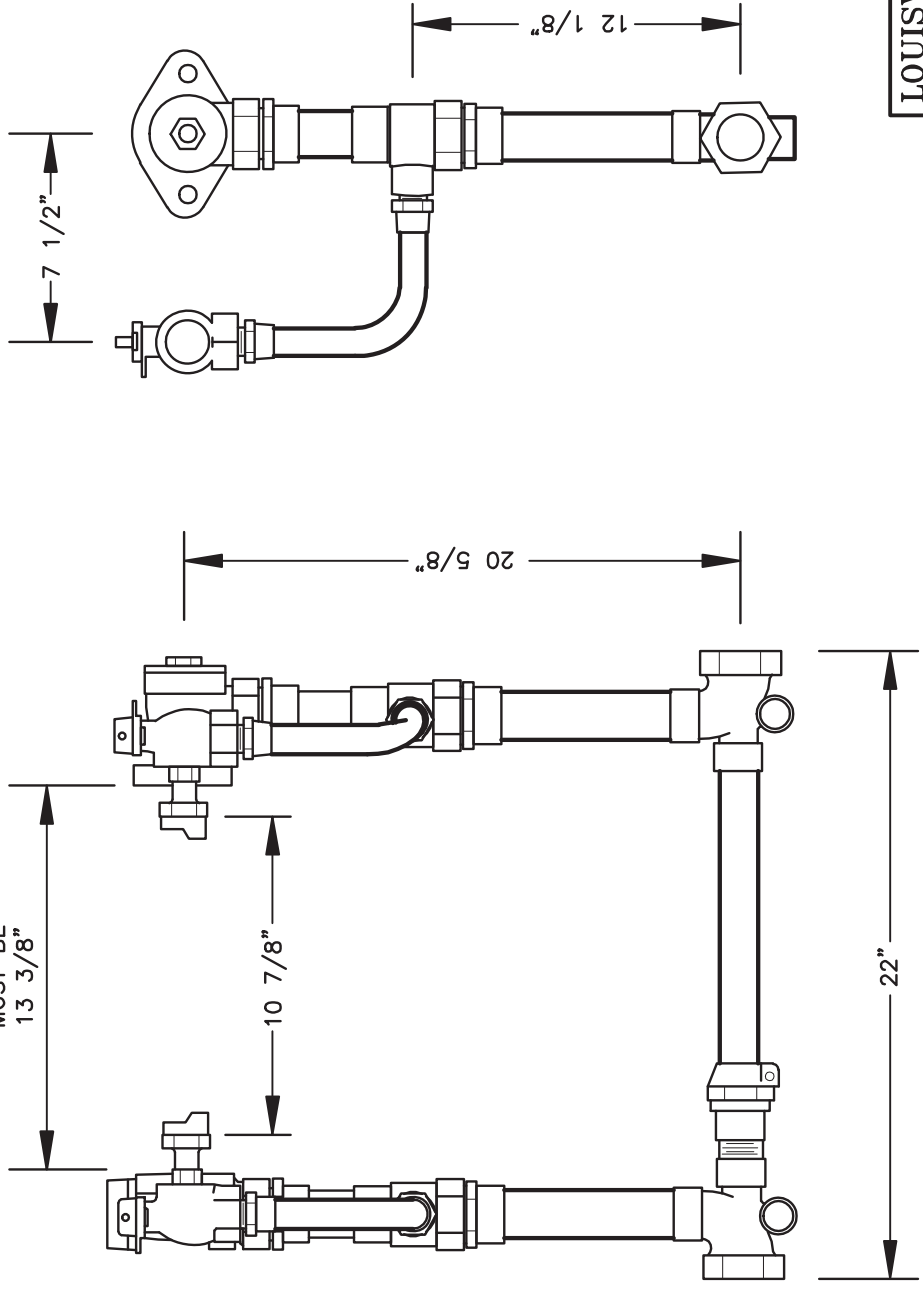
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GREGORY C. HEITZMAN - PRESIDENT
JAMES H. BRANTVELL - VICE PRESIDENT/CHIEF ENGINEER

STANDARD DRAWING

VALVE BOX & LID

DATE	MARCH 2008	SCALE	NONE
DRAWING NO.	5000	SHEET	1 OF 1

MEASUREMENT FROM ANGLE METER VALVE
FLANGE TO ANGLE CHECK VALVE FLANGE
MUST BE
13 3/8"

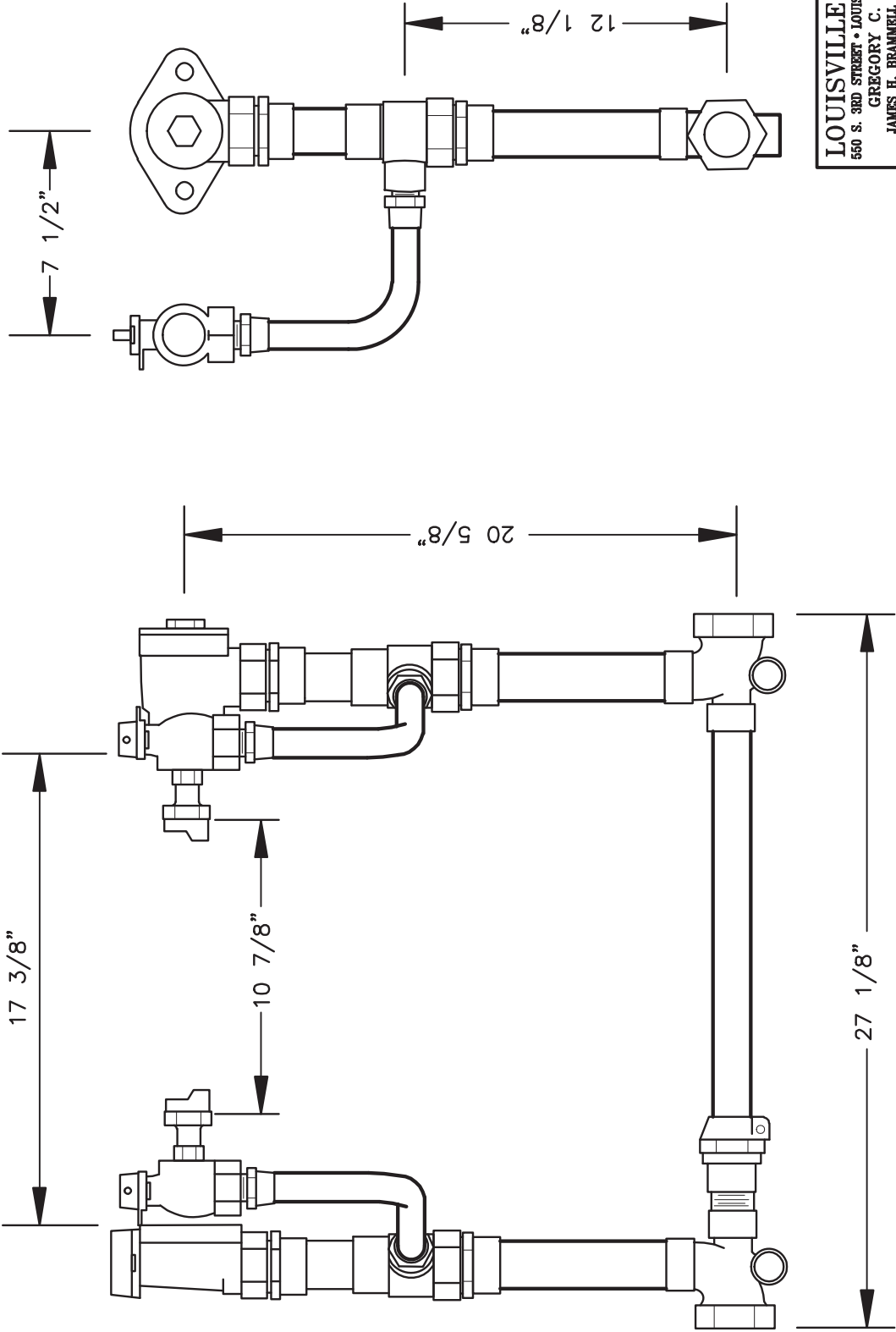


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STANDARD DRAWING
1 1/2" METER SETTER
WITH 1" BY-PASS

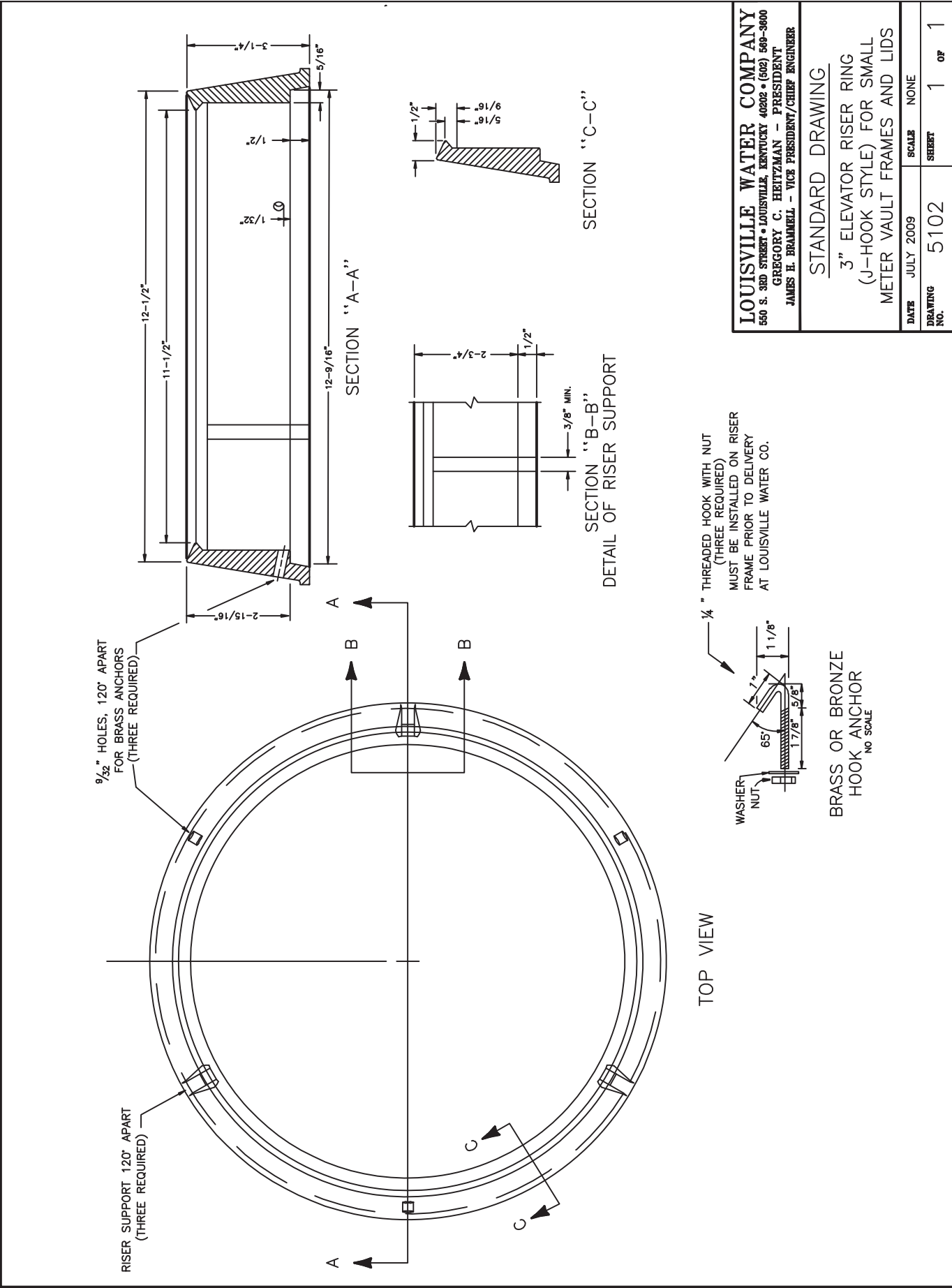
DATE	JUNE 2008	SCALE	NONE
DRAWING NO.	3204	SHEET	1 OF 1

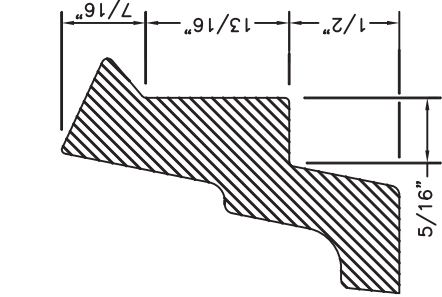
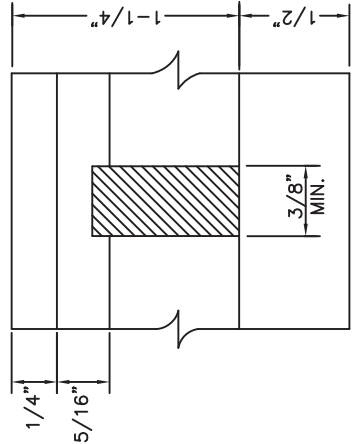
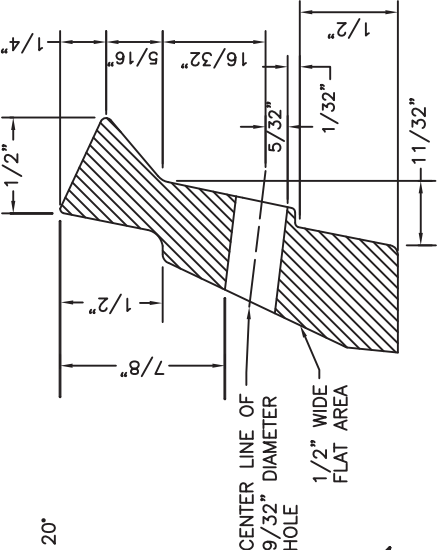
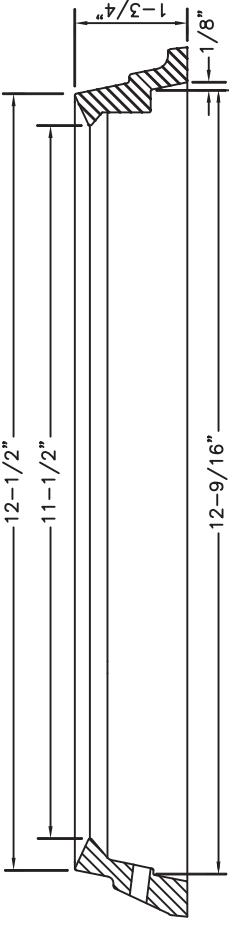
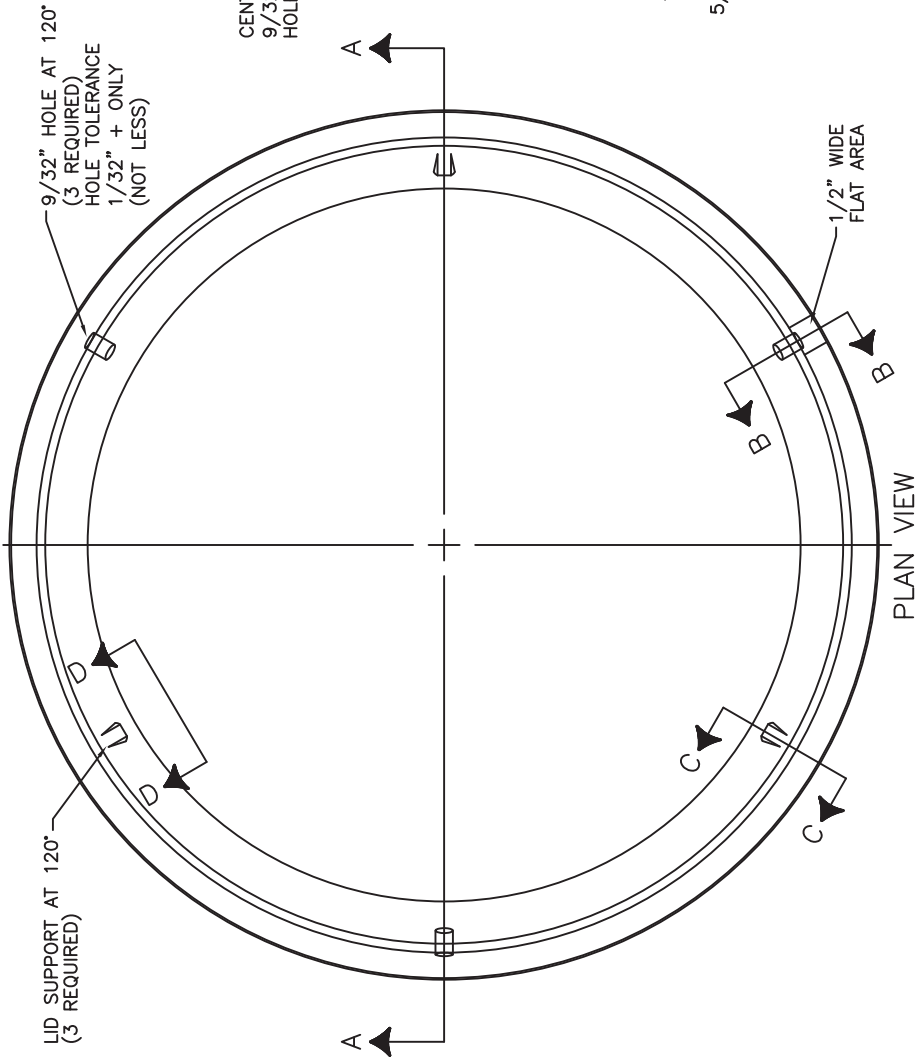
MEASUREMENT FROM ANGLE METER VALVE
FLANGE TO ANGLE CHECK VALVE FLANGE
MUST BE
17 3/8"



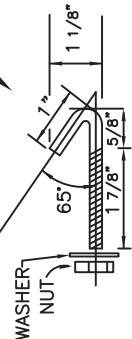
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JAMES H. BRAMMELL - VICE PRESIDENT/CHIEF ENGINEER

STANDARD DRAWING			
2" METER SETTER WITH 1" BY-PASS			
DATE	JUNE 2008	SCALE	NONE
DRAWING NO.	3205	SHEET	1 OF 1





1/4" THREADED HOOK WITH NUT
(THREE REQUIRED)
MUST BE INSTALLED ON RISER
FRAME PRIOR TO DELIVERY
AT LOUISVILLE WATER CO.



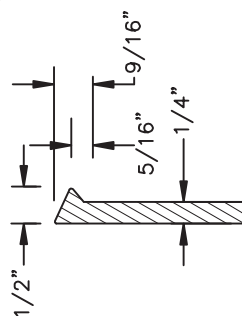
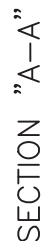
BRASS OR BRONZE
HOOK ANCHOR
NO SCALE

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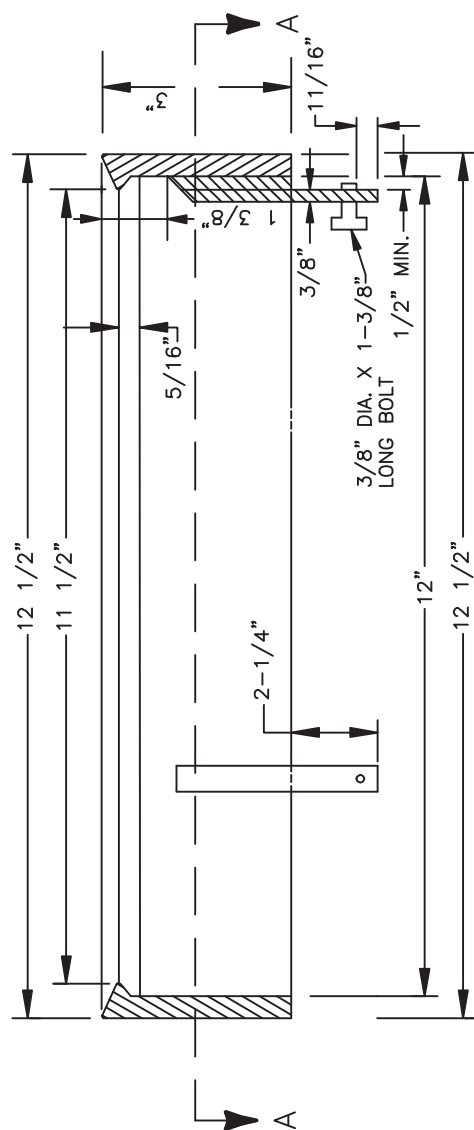
STANDARD DRAWING
1-1/2" ELEVATOR RISER RING
(J-HOOK) FOR SMALL METER
VAULT FRAMES AND LIDS

DATE	MAY 2010	SCALE	NONE
DRAWING NO.	5103	SHEET	1 OF 1

SECTION "A-A"



SECTION "C-C"



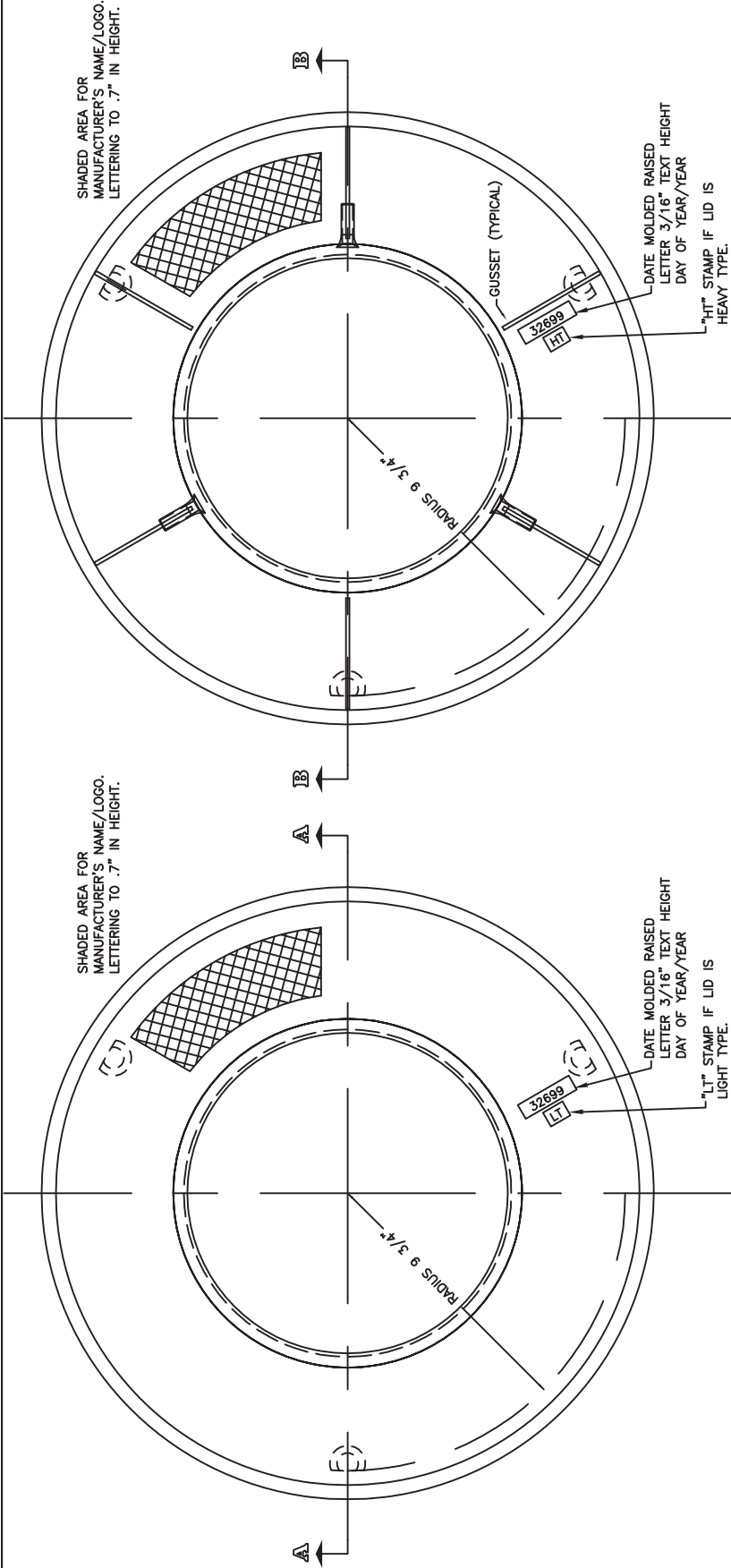
SECTION "B-B"

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STANDARD DRAWING

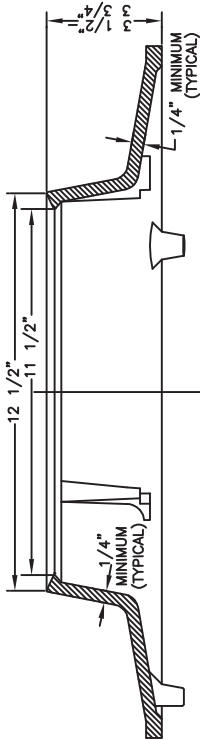
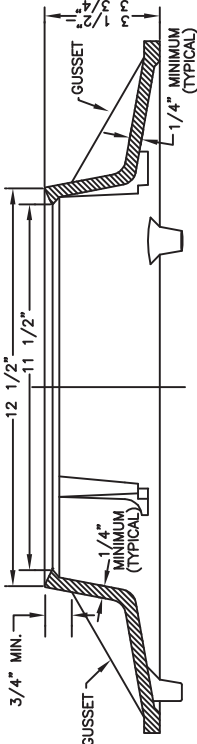
3" RISER (HEX HEAD BOLT)
FOR SMALL METER VAULT COVERS

DATE	DEC 2010	SCALE	NONE
DRAWING NO.	5103B	SHEET	1 OF 1



LIGHT METER VAULT FRAME

HEAVY METER VAULT FRAME

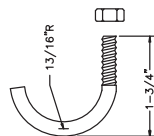


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SPENCER W. BRUCE, P.E. - PRESIDENT
TIMOTHY KRAUS, P.E. - VICE PRESIDENT / CHIEF ENGINEER

STANDARD DRAWING

LIGHT AND HEAVY VAULT FRAME

DATE	SEPTEMBER 2019	SCALE	NONE
DRAWING NO.	5104	SHEET	1 of 1



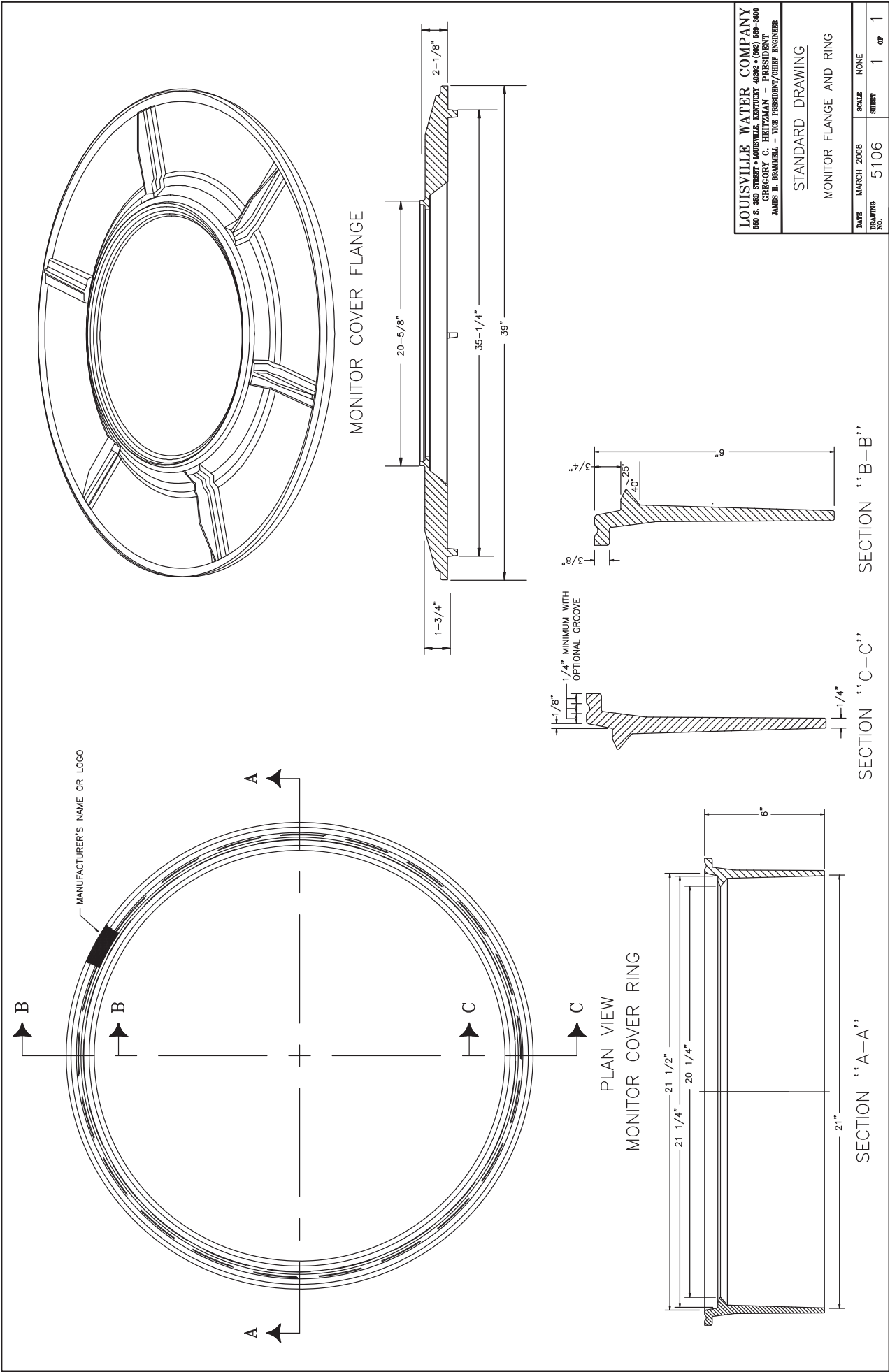
REVISÉ: 3-31/08 RC

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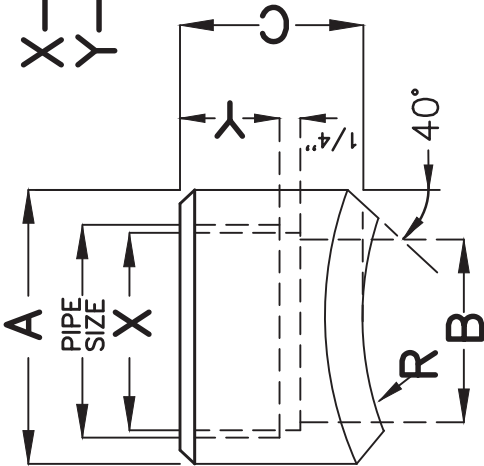
STANDARD DRAWING

MONITOR LID RISER RING

DATE	MARCH 2008	SCALE	NONE
DRAWING NO.	5105	SHEET	1 OF 1



X-NPT TAP DRILL SIZE
Y-PIPE DEPTH MIN.



NOTE:
FOR TAKE OFF DIM'S
ADD "C" DIM, PLUS
HALF THE HEADER SIZE.

PIPE SIZE	A	B	C	Y	R
1/2	1.125	.687	1.000	.781	0.420
3/4	1.375	.875	1.125	.793	0.525
1	1.625	1.125	1.375	.984	0.657
1 1/4	2.062	1.437	1.500	1.008	0.830
1 1/2	2.250	1.687	1.500	1.025	0.950
2	2.875	2.218	1.750	1.058	1.187
2 1/2	3.375	2.500	2.000	1.571	1.437
3	4.000	3.125	2.500	1.633	1.750

ALL DIMENSIONS ARE INCHES.
(ENGLISH UNITS)

LOUISVILLE WATER COMPANY
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JAMES H. BRAMMELL - VICE PRESIDENT/CHIEF ENGINEER

STANDARD DRAWING
Weldolet
Fitting

DATE	FEBRUARY 2012	SCALE	NONE
DRAWING NO.	9004	SHEET	1 OF 1

2022

**TECHNICAL SPECIFICATIONS
AND
STANDARD DRAWINGS
FOR
4" – 20" PIPELINE CONSTRUCTION**



**LOUISVILLE WATER COMPANY
LOUISVILLE, KENTUCKY**

**SPENCER W. BRUCE, P.E. – PRESIDENT
TIMOTHY KRAUS, P.E. – VICE PRESIDENT, CHIEF ENGINEER**

LOUISVILLE WATER COMPANY
TECHNICAL SPECIFICATIONS AND STANDARD DRAWINGS
4" – 20" PIPELINE CONSTRUCTION
2022

The Technical Specifications and Standard Drawings are provided as a technical resource for the construction of water projects managed and contracted by the Louisville Water Company. The Technical Specifications and Standard Drawings will apply to water projects with 4-inch through 20-inch pipeline sizes. All work shall be performed in accordance with accepted workmanship practices and the Technical Specifications and Standard Drawings.

The Technical Specifications and Standard Drawings revisions shall become effective immediately upon formal adoption by the Chief Engineer of the Louisville Water Company and shall supersede all former Technical Specifications and Standard Drawings for Pipeline Construction. Revisions are planned on a 5-year cycle. A copy of the current edition of the Technical Specifications and Standard Drawings may be obtained from the Chief Engineer at the 550 S. Third St. office, the Louisville Water Supervisor of Construction Inspection, Construction Inspection Services at the 4801 Allmond Ave. office, or at Louisville Water.com.

The Technical Specifications and Standard Drawings have been prepared under the direction of the Vice President / Chief Engineer on behalf of the Louisville Water Company and no part of the Technical Specifications and Standard Drawings may be reproduced or copied in any form without the written prior consent of the Vice President / Chief Engineer.

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TECHNICAL SPECIFICATIONS **FOR PIPELINE CONSTRUCTION**

1. GENERAL REQUIREMENTS

1.1 Pre-construction Valve Inspection

Prior to the beginning of construction, the Contractor shall be responsible for locating and inspecting all existing valves associated with the work to be done. Specific valve information and locations can be found in the **SUPPLEMENTARY SPECIFICATIONS**. Inspection work to be done on these valves shall be included in the Contractor's base bid, and shall consist of the following:

- A. Locate the valve in the field. Valve boxes that are paved over or buried shall be uncovered and made accessible.
- B. Inspect key tubes and operating nut. Key tubes shall be cleared of debris and the operating nut made accessible. Gate Keys must be placed and turned on Gate Valve Operating Nuts to ensure the functional operation of the valve. Company's Inspector must be present when operating gate valves.
- C. Valve boxes (round tops) and lids shall be raised to grade where necessary.

Any valve determined by the Company to be inoperative shall be excavated and repaired or replaced by the Contractor as deemed necessary by the Company's Project Manager. Unit costs shall be as submitted by the Contractor in the **BIDDER'S PROPOSAL** form.

Except in cases of emergency, the Contractor shall not operate any valve without the direct supervision of the Company's Project Manager or Inspector. In an emergency, the Company's Inspector and Company's Radio Room shall be immediately notified by the Contractor. The Company's Radio Room direct phone line is (502) 569-3600, ext. 2700.

1.2 Signage

1.2.1 Project Identification

The Contractor is required to install a project sign on each end of the project limits, at a minimum, unless on dead end roads where only one sign will be required. The sign shall be furnished by the Company and consist of a 4ft. x 4ft. or a 4ft. x 8ft. sheet of 1/4in. corrugated plastic board. The Contractor

shall supply the materials to install the sign using two – 4in. x 4in. posts by 10ft. in length set in concrete anchors with 18in. diameter and 3ft deep, primed and painted white, or other suitable posting method approved by the Company's Inspector.

The Contractor shall supply the materials to mount the sign to the posts using three – 2 ½ in. galvanized lag bolts with 1in. diameter galvanized washers on each post. The Contractor must install the signs prior to beginning any work and not remove the signs until final restoration is approved. Project Identification signs may not be required on new development projects, Kentucky Transportation Cabinet projects, on non-public roadways or projects less than 500 ft. The Project Identification signs shall be returned to Allmond Avenue inspection after project completion by the Contractor.

1.2.2 Contractor Vehicle Signage

The Contractor is required to display Louisville Water Contractor magnetic signs on both sides of all licensed vehicles when performing Louisville Water project contract work. The Company's Inspector will assign and collect magnetic signs on a project basis.

1.3 Traffic Control, Permits, and Regulations

1.3.1 Traffic Control

Wherever the excavation is in right-of-way, the Contractor shall conduct their operations so that at least one lane of traffic is always kept open, unless otherwise approved by the permitting agency. Where the excavation is performed in an intersection, the work shall be completed in one work day, including backfilling, placement of a concrete cap, or temporary bituminous pavement. Temporary paving restoration shall be adequately maintained until permanent pavement is placed.

A traffic control plan is required by the permitting agency and shall be provided by the Contractor to the Company's Project Manager prior to the permit request. The plan shall be digitally drafted utilizing an approved software and shall be in accordance with the Kentucky Department of Highways and/or Louisville Metro Public Works regulations and templates. The traffic control plan will be prepared by the Contractor and submitted by the Company to the respective agencies with the requested permit.

Traffic control shall be in accordance with the Federal Highway Administration Part VI of the Manual on Uniform Traffic Control Devices (MUTCD) latest edition.

Traffic control on streets shall be in accordance with requirements of appropriate City or County jurisdiction.

Specific signing and traffic control are incidental to this project and shall be determined by representatives from the appropriate agencies. No extra payment will be made for placement of these traffic controls.

Specific traffic control signage referencing lane blockages, detours, flaggers, etc. shall be removed from the site or covered when not in use. Signs that provide general messages such as "Construction Ahead" shall be left in place throughout the completion of the project.

The contractor shall be responsible for establishing temporary "No Parking" zones. The zones shall be confined to the immediate work area and appropriate transition zones and shall be limited in duration to the length of time work is performed in that area.

All construction vehicles shall be legally parked. Privately owned vehicles including vehicles owned by the construction crew shall not be parked in the "No Parking" zones.

1.3.2 Encroachment Permits

A road permit will be required for work performed within the right-of-way limits. No construction work shall start until these permits are obtained and provided to the Contractor by the Company. A copy of any approved permits obtained by the Contractor shall be provided to the Company's Project Manager and Inspector before work shall be begin.

Applicable permits shall be obtained by the Company from the appropriate agency: Louisville Metro Public Works, Louisville Metro Parks, Bullitt County Road Department, Oldham County Public Works, Kentucky Department of Highways and / or any other Jurisdictional Authority that governs the location within which work will be conducted for installing water mains in public right-of-way. The Contractor shall coordinate their time schedule for performing this work with the Company's Project Manager in order that the appropriate authority can be notified of the progress of construction. Special attention is directed to the working hours as specified by any of these traffic control departments in their respective permit.

A minimum fourteen (14) day advanced notice of the need for a permit shall be provided to the Company's Project Manager. Copies of the permit(s), along with the approved traffic control plan, shall be on-site, readily available, legible and displayed in construction vehicles used at the project site. The Contractor will be responsible for obtaining appropriate permits for

Joint-Bid Projects (i.e. Kentucky Transportation Cabinet (KTC) Projects, MSD Projects, or Developer Installed Projects, etc.).

The Contractor shall submit a traffic control plan to the Company's Project Manager with the request for the permit. As a minimum, the traffic control plan shall include lanes to be blocked, "No Parking" zones to be created, parking meters to be "bagged", method of controlling traffic, designated work hours, and proposed work schedule. Contractors must use certified traffic control devices and not deviate from the approved Traffic Control Plans unless directed by the Jurisdictional Authority and any such deviation shall be documented.

Unless specifically approved by the Permitting Agency, all roadways (including side roads) shall remain open, with traffic maintained in a safe manner. Outside the designated work hours, all travel lanes shall be temporarily restored and reopened to traffic, and all construction vehicles, equipment, and personnel removed from the roadway.

1.3.3 Crossing of Roads

With respect to all roadways: water main crossings, fire hydrant crossings, and/or service crossings shall be bored, jacked, or tunneled as specified within these Contract Documents. Any alteration(s) to the above shall require written approval from both the Company's Project Manager and the Jurisdictional Authority prior to the work being performed. Any additions and/or deletions in roadway bores/jacks/tunnels from those included in the project's scope of work shall require compensation adjustment in accordance with the BIDDER'S PROPOSAL form's Supplementary Unit Prices (if applicable) or with CHANGES IN THE WORK, in the TERMS AND CONDITIONS (if said Supplementary Unit Prices are not applicable).

1.3.4 Parking Meter Permit

The Contractor shall arrange for and pay for a permit as required by Louisville Metro Public Works Ordinance Title VII Traffic Code: Chapter 72: Parking Regulations for the bagging of all parking meters affected by the construction. Issuance and enforcement are administered by the Louisville Metro Public Works. Information may be obtained at the following address. All costs shall be included in the Contractor's base bid.

Louisville Metro Public Works
444 South 5th Street
Louisville, Kentucky 40202

1.3.5 Soil Erosion and Sediment Control Permit

The Contractor shall abide by and shall arrange for and pay for any and all permits involving the Kentucky Division of Water regulations pertaining to erosion and sediment control requirements as administered by the Louisville and Jefferson County Metropolitan Sewer District (MSD) or other jurisdictional authority where required. The Contractor shall comply with the applicable provisions of KRS Chapters 220 and 224 of the State Water Pollution Control Laws and other applicable statutes relating to the prevention and/or abatement of water pollution.

Projects involving disturbed areas of more than one (1) acre shall require the Contractor to submit a "Notice of Intent" Letter to the Kentucky Division of Water, as well as an "Erosion and Sediment Control" plan submitted to MSD for MSD's approval where required.

In any event, regardless of the size of the project, the Contractor shall: exercise every reasonable precaution at all times to prevent water pollution by the erosion and deposition of sediment in streams, lakes, and reservoirs; conduct and schedule operations so as to avoid or minimize the muddying or siltation of areas adjacent to the construction site including streets, storm sewers, vacant lots, etc.; and not leave partially completed areas of work in a manner that will contribute to erosion during the period in which work is suspended.

For each stream crossing (a "stream" being defined as a so-called blue-line stream, either solid or broken, as shown on the United States Geological Survey (USGS) quadrangle map), the Company shall apply for a construction permit, or for an exemption thereto, from the Kentucky Division of Water, if applicable, (see Section 1.3.6). In any event, the Contractor shall: utilize adequate and environmentally-responsible construction practices, placing silt control prior to the start of construction and maintaining it until vegetation has been established; revegetate all disturbed areas upon completion of construction; maintain at least three and one-half feet (3 ½') of cover over the top of pipe with respect to the stream bed elevation; and obtain approval from MSD where required, prior to the start of construction, of an "Erosion and Sediment Control" plan.

Louisville Water hereby gives notice to Contractors (and, Contractors are directed to provide notice to their employees, agents, assigns and Contractor's subcontractors, their employees, agents and assigns, and Contractor's suppliers, their employees, agents and assigns on the project site) that Louisville Water holds an Erosion Prevention Sediment Control Plan General Permit issued by MSD, pursuant to the Louisville/Jefferson County Metro Government Code of Ordinance No. 186, Series 2007 (amending Jefferson County Ordinance Chapter 159), Erosion Prevention

and Sediment Control, and, that certain activities require additional Individual Site Disturbance Permits, also issued by MSD, pursuant to the Louisville/Jefferson County Metro Government Code of Ordinance No. 186, Series 2007, Erosion Prevention and Sediment Control.

Pursuant to the requirements of that General Permit where required and any required individual site disturbance permits, Louisville Water further gives notice to Contractors of the County's Erosion Prevention and Sediment Control Ordinance. Louisville Water hereby expressly requires Contractors, their employees, agents, and assigns and Contractor's subcontractors, their employees, agents and assigns, and Contractor's suppliers, their employees, agents and assigns on the project site to comply with the provisions of that Ordinance and all permits, General and Individual, as part of the required compliance with "any federal, state or local government statute, ordinance, regulation and law which controls or limits in any way the actions of persons working on the project and which affects the purchase, installation, or disposition of any materials related to the project" —set out in **CONTRACTOR'S RESPONSIBILITIES**, in the **TERMS AND CONDITIONS**.

The Contractor's responsibility for compliance with the Erosion Prevention and Sediment Control Ordinance is in addition to those set out in **CONTRACTOR'S RESPONSIBILITIES**, in the **TERMS AND CONDITIONS**.

See Standard Drawing: 4501 in Appendix of Drawings.

1.3.6 Stream – Wetland Crossing Permit

The Kentucky Division of Water (KDOW) requires a General Water Quality Certification (W.Q.C.) Permit #12 for the crossing of streams or wetlands. It is not necessary to apply for an individual General Water Quality Certification (W.Q.C.) Permit #12 unless the stream is classified as an Outstanding, Exceptional, or Cold Water stream (Special Waters) by the KDOW. Listings of streams with these classifications can be found on KDOW's webpage: eec.ky.gov

For subfluvial (streams and rivers) pipe crossings, a flood plain construction permit will not be required pursuant to KRS 151.250 if the following requirements of 401 KAR 4:050 Section 2 are met:

- No material shall be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc. during construction of pipe crossings.
- Crossing trenches shall be backfilled as closely as possible to the

original contour.

- All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain.
- For erodible channels, there must be at least three and one half (3.5) feet of backfill on top of all pipe or conduit (casing) points in the crossing.
- For non-erodible channels, pipes or conduits (casing) in the crossing shall be encased on all sides by at least six (6) inches of concrete with all pipe or conduit (casing) points in the crossing at least six (6) inches below the original contour of the channel.

For subfluvial (streams and rivers) pipe crossings greater than fifteen (15) feet in width:

- The water main shall be of special construction, having flexible, restrained, or welded watertight joints.
- Valves shall be provided at both ends of the water crossings so that the section can be isolated for testing or repair.
- Valves shall be easily accessible, not subject to flooding, and if closest to the supply source, shall have a meter vault installed with permanent taps made on each side of the valve to allow insertion of a small meter to determine leakage and for sampling purposes.

See Standard Drawings: 1608 & 4501 in Appendix of Drawings.

1.4 Project Drawings and Specifications

1.4.1 General

The Contractor shall make available a set of stamped plans and specifications at the job site at all times, including all addendums, revisions, changes, etc.

1.4.2 Combined Specification

This specification discusses the installation of ductile iron pipe, PVC (polyvinyl chloride) pipe, ductile iron appurtenances, and other project specified piping and materials.

The type of pipe to be installed is specified on the stamped plans or in the **SUPPLEMENTARY SPECIFICATIONS.**

1.5 Daily Materials Installed Form

The Contractor shall maintain the Daily Materials Installed forms supplied by the Company as a record of the pipe, fittings, and valves installed each day, and shall provide same to the Company's Inspector daily. Pipeline materials shall be listed on the form in the same sequence as installed.

1.6 Video Recording

Prior to the start of construction, the Contractor shall provide one (1) original walking, narrative continuous DVD video, or other acceptable media approved by the Company's Project Manager representative of the complete project area. The video should include narration of the video footage, verbal descriptions of the locations shown, and at a speed which clearly shows the condition of all areas which could be affected by project construction.

2. CONDUCT OF WORK

2.1 Safety

Wherever necessary, to prevent caving during the excavating of sand, gravel, sandy soil, or other unstable material, the trench shall be adequately sheeted, braced, and drained. The trench shall be maintained in accordance with OSHA regulations so that workers may work thereon safely and efficiently, and vehicular and pedestrian traffic, livestock, and animals are protected at the worksite. It is essential that trench pumps discharge into natural drainage channels or drain toward storm drains in compliance with regulatory agency requirements.

Any excavated materials to be stockpiled, shall be piled in a manner that will not endanger personnel, property, adjacent properties and pedestrians, and will not obstruct driveways, sidewalks, or thoroughfares. Drainage lines shall not be obstructed.

With respect the entry of and/or working within confined spaces, the Contractor shall abide by the KOSHA Standards referenced by 803 KAR 2:300 thru 2:320 for General Industry and 803 KAR 2:240 thru 2:423 for Construction Standards, plus any and all additional related regulations required by the Commonwealth of Kentucky.

For questions or concerns relating to this matter, the Contractor shall contact the KOSHA-Kentucky Occupational Safety & Health Program, (phone (502) 564-3070).

2.2 Jobsite / Work Area Cleanliness

The Contractor shall routinely and regularly remove all dirt and rubbish resulting from its operations and shall keep the jobsite or work area neat and tidy.

When its work is complete, it shall at once remove from the premises all tools and machinery belonging to the Contractor and all rubbish in connection with the work and render the jobsite or work area clean and free from all obstructions, delivering the work at completion whole, clean, tight, and ready for use, with the grounds in a neat and presentable condition.

2.3 Cooperation

The Contractor shall cooperate with local governing agencies, Kentucky Department of Highways, Louisville Water, other utilities, and other contractors to cause as little interference as possible, to avoid inconvenience and delay, and to facilitate prompt completion of the work.

The Contractor shall coordinate and schedule with the Company's Inspector valving off mains for each connection or change in existing mains, and will conduct the work to cause the shortest possible interruption of service.

3. SITE WORK

3.1 Utilities

3.1.1 General

The Company has endeavored to locate sub-surface obstructions from available records, and such structures are shown on the project drawings. The Company does not guarantee the accuracy of the information there shown, although it has undertaken to present available data. The project drawings do not show the size or location of services.

Wherever the Contractor deems it necessary to determine the exact location of existing pipe, valve, or other underground structures, the Contractor may make any examinations that it may determine desirable in advance of the work and no added compensation will be paid. Only in the event that the Company's Project Manager by written order directs the Contractor to make additional exploration and excavation will extra compensation be allowed.

The Contractor's attention is directed to the Kentucky 811 (811 or 1-800-752-6007), which has been established to provide accurate locations of below-ground utilities. The Contractor shall notify Kentucky 811 a minimum of two (2) business days in advance of any construction on this

project. Additional information for Kentucky 811 can be found at www.kentucky811.org.

3.1.2 Utilities in Conflict with the Pipeline

In excavating trenches and installing pipe, where any existing utilities (including water pipe, sewer pipes, inlets and drains, gas pipes, electric lines and conduits, telephone lines and conduits, cable television lines and conduits, communication – fiber optic lines and conduits, service connections from these utilities, trolley tracks used for cathodic protection, traffic signal loop detector system or street light system), cross the trench, they shall be protected, supported, and maintained in service and restored to the condition in which they were found, all at no additional cost to the Company.

Where because of location or grade, such utilities cannot be replaced to occupy their original location, they shall be changed at no additional cost to the Company and as directed by the Company's Project Manager and utility owner to accomplish their original purpose with adequate provision for drainage over or under the pipe as circumstances require.

Where any utility facility, including service connections, is touched or endangered by the work, the utility's management shall be notified by the Contractor, and the Contractor shall cooperate with the utility and pay the cost of protection and repair if damaged.

The Contractor shall protect all abandoned trolley tracks. If abandoned trolley tracks are damaged, the Contractor shall contact Pipeline Integrity Group of Louisville Gas and Electric Company at (502) 627-4427 prior to the repair of any cut or damaged rail. Repair, if required, shall be as directed by Louisville Gas and Electric Company.

3.1.3 Utilities Parallel to the Pipeline

Where utilities exist parallel to the water main and at a location which will interfere with its installation, they shall be handled as follows:

A. The affected utility shall be notified at least five days in advance, if possible, of the time necessary to do the work. The cost of temporary hook-up and any charges from the utility will be paid by the Contractor unless previously authorized by The Company.

B. Gas, sewers, telephone, or electric facilities shall be gently uncovered, and personnel from the pertinent utility must remove its facility after accomplishing a temporary hook-up to prevent loss of service. After the water main has been placed, the utility line will be reinstalled near its

original location and grade by the utility personnel, and the Contractor will complete the necessary backfill.

3.1.4 Water / Sewer Main Separation

Water mains shall be installed in accordance with Kentucky Division of Water regulations and Recommended Standards for Water Works (Ten States Standards).

Water mains shall be installed at a minimum of ten feet (10') horizontally from any existing or proposed non-storm sewer main or non-storm sewer manhole; measured from the outside diameters. ("Non-storm sewer" is defined as sanitary sewer, combined sewer, septic tank, or subsoil treatment system.)

When crossing over or under a non-storm sewer main, the water main shall maintain one and one-half feet (1.5') vertical separation with one (1) full length of the water pipe located so that both joints of the water pipe will be as far from the non-storm sewer as possible. Special structural support for the non-storm sewer and water pipes may be required.

When ten feet (10') of horizontal separation or one and one-half feet (1.5') of vertical separation cannot be maintained, the Company's Project Manager must be notified for resolution. There shall be no deviation from the above ten feet (10') horizontal and one and one-half feet (1.5') vertical separation requirements when water pipes are crossing non-storm sewer force mains. Only in the event that the Company's Project Manager directs the Contractor by written order may changes be made to these minimum separations.

3.1.5 Water Service Line Depth and Service / Non-Storm Sewer Separation

Water service lines shall be installed at the standard depth of forty-two inches (42"). Service lines crossing over or under a non-storm sewer shall maintain a minimum vertical separation of one and one-half feet (1.5').

See Standard Drawing: 1000 in Appendix of Drawings.

3.2 Laying Out the Work

The location of the work shall be defined by lines and elevations furnished by the Company's Project Manager on project drawings or specifications. The Contractor shall layout their own work, lines, measurements, bench marks, levels and grades, right-of-way and easement lines. The Contractor shall contact the Company's Project Manager prior to entering a property

on which the pipeline is being installed in an easement to ensure that the easement has been obtained.

Unless otherwise directed by the Company's Inspector or Project Manager, the Contractor shall complete each block of water main installation, or in the absence of intersecting streets, every 500 feet of water main installation in urban areas, every 1,000 feet of water main installation in suburban / residential areas, or 1,500 feet in rural areas before proceeding. This includes chlorination, pressure testing, service work, and permanent restoration of all areas affected by the construction.

The pipeline shall be installed throughout the public right-of-way or in easements as indicated on the project drawings. Generally, all work must be confined to the public right-of-way or easement provided; however, the Contractor may make arrangements for more operating room at its own expense and responsibility.

The Contractor shall obtain written permission for use of private property by the property owner and furnish an affidavit to the Company's Project Manager that proper arrangements are made prior to occupation of the property. Otherwise, the Contractor shall conduct its operations in a manner that will not interfere with adjacent property owners.

3.3 Stakes

The Contractor shall furnish and set all stakes necessary in laying out the location of lines and grades, shall protect all stakes by suitable guard stakes, and shall be responsible for maintenance of all stakes after being set.

3.4 Temporary Contractor Facilities

3.4.1 Power

The Contractor shall arrange and pay for all power required for construction purposes.

3.4.2 Heat and Enclosures

The Contractor shall furnish at its own expense, all temporary heat and/or enclosures that may be deemed necessary.

3.4.3 Light

The Contractor shall provide and pay for temporary electric light necessary for the execution of the work. This will include all necessary wiring, fixtures, and electric bulbs. Torches or other sources of light which can

cause damage by fire or smoke shall not be used.

3.4.4 Water

The Contractor may purchase water from the Company for use in construction operations. The Contractor shall include the cost of Temporary Water Service, and cost of water purchased, in the base bid.

3.4.4.1 Temporary Water Service

Water used by the Contractor or Company for disinfection, flushing, pressure testing, and leakage testing will be supplied by the Company at no cost. If water is needed for other purposes, the Contractor may obtain a temporary water service meter as outlined below. The Contractor will be responsible for fees and usage charges for the temporary water service.

To obtain a temporary water service meter, an application, with deposit, must be completed in Metering Services offices at 4801 Allmond Avenue between the hours 9:00am to 3:00pm Monday through Friday. Applications can be obtained in Metering Services or at LouisvilleWater.com.

Routine questions regarding a temporary service meter or billing concerns may be directed to our Call Center, (502) 583-6610.

Use of temporary services must comply with all Louisville Water Service Rules and Regulations found at LouisvilleWater.com. The Company prohibits the unauthorized use of fire hydrants and will work with law enforcement officials to pursue each incident to the extent allowed by law.

The Contractor is responsible to protect the fire hydrant temporary service meter and fire hydrant wrenches from loss and theft. Fire hydrant temporary service meters must be dismantled when not in use to protect from theft or freezing weather. Fire hydrant wrenches shall never be left unattended on a fire hydrant.

Fire Hydrants must be turned on completely to prevent flooding through the hydrant's weep holes. Flow shall be regulated by the temporary meter assembly valve. The Contractor must notify the Louisville Water Radio Room (569-3600, ext. 2700 or 2701) of all hydrants flowed between November 1 and March 31, or as freezing conditions dictate, so the hydrant can be winterized after use to prevent freezing.

Some fire hydrants have a locking device attached to prevent unauthorized use. The Contractor shall notify the Company's Project Manager or Inspector 48 hours in advance of the need to use such a fire hydrant, so the lock can be removed by Company personnel. The Contractor shall immediately notify the Company's Project Manager or Company

Inspector when the fire hydrant is no longer needed so the lock can be re-installed.

It is the responsibility of the Contractor to properly protect the fire hydrant temporary service meter, and to ensure that proper replacement techniques be applied, including placement of gasket to prevent water loss upstream of the meter.

3.4.4.2 Water Uses Excluded in Temporary Water Service

Any water used from a fire hydrant or blow off shall be metered or estimated. In some instances, the Company Inspector may approve non-metered water use (e.g. filling the main, flushing of hyper-chlorinated or potable water where practical.)

See Standard Drawing: 1601 in Appendix of Drawings.

3.4.5 Temporary Toilets

The Contractor shall provide in the vicinity of the work at locations satisfactory to the Company, and maintain in a sanitary condition, suitable temporary toilets for the use of the workers and Company personnel.

Upon completion of the work, the temporary toilets shall be removed, and the premises left in a sanitary condition. The temporary toilets shall be satisfactory to the governing jurisdiction's Board of Health.

3.4.6 Temporary Fencing

The Contractor shall supply and install temporary fencing when necessary to control livestock or property owner's animals requiring containment. The Contractor shall make arrangements with the property owner for removal / containment of the animals during any removal of existing fencing and placement of the temporary fencing.

3.4.7 Contractor Communications

The Contractor shall supply a 24 hour emergency contact number to allow direct communication from the project site or after working hours with the Company's Project Manager or Company Inspector.

4. PIPELINE MATERIALS

4.1 Pipe and Fittings

4.1.1 Pipe and Fittings Furnished by the Company

Pipe and fittings to be furnished by the Company shall be as specified in the Contract Documents.

4.1.2 Pipe and Fittings Furnished by the Contractor

Materials provided for “Furnish and Install” projects shall be as specified in the Contract Documents.

The Company’s Inspector shall verify that all materials meet project specifications prior to installation.

The Contractor retains ownership of all Contractor furnished materials under “Furnish and Install” contracts until the project is completed and accepted by the Company. Materials not installed cannot be returned to the Company.

4.2 Furnished to the Contractor

4.2.1 Materials

The Contractor shall requisition and haul, on appropriate vehicles, all Company supplied materials from the Company’s warehouse to the points of their respective installation.

The Contractor shall protect pipe and fittings to avoid vehicle exhaust, debris, and damage during transit from the Company’s warehouse to being installed.

As referenced in the current edition of the Company's "Process for Job Site Delivery of Line Pipe" Document, a copy of which is available from the Company’s Project Manager, pipe delivery from the pipe manufacturer to the jobsite is available if the Contractor makes arrangements as stated in said Document.

4.2.2 Requisition and Return of Materials

The Contractor shall requisition and return materials per current warehouse procedures, and shall account for or promptly return all materials so requisitioned.

Any unused materials shall be returned within five (5) working days after the date of substantial completion of the work as specified by the Company's Inspector. The cost of any unused materials not returned to the warehouse by this date shall be billed to the Contractor.

Below is a list of guidelines to draw or return materials from the Company's Allmond Avenue warehouse:

- A. Call (502) 569-3633 or email warehouse@lwcky.com to make an appointment with the Warehouse. Appointments are scheduled for 30 minutes in length. Email or fax a copy of the materials list to the warehouse at 569-0812.
- B. Appointments, including standing appointments, will be scheduled on a first-come first-served basis. Appointments are not required for emergency situations but must be approved by the Company's Project Manager.
- C. Issues and returns are considered equal in regard to scheduling.
- D. Warehouse office hours are 7:30 a.m. - 4:00 p.m., Monday thru Friday (except Company's holidays). Appointments are scheduled from 8:00 a.m. - 2:00 p.m.
- E. All returned material must be in the same condition as it was when issued - clean and with all accessories. Returns of dirty, corroded, and/or rusted material, and/or fittings missing accessories, or otherwise damaged shall not be accepted.
- F. The Contractor shall not return cut pieces of pipe to the Company's Warehouse. Contractors shall make best use of pipe, minimize cut pieces of pipe and shall not install more than two (2) pieces of cut pipe adjacent in a straight run. Only whole – uncut pipe may be returned to the Company's Warehouse and it must be clean and in good condition.

4.2.3 Loading and Unloading Procedures

Refer to **PIPE AND PIPE APPURTENANCES FURNISHED BY THE COMPANY**, in the **TERMS AND CONDITIONS**.

4.2.4 Pressure Test Pump

For pressure and leakage testing, the Company shall issue a test pump and meter kit to the Contractor. Contractors may furnish their own test pump if it is equipped with a quick-connect coupling to allow placement of the Company Inspector's pressure gauge and the test pump meter is approved

by the Company's Inspector.

The Contractor is to: notify the Gate Shop (502) 569-3600, ext. 2766, at the Warehouse at least two days in advance of the day of intended use; pick up the test pump kit between the hours to 7:30 a.m. and 3:30 p.m.; have the test pump kit for 48 hours at no charge (Saturdays and Sundays are excluded from the allowed time frame); and return the test pump kit to the Gate Shop within 48 hours of pick-up. If outstanding for more than two days, beginning on the third day, a rental fee will be charged to the Contractor; this fee shall be waived only if the Company's Inspector notifies the Warehouse Office or the Gate Shop at the Warehouse of special circumstances.

The Contractor shall be held responsible for the test pump and all test kit contents and shall be invoiced for all cleanup and/or repair costs. The Company does not loan or lease hoses and/or tools, including tapping machines.

4.3 Storage of PVC Pipe (Polyvinyl Chloride)

When storing PVC (polyvinyl chloride) pipe, caution should be exercised to avoid compression, damage, or deformation to the pipe, including the bell ends. Ensure that the weight of the upper units does not cause deformation to the lower units. All pipe shall be placed on wooden skids or other suitable material, be stored in accordance with AWWA's M23 Manual and be stored in a manner to prevent deformation and dirt, debris, foreign objects, or any other substance from entering the pipe.

5. EXCAVATION

5.1 Rock Excavation

5.1.1 Definition of Rock

Rock, for the purpose of this contract, shall mean boulders, pieces of concrete or masonry of sufficient size, and solid ledge rock (usually limestone) which, in the opinion of the Company's Project Manager, requires mechanical removal or drilling and blasting as approved by the Company's Project Manager. All rock shall be Unclassified. Unclassified rock shall mean any rock which has to be removed for construction and the cost of removal shall be included in the base bid price.

5.1.2 Trench Dimensions

Trench rock excavation shall be based on a trench width of eighteen inches (18") wider than the outside diameter of the pipe, equally spaced at nine

inches (9") on each side of the pipe and a trench depth of six inches (6") below the outside bottom of the pipe.

5.2 Rock Soundings

The Company does not know or pretend to know, nor does it undertake to state, the nature of all materials which will be necessary to excavate in order to construct the work contemplated herein. The Contractor is advised to perform rock soundings or subsurface investigations where feasible on all projects prior to bid. If rock sounding information is provided on the plans, the Contractor is advised that the rock sounding location is approximate and that the location and quality of rock can be highly variable and if the Contractor uses such data he/she does so at their own risk. The Contractor shall assume all risks arising from, or out of, the nature of all forms of materials necessary to be excavated, except as otherwise specified.

It shall be distinctly understood that reference to rock, earth, or any other material on the Plans or in the Contract, whether in numbers, words, letters, or lines, is not to be taken as a complete indication of classified rock excavation or the quantity or quality of either rock, earth, or any other material involved. The Contractor is advised to draw their own conclusions regarding the actual conditions to be encountered. The Company does not provide a guarantee as to the accuracy of the data and no claim will be considered for additional compensation when the materials encountered are not in accordance with the classification shown.

5.3 Rock Blasting Requirements

All blasting for excavations shall be conducted by a blaster licensed in the State of Kentucky in compliance with provisions of KRS 351 and KAR 803 and 805. Blasting will be permitted only after securing the approval of the Company's Project Manager and only when proper precautions are taken for the protection of persons or property. Any damage caused by blasting, including damaged or raised pavement, shall be repaired by the Contractor at their expense.

The Contractor shall abide by all Federal, State, and Local laws and regulations regarding the storage and use of blasting materials (KRS 351 and KAR 803 and 805). The hours of blasting will be fixed by the Company's Project Manager and adhere to state and federal guidelines. A blasting log must be kept, and a copy furnished to the Company.

5.4 Excavation in Streets and Parking Areas

5.4.1 Procedure

Where a specific road permit exists, it shall take precedence; otherwise, the following language shall apply.

Wherever the excavation is in paving, whether in the streets or in parking lots, the Contractor shall so conduct their operations that at least one lane of traffic is kept open at all times. Where the excavation is performed in a traveled lane, the trench shall be made safe during non-working hours by installing backfill and temporary bituminous pavement, backfill and concrete subbase, or plates (see "Plating" Section 5.4.3).

Where the excavation is performed in an intersection, the work shall be completed in one work day, including backfilling and temporary bituminous pavement. Temporary paving restoration shall be adequately maintained until permanent pavement is placed.

Traffic warning signs shall be placed and maintained on the streets being crossed, in accordance with the applicable agency as described in "Traffic Control" (Section 1.3.1).

5.4.2 Twelve-Inch (12") Cutback Requirement

The Contractor shall make two pairs of straight paving cuts of uniform width: the first pair being along the edges of the anticipated trench location, to be performed prior to excavating the pipe trench; and the second pair being along the anticipated twelve-inch (12") cutback locations, to be performed upon completion of trench backfill placement up to the subbase bottom elevation and prior to subbase placement.

Saw cuts shall be of sufficient penetration of the pavement base to ensure straight edges during pavement removal. Irregular edges shall be sawcut to provide straight edges at a uniform width.

Twelve-Inch (12") Cutback Requirement is not required when backfilling the trench with flowable fill (Controlled Low Strength Cementitious Material).

5.4.3 Plating

5.4.3.1 General

Recessed and surface mounted plates shall have a minimum thickness of one inch (1") and shall be placed on a minimum bearing area of one foot of pavement bordering the perimeter of the excavation.

All plates, whether or not in a traveled lane, are to have 45-degree beveled edges along the entire perimeter. All plates must have readily identifiable markings to reflect Contractor ownership.

If plates are unable to be recessed and must be pinned due to other utility encumbrances, the appropriate Road Maintenance Agency or property owner must be notified immediately.

5.4.3.2 Traveled Lanes

In traveled lanes, the Contractor shall provide plates recessed flush with the pavement for any excavation and trenches must be backfilled to subbase prior to placing plates. Any lane that is open to the traffic at any time during the day is defined as a traveled lane.

5.4.3.3 Non-Traveled Lanes

In non-traveled lanes, the Contractor shall also provide recessed plates where required by the Company's Project Manager and as described in the **SUPPLEMENTARY SPECIFICATIONS**. Otherwise, for non-traveled lanes and parking lots, surface mounted plates, properly secured to pavement, shall be provided, with the exception that all plates are to be recessed from November 15th thru March 31st, so as to minimize the potential hazards to snow removal vehicles, or as specified by the permitting authority.

See Standard Drawing: 4000 and 4100 in Appendix of Drawings.

5.5 Trenching

5.5.1 General

The Contractor shall make all excavations for pipe, blow-off connections, valves and vaults, etc. which may be required for this project. All excavations shall be backfilled or plated overnight with open pipe ends plugged or capped.

5.5.2 Alignment and Grade

The trench shall be excavated to the alignment and depth required and only so far in advance of pipe installation as the Company's Inspector shall permit. All pipe shall be installed and maintained to the lines and grades shown on the project drawings.

5.5.3 Trench Width

The trench width shall be as narrow as practicable to permit the pipe to be installed and jointed properly with a minimum of nine inches (9") of separation between outside of the pipe and each sidewall of the trench. Trench width must allow for the backfill to be placed and compacted around the pipe. Vertical trench sides are desired where the nature of the excavated material and depth of trench will permit.

A trench width of eighteen inches (18") plus the outside pipe diameter shall be the pay width for any items of work for which compensation is made where trench width is a factor in computing the value of work done.

5.5.4 Trench Depth

The pipe trench shall be excavated to such depth as to provide for six inches (6") of depth under and a minimum forty-two inches (42") of cover over the outside of the pipe barrel. Unless otherwise specified, the trench shall have a flat bottom conforming to this grade. Any pipe installed with more than fifty-four inches (54") or less than forty-two inches (42") of cover must have written approval from the Company's Project Manager.

Any part of the trench excavated below grade (grade being six inches (6") under the pipe) shall be backfilled to grade with the same backfill material used to bed the pipe or other material approved by the Company's Project Manager, and compacted to ninety percent of Modified Proctor as required in "BACKFILLING PROCEDURES AND TAMPING" (Section 7).

Unstable soil material shall be excavated from the trench, and the trench backfilled and compacted as described above.

Backfill greater than a depth of forty-two inches 42" shall be provided where indicated on the project drawings with no additional compensation.

The pipe trench shall not be excavated to exceed forty-eight inches (48") of cover over the outside of the pipe barrel under normal conditions unless indicated on the project drawings.

In locations where pipe is installed on a sloped surface the minimum depth of cover of forty-two inches (42") must be maintained at all points along the pipe.

Variations from these required depths will be allowed only on written authority from the Company's Project Manager.

5.5.5 Minimum Clearances

Boulders, large stones, and rock (including shale) shall be removed to provide a clearance of at least six inches (6") below the barrel of the pipe, valves, or fittings and to provide a clear width of at least nine inches (9") on each side of all pipe and appurtenances.

Bell holes of ample dimension shall be dug to permit jointing to be made properly and to ensure that the pipe is evenly supported throughout in length rather than on bells or couplings.

5.5.6 Contaminated Soil

In the event the Contractor suspects encountering contaminated soil (i.e., soils containing asbestos, PCBs, petroleum products, hazardous waste, radioactive material, and/or any other substance that presents a potential danger to persons or property exposed thereto), the Contractor shall take the following steps:

- Immediately secure the work site to prevent access by unauthorized personnel;
- Notify the Kentucky Department for Environmental Protection, if reportable, (reportable is when an actual spill or release of a hazardous material occurs or when there appears to be a threat of severe environmental harm), at (502) 564-0323;
- Immediately notify "Emergency Response" at 911;
- Immediately stop all work in the vicinity of the contaminated soil, and notify the Company's Inspector, Project Manager, and Safety Representative.
- Follow the instructions from the Kentucky Department for Environmental Protection for disposal of excavated soils which are contaminated.
- Water lines installed or replaced in areas of organic contamination or in areas within 200 feet of underground or petroleum storage tanks or petroleum pipelines require ductile iron or other non-permeable materials and shall be used in all portions of the water line installation or replacement as approved by the Company's Project Manager. These particular water lines shall also be installed with nitrile gaskets or other petroleum resistant gasket as approved by the Company's Project Manager.

- Resume work only after receiving approval by the Company's Project Manager.

5.5.7 Preservation of Landscape

See also "RESTORATION" (Section 11).

Trees and shrubs shown on the project drawings identified for protection are to be protected from any damage both above and below ground, and the property owner is to receive full remuneration for any damage. Trees at other locations shall not be damaged or removed without explicit instructions from the Company's Project Manager and owner or responsible agency. Any limbs damaged during construction shall be trimmed and pruned to the approval of the Company's Inspector.

The project drawings may call for certain shrubs and trees in private roadways or easements to be transplanted until operations are completed and replaced in their original location or replaced with new stock.

5.5.8 Preservation of Historical Construction Materials

When historical construction materials (such as cobblestones, large brick, granite blocks, limestone, or other large stone building blocks used in the course of pavement, curbs, and sidewalks) are encountered in public streets or alleys, they shall be replaced with like material. The Contractor may request a waiver when this is not possible from the Company's Project Manager for approval. Brick masonry pavers that cannot be incorporated back into the work shall be palletized and delivered to Louisville Metro Public Works for preservation and maintenance of existing brick streets and alleys – See Section 7.02 M of the latest edition of Louisville Metro Public Works & Assets' Right-Of-Way Guide & Utility Policy.

5.5.9 Preservation of Boundary Monuments

Contractors shall be responsible for the location and protection of any boundary monuments locating property lines, property corners or right-of-way lines within project limits. If any monuments are removed or disturbed during construction, the Contractor will be responsible for replacement of the monuments by a Professional Land Surveyor of the State of Kentucky.

5.5.10 Archaeological

Contractors shall immediately stop work, if during the execution of work; they encounter any archaeological artifacts, skeletal remains, abandoned cemeteries or burial grounds within the work area and immediately notify the Company's Project Manager or Inspector.

6. INSTALLATION

6.1 Handling Pipe and Appurtenances

6.1.1 General

Proper equipment, tools, and facilities satisfactory to the Company's Project Manager shall be provided and used by the Contractor for the safe and convenient progression of the work. Slings used in handling the pipe shall be made of non-abrasive materials such as nylon. Chains or any sharp abrasive material shall not be used to lift or move pipe. Pipe fittings, valves, and other accessories shall at all times be handled with care to avoid damage.

The method of handling, hauling, and placing pipe in the trench shall be such that it will not damage the ductile iron pipe and its coating or polyethylene wrap or the PVC (polyvinyl chloride) pipe, and shall be done in accordance with the latest edition of AWWA's M23 & M41 manuals. The Contractor shall pay to replace all pipe and/or appurtenances that are damaged.

In loading and unloading, pipe shall be lifted in such manner as to avoid shock. Under no circumstances shall the pipe be dropped. Forklifts' forks or other tools and equipment shall not be inserted into the barrels of pipe, valves or other fittings to lift or move them.

6.1.2 PVC Pipe (Polyvinyl Chloride)

When handling PVC (polyvinyl chloride) pipe, the Contractor shall avoid abrasion damage and gouging or cutting by metal surfaces or rocks, and any stressing of bell joints and damage of bevel ends.

Avoid severe impact, particularly in subfreezing temperatures. In subfreezing temperatures, caution is advised in handling to prevent impact damage.

6.2 Installing Pipe and Appurtenances

6.2.1 General

All pipe installation shall be done under the supervision of an experienced superintendent who will be present on the job site during all construction activities.

Full pipe lengths shall be carefully lowered into the trench, individually, installed and backfilled, in such a manner as to prevent damage.

Unless shown otherwise on the project drawings, PVC (polyvinyl chloride) and Ductile Iron pipe joints will be rubber ring gasketed bell end type.

The Contractor shall furnish all equipment and materials necessary to make all joints completely assembled, except as described in "Furnished to the Contractor" (Section 4.2).

All pipe shall require a six inch (6") undercut and a six inch (6") compacted depth layer of backfill to ensure proper bedding for the pipe. These requirements are described in the sections "Trenching" and "BACKFILLING PROCEDURES AND TAMPING" (Sections 5.5 and 7, respectively).

The interior of all pipe, fittings, and other accessories shall be kept free from dirt and foreign material at all times. All pipe shall be clean and kept clean.

The exposed ends of pipe in the trench shall be closed by a water tight plug at all times when pipe installation is not actually in progress. See Section 6.14 "Plugging Ends of Pipe."

6.2.2 PVC Pipe (Polyvinyl Chloride)

All PVC (Polyvinyl Chloride) pipe installation shall be in accordance with AWWA's Manual No. M23 "PVC Pipe - Design and Installation", unless otherwise specified herein.

Wherever either horizontal or vertical curves or angles are shown on the project drawings, or found to be needed, appropriate ductile iron bends shall be used with PVC (Polyvinyl Chloride) pipe.

Under no circumstances will the bending of PVC pipe be allowed.

Backfilling procedures and mechanical tamping of backfill material shall be strictly adhered to as specified in the "BACKFILLING PROCEDURES AND TAMPING" (Section 7) of these specifications.

When installing PVC pipe, joint deflections shall not exceed that of the manufacturer's recommendations.

6.2.3 Ductile Iron Pipe

All ductile iron pipe installation shall be in accordance with the latest editions of AWWA's Standard Specification C600, "AWWA Standard for Installation of Ductile Iron Water Main and Their Appurtenances", and

AWWA’s M41 manual, unless otherwise specified herein.

Wherever either horizontal or vertical curves or angles are shown on the project drawings, or found to be needed, appropriate ductile iron bends shall be used with ductile iron pipe.

When installing ductile iron pipe, joint deflections shall not exceed that of the manufacturer’s recommendations.

Backfilling procedures and mechanical tamping of backfill material shall be strictly adhered to as specified in the "BACKFILLING PROCEDURES AND TAMPING" (Section 7) of these specifications.

Maximum Deflection for Full Length Ductile Iron Pipe @ 3 degrees (Push on Joint Pipe)		
Pipe Size	4" - 20"	
Pipe Length	18 feet	20 feet
Maximum Offset (inches)	15 in.	12 in.
Approx. Radius of Curve Produced by Succession of Joints (feet)	255 ft.	285 ft.

6.3 Boring and Tunneling

When boring is required, the Contractor shall use a boring tool of the proper size to form a tunnel for the purpose of installing the pipe from one excavation to the other without disturbing the surface. Where such methods are used, a plug or suitable closure shall be inserted in the end of the pipe to exclude any earth from the inside of said pipe.

Where it is necessary to cut the paved surfaces to accomplish the above boring beyond the limits of the excavation necessary to make the tap, the cost of making such pavement repairs shall be borne by the Contractor.

When installing main within the dripline of any tree with a diameter of 6 inches or larger, the root system shall be free bored. All tree root systems that require boring shall be free bored a minimum of 20 feet; 10 feet either side of the tree trunk. The bore shall be located a minimum of 4 feet below the ground surface and a minimum of 5 feet from the center of the tree. If the Contractor requests to bore utilizing Horizontal Directional Drilling methods, the Contractor must make the request in writing to the Company’s Project Manager in advance. Regardless of the method selected, the cost of the tree bore shall be considered incidental to the installation of the pipeline,

and no extra compensation will be provided. The Contractor shall be responsible for the survival of the trees disturbed by the bore installation for a period of two (2) years after final contract payment for the project.

Whenever water main is to be installed through casing pipe, the water main shall be ductile iron pipe with restrained joints. Casing runners (spacers) shall be used to prevent damage during installation and to provide long term support. Pipe shall not rest on bells. Casing runners (spacers) shall provide sufficient height between bell joint and casing wall and should be fastened securely to the pipe.

Unless otherwise stated in the **BIDDER'S PROPOSAL** form and/or the **SUPPLEMENTARY SPECIFICATIONS**, there shall be three (3) casing runners (spacers) for each full pipe length, to be placed at the center and 3-foot from each end of each section of pipe. Ends of casing pipes must be grouted or End Seals installed to prevent debris and seepage from entering the casing pipe. The casing pipe shall extend a minimum of five (5) feet beyond the edge of pavement, unless otherwise noted on the project drawings.

Pipe may be installed in the casing using winch-drawn cable or jacking. Exercise care to avoid damage to the pipe, bell joints, interior and exterior coatings and polywrap.

For ease of installation, use a lubricant such as flax soap or drilling mud between casing runners and casing. Do not use petroleum products such as oil or grease.

Any rock encountered in the construction of bore pits and/or receiving pits shall be unclassified.

If voids shall develop or if the excavation is greater than the outside diameter of the casing pipe or tunnel liner by more than approximately one inch (1"), they shall be filled by pressure grouting. In the case where sections of casing pipe are field welded in order to meet the plan requirements, the Contractor shall weld the casing pipe fully around the entire circumference of the casing pipe and make the casing pipe available for weld inspection prior to installation of the water main.

All interior weld beads or slag shall not extend more than 3/32 inch from the interior pipe face.

See Standard Drawing: 1500 in Appendix of Drawings.

6.4 Mechanical and Push-on Joint Assembly

6.4.1 General

All rubber-gasket joints for Ductile Iron pipe shall be made in accordance with the current edition of AWWA’s Standard Specifications C111 "Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings", as recommended by the manufacturer, and as described in the following Sections: 6.4.2; 6.4.3; and 6.4.4.

All rubber-gasket joints for PVC (polyvinyl chloride) pipe shall be made in accordance with the current edition of AWWA’s Standard Specification C900 "Polyvinyl Chloride (PVC) Pressure Pipe, 4-inch Through 12-inch, for Water Distribution", as recommended by the manufacturer, and as described in the following Sections: 6.4.2; 6.4.3; and 6.4.4.

6.4.2 Mechanical Joint

The inside of the bell and the outside spigot end shall be thoroughly cleaned to remove oil, dirt, grit, excess coating, and other foreign matter from the joint, and then painted with a manufacturer’s approved lubricant.

The ductile iron gland shall then be slipped on the spigot end of the pipe with the lip extension of the gland toward the joint. The rubber gasket shall be painted with the lubricant and placed on the spigot end with the thick edge toward the gland. The entire section of pipe shall be pushed forward to seat the spigot end in the bell.

The gasket shall then be pressed into place within the bell with care being taken so that the gasket shall be evenly located around the entire joint.

The ductile iron gland shall then be moved along the pipe into position for bolting, all of the bolts inserted, and the nuts screwed up tightly, with the fingers. Nuts spaced 180 degrees apart shall be tightened alternately, in order to produce an equal pressure on all parts of the gland.

The torque applied for various sizes of bolts shall be as follows, unless otherwise specified by the manufacturer:

<u>Mechanical Joint Bolt Torque Table:</u>	
5/8"	45-60 ft.-lbs
3/4"	75-90 ft.-lbs
1"	100-120 ft.-lbs
1-1/4"	120-150 ft.-lbs

Any mechanical joint restraints or gripper rings shall be retightened to Bolt Torque Table specifications no sooner than thirty (30) minutes after initial tightening, or as directed by the manufacturer.

All bolts installed above ground shall be rechecked for proper torque after placement in the excavation.

6.4.3 Push-on Joint

The inside of the bell and the outside of the spigot end shall be thoroughly cleaned to remove oil, grit, excess coating, and other foreign matter. If placement of the gasket occurs in the field, the circular rubber gasket shall be flexed inward and inserted in the gasket recess of the bell socket. A thin film of gasket lubricant shall be applied to the spigot end of the pipe.

Lubricant shall be applied evenly over the entire surface requiring lubrication, but avoid using an excessive amount. Use only lubricant approved by the pipe manufacturer. Failure to do so may promote bacterial growth or damage to the gaskets or the pipe.

Correct alignment of the pipe is essential for ease of assembly. The spigot end of the pipe shall be entered into the socket with care to keep the joint from contacting the ground.

The PVC (polyvinyl chloride) pipe shall be inserted into the bell or coupling by application of firm and steady pressure by hand or by block assembly until the spigot end slips through the gasket. The spigot end of the pipe is marked by the manufacturer to indicate the correct depth of insertion. Over-insertion (over-belling) of the pipe shall not be permitted and can cause rolled gaskets, split bells, failure of hydrostatic pressure test, and damage to previously assembled joints.

Ductile iron pipe joints shall be completed by forcing the spigot end to the bottom of the socket using a pry bar, backhoe, jack-type tool, or other device recommended by the manufacturer or approved by the Louisville Water Project Manager. When using a backhoe to home a section of pipe, a timber header should be used to protect the pipe from damage.

6.4.4 Field Cut Pipe

Field-cut ductile iron or PVC (polyvinyl chloride) pipe requires a cut perpendicular to the pipe. It is recommended that the pipe be marked around its entire circumference prior to cutting to ensure a perpendicular cut.

The end shall be beveled by using a beveling tool, rasp or grinder as appropriate to assemble the push-on joint. Round-off any sharp edges on

the leading edge of the bevel. Reinstall depth mark using original mark by manufacturer as a guide.

Mechanical Joint Assembly: When field-cut PVC (polyvinyl chloride) pipe is to be inserted into a mechanical joint end, the beveled end shall not be inserted into the MJ end. The above-stated requirements for a square cut, rounding off sharp edges, and establishing a correct-depth marker shall be performed.

6.5 Tie-ins to Existing Mains

The Contractor shall install the necessary pipe and fittings for the connections to the existing mains, as shown on the project drawings, and shall make the connections complete, ready-for-use.

It is imperative that the sequence of work involving an interruption of service be such that all operations be completed and the new pipeline ready to be connected prior to shutting off existing mains that are serving customer connections. Except for filling of the main, tie-ins shall not be accomplished until the main has passed pressure testing and disinfection.

All pipe, fittings and materials installed for tie-ins or taps not exposed to pipeline chlorination / dechlorination shall be disinfected with an adequate chlorine solution.

When tapping a main, the Contractor shall make the tap only after a hydrostatic pressure test of 125 psi is applied for fifteen (15) minutes with no leakage to the tapping sleeve and gate valve assembly. Before cutting an existing main under pressure, the Contractor shall ensure the adjacent existing valve and fittings are sufficiently secure. The Contractor shall be responsible to provide the tapping coupon to the Company's Inspector.

When connections to existing pressurized PVC water mains are to be made with a tapping sleeve and gate valve, the tapping sleeve and gate shall be installed a minimum distance of twenty-four inches (24") from any fitting end or pipe end.

The Contractor shall be responsible for a minimum advance notification of forty-eight (48) hours to the Company's Inspector to make connections to existing mains.

The Contractor shall be responsible to make up to three (3) connection attempts in situations due to circumstances outside of their control such as inoperable valves or unavailable Company assistance.

Subsequently, water mains abandoned in-place shall be capped at all open

ends as shown on the project drawings or as directed by the Company's Project Manager.

In cases where the water main must be put into service as soon as possible, very early strength concrete and mechanical joint restrained glands (gripper glands) can be specified by the Company's Project Manager for thrust restraint.

6.6 Transition of Pipe Materials (Ductile Iron Pipe and PVC Pipe)

All pipe material transitions (locations where ductile iron pipe is connected to PVC pipe, or vice versa) shall be made at a ductile iron fitting (tee, valve, coupler, sleeve, bend, reducer, etc.).

The joining of pipe ends by inserting the spigot to bell of different pipe materials will not be allowed.

6.7 Removal of Asbestos-Cement (AC or Transite) Pipe

Any required cutting or tapping of asbestos-cement pipe shall be performed by qualified Company personnel, or the Contractor as approved by the Company's Project Manager, and shall follow current Company Work Instructions for handling and cutting AC pipe. Any cutting or tapping shall be in compliance with all OSHA requirements. This work shall be coordinated by the Contractor through the Company's Inspector.

6.8 Setting Valves and Fittings

Valves, air valves, blow offs, and drains shall be assembled, and joints made up, both flanged and mechanical joint, as indicated on the project drawings. All valves and all reducers must be anchored by coated and deformed reinforcing bars, as detailed per the Company's Standard Drawing 1400, wrapped around each end of the valve or reducer, and cast in a cast-in-place concrete anchor block under each valve or reducer.

The weight of each valve shall be supported by solid pre-cast concrete bricks. Bricks should not be removed prior to concrete placement and shall not inhibit installation of polywrap. Cast-in-place concrete shall then be poured up to the bottom of the valve. In no instance shall the weight of the valve be supported by the adjacent pipe.

If PVC pipe is used with iron fittings, the weight of each fitting shall be supported by a two feet (2') x two feet (2') width x one foot (1') depth cast-in-place concrete support block; rod anchorage is required at vertical bends which require the placement of the thrust block under the fitting.

The concrete support block shall bear against undisturbed earth, as shall the

other above-mentioned types of concrete blocking. In cases where the water main must be put into service as soon as possible, very early strength concrete and mechanical joint restrained glands (gripper glands) can be specified by the Company's Project Manager for thrust restraint.

See Standard Drawing: 1400 in Appendix of Drawings.

6.9 Polyethylene Wrap for Ductile Iron Pipe and Fittings

Polyethylene wrap shall be installed in accordance with the current edition of AWWA Standard Specification C105 (ANSI A21.5) for American National Standard for Polyethylene Encasement, unless otherwise specified herein.

The Contractor shall cut the polyethylene roll in tubes 2 feet (2') longer than the standard length of pipe. Each tube shall be slipped over the length of ductile iron pipe, with centering to allow a one-foot overlap on each adjacent pipe section. After the lap is made, slack in the tubing shall be taken up for a snug fit, and the overlay shall be secured with polyethylene tape. Each length of ductile iron pipe shall receive two separate polyethylene wraps as described above.

Ductile iron pipe shall not be wrapped for more than 5 days in advance of placement into the trench. Pipe to be wrapped shall include ductile iron and ductile iron restrained-joint pipe and iron fittings. For any pipe that is wrapped prior to installation, Contractor shall use a method to lift and carry the pipe, such as canvas/nylon strapping, that will prevent damage to the wrapping.

Odd shaped appurtenances such as valves, tees, fittings, and other ferrous metal pipeline appurtenances shall be wrapped by using a flat sheet of polyethylene. Wrapping shall be done by placing the sheet under the appurtenances and bringing it up around the item to be wrapped. Seams will be made by bringing the edges together, folding twice, and taping down. Each appurtenance shall receive two separate polyethylene wraps as described above.

Care shall be taken when backfilling to prevent damage to the polyethylene wrapping. Sections of wrapping having cuts, tears, punctures, or other damage shall be repaired or replaced.

PVC (polyvinyl chloride) pipe requires no polyethylene wrap.

AWWA Standards for installing polyethylene wrap and the manufacturers' recommended methods for installing polyethylene wrap can be made available for review by the Company's Project Manager at the request of the Contractor.

See Standard Drawing: 1200 A-C in Appendix of Drawings.

6.10 Installation of Tracing Wire for PVC Pipe

The Contractor shall install tracer wire along with the PVC pipe and it shall be installed directly over the water main. For open trench installation, tracer wire shall be 12 AWG copper clad steel with a minimum of 30 mil blue HDPE or HMWPE insulation. For directional drill, boring, or other trenchless method installation, tracer wire shall be 12 AWG high strength copper clad steel with a minimum of 45 mil blue HDPE or HMWPE insulation. All tracer wire shall be rated for direct burial at 30 volts. The wire shall also be connected to each end of the water main. The tracing wire shall be wrapped once around each copper or ductile iron service line. The wire shall be stripped of insulation and connected or wrapped with each valve, and service line.

At each and every valve: the wire shall be directly connected to one of the valve joint bolts and shall extend upward along the outside of the key tube but inside the round top frame. The wire shall be looped upward along the outside of the key tube to maintain the wire continuity. This wire shall be taped securely to the top of the pipe at the midpoint and bell of each section of pipe.

6.11 Identification Ribbon

The Contractor shall install Identification Ribbon (I.D. Tape) on all PVC, Ductile Iron, and any other direct bury pipe four-inch (4") through twenty-inch (20") in diameter. Under paved or unpaved surfaces, this ribbon shall be installed at approximately eighteen inches (18") below the surface or finished grade and directly over the water main.

6.12 Frames and Covers (Lids)

The Contractor shall set all frames and covers (lids) for air valves, blow-offs, and meter vaults. These frames and covers (lids) shall be set to grade and maintained in the proper position for the duration of the period covered by this contract.

Frames and covers (lids) shall be removed on all discontinued vaults, and surfaces shall be restored in accordance with the appropriate requirements of the sections "BACKFILLING PROCEDURES AND TAMPING" and "RESTORATION" (Sections 7 and 11, respectively). All removed frames and lids shall be returned to the Allmond Avenue warehouse.

6.13 Valve Boxes

Standard valve boxes consisting of key tubes, valve extension rods, and round tops and lids shall be installed on all valves by the Contractor. The box shall be centered on the operating nuts, shall be vertical, shall be set to grade, shall be placed and maintained in the proper position, and shall be free of dirt or other matter for the duration of the period covered by this contract.

Styrofoam collars or polywrap tape may be placed around each valve round top before placement of concrete and in such a manner to allow the valve box to be raised to grade without demolishing the concrete subbase.

Valve extension rods shall be placed on gate valve operating nuts to extend to within two feet (2') and three feet (3') of ground elevation. Valve extension rods may be welded together to reach the appropriate length. Valve extension rods are available at Louisville Water's warehouse if the project is a Company Supplied project.

Round tops and lids on all valves that are to be abandoned shall be removed and returned to the Allmond Avenue warehouse. The key tube shall be filled with concrete in paved areas; with compacted stone in other areas and surfaces restored in accordance with the appropriate requirements of the sections "BACKFILLING PROCEDURES AND TAMPING" and "RESTORATION" (Sections 7 and 11, respectively).

6.14 Plugging Ends of Pipe

When work has stopped at the end of a day, a cap or plug shall be installed in place in the open end of the pipe to maintain a water tight seal. If trench water or debris enters the pipeline or trench, it shall be removed from the pipe and trench before work proceeds. Permanent plugs or caps shall be installed where shown on the project drawings and shall be securely braced as shown on the thrust anchor details included on the detail sheet of the project drawings. Permanent plugs shall not be installed on PVC mains; only mechanical joint caps will be allowed. Plastic tape over pipe ends will only be permitted on non-standard / oversized pipe with approval of the Company's Inspector.

6.15 Thrust Anchors, Counterweights, and Restrained-Joint Hardware

The Contractor shall install concrete thrust anchors or counterweights (3,500 psi concrete) at all bends, reducers, deflection couplings, tees, offsets, gate valves and plugs/caps against undisturbed soil to withstand maximum test pressure. The Contractor shall provide all labor and material to construct the thrust anchors, piers, and counterweights, for all fittings, both horizontal and vertical. These concrete thrust anchors shall have

minimum dimensions as indicated on the thrust anchor schedule shown on the detail sheet in the project drawings.

If field conditions prevent standard concrete thrust anchors placement as shown in project drawings, the Company's Project Manager must approve any modification. Concrete thrust anchors in solid rock trenches may be modified with approval of the Company's Project Manager.

The Company's Inspector may require forming (plywood or steel) in order to properly locate and position concrete thrust anchors. Restrained-joint hardware is not intended to be used in lieu of concrete thrust anchors and counterweights. Such hardware is to be used only when it is necessary to return a water main to service immediately, as when making tie-ins or at the specific instructions of the Company. The Company Inspector may require restrained joint hardware in areas where the water main may be disturbed after installation by other utility crossings or nearby excavation.

Whenever restrained-joint hardware is used to restrain fittings, the Contractor must also pour a concrete thrust block. In no instances, shall restrained-joint hardware alone be accepted as a permanent thrust restraint. Mechanical joint restraining glands (gripper glands) are not to be used on plain end fittings.

Any mechanical joint restraints or gripper glands shall be retightened to Bolt Torque Table specifications no sooner than thirty (30) minutes after initial tightening, or as directed by the manufacturer.

All bolts installed above ground shall be rechecked for proper torque after placement in the excavation.

See Standard Drawing: 1400 in Appendix of Drawings.

7. BACKFILLING PROCEDURES AND TAMPING

7.1 General

In general, trench dimensioning and backfill materials shall be as follows: six inches (6") of vertical clearance with the bottom of the trench, and the subsequent layered placement of pit run sand, DGA or manufactured sand bedding along the bottom of the pipe; nine inches (9") of horizontal clearance with each side of the trench, and the subsequent layered placement of pit run sand, DGA, or manufactured sand backfill along each side of the pipe; the layered placement of pit run sand, DGA, or manufactured sand to the elevation of twelve inches (12") above the crown of the pipe; and, if in a lawn area, the remainder of the backfill to be common (but acceptable) fill, or, if in a paved and/or a to-be-paved area,

the remainder of the backfill to be the layered placement of pit run sand, DGA, manufactured sand, #57 stone or flowable fill up to the bottom elevation of the respective pavement restoration scheme. All bedding and backfill material shall be uniform and continuous for the entire trench excavation limits.

The total depth of cover (i.e., the vertical distance from crown-of-pipe to ground/pavement surface) shall be at least forty-two inches (42”). The cost of applicable backfill material, backfilling, and required tamping shall be covered in the base bid as shown on the **BIDDER'S PROPOSAL** form.

All backfill (except flowable fill) shall be properly compacted by pneumatic, vibratory, or other approved compaction equipment. A backhoe bucket is not an approved compaction device. The compaction effort and lift thicknesses shall be performed in a uniform and consistent manner in accordance with these specifications. The Company reserves the right to conduct compaction testing and observation, and such testing or observation will not relieve the Contractor of any future warranty responsibilities. When instructed by the Company’s Project Manager, the Contractor shall excavate backfilled material to a particular grade for testing. Backfilled areas which do not pass this test shall be excavated and re-compacted until they meet compaction specifications. Areas excavated for testing shall be re-compacted in accordance with this compaction specification. The cost of this work shall be included in the base bid.

Appropriate and sufficient backfill material shall be furnished by the Contractor to replace material deemed unsatisfactory by the Company’s Project Manager or Inspector.

Unsatisfactory material includes unsuitable soil as described in "FINAL BACKFILLING" (Section 7.6) and frozen or exceptionally wet backfill material and may include backfill material excavated for testing purposes or backfill material excavated for failure to meet compaction requirements. See Standard Drawing: 4300 in Appendix of Drawings.

7.2 Acceptable Backfill Materials

7.2.1 Pit Run Sand (Natural Sand)

Pit Run Sand is sand resulting from the natural degradation of rock and shall meet the material and gradation requirements of Section 804 Fine Aggregates of the current edition of the Kentucky Department of Highways “Standard Specifications for Road and Bridge Construction”.

7.2.2 Dense Graded Aggregate (Kentucky DGA or Indiana #73)

Dense Graded Aggregate shall meet the material and gradation requirements of Section 805 Coarse Aggregates of the current edition of the Kentucky Department of Highways “Standard Specifications for Road and Bridge Construction”.

7.2.3 Flowable Fill (Controlled Low Strength Cementitious Material)

Flowable fill, a quick-setting, cementitious, self-compacting, shrinkless fill material, may only be used with the prior written approval of the Company’s Project Manager.

The mix design must be approved prior to placement by the Company’s Project Manager. The 28-day compressive strength of said fill shall not exceed 150 psi, and the minimum strength shall be 25 psi. The mix shall include sand, cement, fly ash with water not included as part of the volume mix. Fly ash shall have a pH value of no less than 7.0 and no greater than 12.5. The pipe shall be enveloped with pit run sand, manufactured sand or dense graded aggregate and backfilled in accordance with “Initial Backfilling” (Section 7.5).

7.2.4 Manufactured Sand (Kentucky 3/8” Manufactured Sand)

Manufactured Sand shall be the material resulting from the crushing and classification by screening, or otherwise, of rock and gravel. Manufactured Sand shall be washed and contain no fine particles and or dust.

The Contractor shall be responsible for all dust control associated with the use of Manufactured Sand. Manufactured Sand shall meet the material and gradation requirements of Section 804.08 Pipe Bedding of the current edition of the Kentucky Department of Highways “Standard Specifications for Road and Bridge Construction”.

7.2.5 Kentucky #57 Stone (or Indiana #8 Stone)

Kentucky #57 Stone shall only be used for creating a firm base in undercut excavations when wet or excessively soft soil conditions are encountered. Any other use shall be approved by the Chief Engineer. Kentucky #57 stone shall not be used as bedding, initial backfilling, or for trench backfill in paved areas. Kentucky #57 Stone shall meet the material and gradation requirements of Section 805 Course Aggregates of the current edition of the Kentucky Department of Highways “Standard Specifications for Road and Bridge Construction”.

7.2.6 Kentucky #3 Stone (or Indiana #2 Stone)

Kentucky #3 Stone shall only be used for Fire Hydrant Drainage Pits. (See Section 9.2 Drainage Pit). Kentucky #3 Stone shall meet the material and gradation requirements of Section 805 Coarse Aggregates of the current edition of the Kentucky Department of Highways "Standard Specifications for Road and Bridge Construction".

7.2.7 By-Product of Trench Rock Excavator

The by-product of trench rock excavator equipment may be acceptable for pipe bedding and/or backfill material if prior written approval is granted by the Company's Project Manager.

The Company's Project Manager must review the material and be assured of the Contractor's ability to compact the material. The Contractor must wash the material thoroughly (i.e., no dust particles); and to sieve the material thoroughly so that no individual rock pieces exceed sieve size of one inch (1") (25.0mm).

7.3 Un-Acceptable Backfill Materials

Un-washed Manufactured Sand, Black Sand (coal or coke by-products), slag, or foundry by-products will not be allowed as pipe bedding and / or backfill material.

7.4 Bedding

For the entire length of the trench, the excavation shall provide a six inch (6") space below the pipe, which shall be placed and firmly compacted with approved backfill materials, pit run sand, manufactured sand, Dense Graded Aggregate, or #57 stone, as specified by the Kentucky Transportation Cabinet Department of Highways Standard Specification for Road and Bridge Construction, (latest edition) "Fine Aggregates" or "Coarse Aggregates," to form bedding for the pipe.

The bedding shall be excavated at bells, valves, and fittings so the barrel of the pipe will have bearing on the bedding for its full length.
See Standard Drawing: 4300 in Appendix of Drawings.

7.5 Initial Backfilling

Initial backfill should occur as soon as possible after the installation of pipe, so as to prevent the pipe from shifting. After the pipe has been placed on the bedding, pit run sand, manufactured sand, #57 stone, or Dense Graded Aggregate, shall be deposited in the trench by mechanical equipment and

distributed in six inch (6”) layers on both sides of the pipe for the full width of the trench, the trench width having nine inches (9”) of horizontal clearance along each side of the pipe. The initial backfill shall be tamped in six-inch (6”) layers and thoroughly compacted under the centerline and on each side of the pipe. Backfill shall be placed and tamped to a height of at least twelve inches (12”) above the top of the pipe.

See Standard Drawing: 4300 in Appendix of Drawings.

7.6 Final Backfilling

When not under paved surfaces or surfaces where paving is not intended, the remainder of the trench shall be backfilled with soil that is not excessively wet, and is free from brush or vegetative matter, rocks larger than fist-size, pieces of concrete larger than fist-size, cinders, or any other matter which could prevent proper consolidation. Place in 12-inch lifts and compact with hand-held mechanical plate compactor, rammer or a sheepsfoot roller. Use a minimum of two passes.

When under paved surfaces or surfaces where paving is intended, the remainder of the trench shall be backfilled for the full depth with pit run sand, manufactured sand, Dense Graded Aggregate, or #57 stone as specified by the Kentucky Department of Highways Standard Specification for Road and Bridge Construction, (latest edition) “Fine Aggregates” or "Coarse Aggregates." Flowable Fill may be used if approved by the Company’s Project Manager. At pavement crossings, this pavement backfill shall extend five feet (5') beyond each end of the paving or proposed paving.

The final backfill in paved areas shall be placed and compacted in accordance with the following table.

Trench Backfill and Compaction Requirements Beneath Pavements						
	Max. Loose Lift Thickness (inches)				Min. # of Passes	Example Models
	MFD* Sand	Pit Run Sand	DGA	No. 57 Stone		
Lightweight Vib. Plate Compactors (100-220lbs)	8	8	6	8	3	Wacker-Neuson WP 1540; MBW GP18
Mediumweight Vib. Plate Compactors (220-660lbs)	12	12	9	12	3	MultiQuip MVH206GH; MBW GPR77H
Heavyweight Vib. Plate Compactors (>660lbs)	18	18	12	18	3	Wacker-Neuson BPU 4045A; MBW GPR135H
Smooth Drum Vibratory Rollers	12	12	9	12	3	Wacker-Neuson RTLx with Smooth Drum Att.
Equipment Mounted Compactors	24	24	24	24	3	Allied 1000B; Caterpillar CVP 110

*MFD=Manufactured

The total depth of cover (i.e., the vertical distance from crown-of-pipe to ground/pavement surface) shall be at least forty-two inches (42”) and no more than forty-eight inches (48”) unless approved prior to installation by the Company’s Project Manager.

See Standard Drawing: 4300 in Appendix of Drawings.

8. PLACING WATER MAIN IN SERVICE

8.1 General

After a section of main has been properly installed and valved, the main shall be filled, disinfected, pig cleaned, flushed, and pressure and leakage tested before being placed in service. The Company’s Project Manager or Inspector may require for the pressure test to be performed prior to the disinfection process.

The Contractor shall provide adequate personnel to assist the Company’s Inspector on-site for placing the water main in service.

The pig shall be inserted into the pipeline at the time of installation. Pipe soap shall not be applied directly to pigs. Pipeline pigs shall be supplied by the contractor unless otherwise specified in the Supplementary Specifications.

Disinfection, cleaning, and flushing of the water main must result with subsequent water samples passing all of the Company’s water quality tests.

8.2 Filling and Disinfection of the Water Main

8.2.1 Filling of the Water Main

The main shall be chlorinated prior to beginning the pigging operation and shall be filled from downstream of the pig. Contractors must use a flushing meter assembly with check valve for filling mains to account for water usage and provide backflow prevention.

The main shall be filled with hyperchlorinated water for at least 24-hours prior to the beginning of flushing operations.

The primary method of disinfection shall be the tablet method using a tablet chlorinator supplied by the Company’s Inspector. Use of granular calcium hypochlorite (HTH or equal) must be approved by the Company’s Project Manager or Inspector only if the tablet method is not feasible. If the granular method is approved, the granular calcium hypochlorite (HTH or equal) must be applied into each section of pipe during installation and prior to filling the water main. See Section 8.2.2.

While the pipe is filling, air shall be expelled through fire hydrants, air valves, or flushing connections as directed by the Company's Inspector.

The Contractor may be instructed to install additional taps as needed to facilitate the filling or expelling of air and they shall be provided at no additional cost to the Company. Abandoned taps shall be protected by covering with concrete.

All flushing connections, fill connections, discharge connections, and check valves shall be installed by the Contractor at locations indicated on the project drawings or as directed by the Company's Project Manager or Inspector if a fire hydrant or service connection cannot be utilized.

If not specified to be furnished by the Company, particular components of flushing/discharge hardware shall be furnished by the Contractor.

8.2.2 Disinfection of the Water Main

New or relocated water mains shall be disinfected in accordance with the requirements of the Kentucky Division of Water, Natural Resources and Environmental Cabinet and AWWA Standard C651 upon completion of construction and before being placed in service.

The primary method of disinfection shall be accomplished by using a tablet chlorinator while filling. The granular method is not the preferred method and must be approved by the Company's Project Manager or Inspector. For large volumes of water, the Company's chlorination trailer may be utilized using liquid chlorine (Sodium Hypochlorite 12.5%) supplied by the Contractor.

The tablet method utilizes a tablet chlorinator supplied by the Company's Inspector. Calcium Hypochlorite disinfecting tablets (Norweco Bio-Sanitizer or equal) shall be inserted into the tablet chlorinator. The tablet chlorinator must be fed by a 2" hose with a check valve placed upstream of the chlorinator, and shall then be connected to the water main by a 2" hose. All hoses used for the feed or supply line shall be supplied by the Company. If discharge hoses are needed, they shall be supplied by the Contractor. The Contractor shall lay out the hoses for the chlorination operation at the direction of the Company's Inspector.

The granular method is not preferred, but may be used for special circumstances as approved by the Company's Project Manager or Inspector. Use of this method requires the application of chlorine or chlorine compounds (calcium hypochlorite granules - HTH or equal) to each pipe length at the time of installation. The Contractor shall supply granular calcium hypochlorite or sodium hypochlorite as needed. Granular calcium

hypochlorite shall conform to ANSI / AWWA B300 and contain a minimum of 65% available chlorine by weight and be stored in a cool, dry, and dark environment to minimize its deterioration in accordance with the manufacturer’s recommendation. Granular calcium hypochlorite must meet NSF /ANSI Standard 60 requirements.

For large volumes of water, the Company’s chlorination trailer may be utilized using liquid chlorine (sodium hypochlorite 12.5%) supplied by the Contractor. Sodium hypochlorite liquid shall conform to ANSI / AWWA B300 and contain a minimum of 12.5% available chlorine by volume and the storage conditions and time must be controlled to minimize deterioration. Sodium hypochlorite liquid (12.5%) will freeze at -10 degrees Fahrenheit (F). Sodium hypochlorite liquid must meet NSF /ANSI Standard 60 requirements.

Any other disinfection methods not listed in this specification must be in accordance with the Kentucky Division of Water, Natural Resources and Environmental Cabinet and AWWA Standard C651 and shall be approved by the Company’s Project Manager.

The chlorination method selected shall provide a concentration of at least fifty (50) ppm and a residual of at least twenty-five (25) ppm at the end of 24 hours, to be followed by thorough flushing in compliance with 401 KAR 8:150 "Disinfection, Filtration, and Recycling ", Sections 4(1) and 4(2).

The following amounts of calcium hypochlorite tablets or granules or sodium hypochlorite liquid (@ 12.5 %, per 100 linear feet of pipeline, should produce fifty (50) ppm of chlorine:

Amount of Tablet or Granular Chlorine or Sodium Hypochlorite per 100 Linear Feet of Pipeline:			
Pipe Size	Number of calcium hypochlorite Tablets	Volume of calcium hypochlorite Granules	Volume of Sodium Hypochlorite @12.5% solution
4"	1/2 tablet	1/8 cup	0.031 gallons
6"	1/2 tablet	1/4 cup	0.072 gallons
8"	1/2 tablet	3/8 cup	0.126 gallons
12"	1-1/2 tablets	7/8 cup	0.286 gallons
16"	2-1/2 tablets	1-1/2 cups	0.501 gallons
20"	3-1/2 tablets	2-1/2 cups	0.787 gallons

After the disinfection procedure has begun, the Contractor shall tag-out and not operate any valves, including those newly installed, without consent and presence of the Company’s Project Manager or Inspector.

The Contractor shall perform the chlorination under the complete control of the Company’s Project Manager or Inspector.

8.3 Pigging and Flushing the Water Main

8.3.1 Pigging the Water Main

At the beginning of the pigging operation and under the direction of the Company’s Inspector, the upstream valve (feeder valve) shall be partially opened first and adjusted as needed after the pigging operation has begun. Next, the valve downstream of the pig (outlet valve) shall be opened immediately allowing the pig to move at approximately one (1) foot per second. When pushing the pig fed by a blow-off, flushing connection, or a tap, a check valve is required. All new ductile iron and PVC pipe installations shall be pigged. Pipeline pigs shall be supplied by the Contractor unless otherwise specified in the Supplementary Specifications. Pigs shall be used one time and discarded.

At no time shall trench water be allowed to enter the pipeline during or after the pigging operation. If trench water enters the pipe, the Company’s Inspector may require the water main to be disinfected and pigged again. Hyperchlorinated water shall be discharged through the end of the pipeline from which the pig shall be removed in accordance with the requirements of Section 8.4, “DISCHARGE OF HYPERCHLORINATED WATER”.

Following are the Outside Diameters (O.D.) for the Pigs. Due to the manufacturing process these can vary, + / - , by 1/8 to 1/4 inch.

C900 PVC Pipe (Blue Pigs)

4” DR 14	Pig O.D. = 4 - 1/8”
6” DR 14	Pig O.D. = 6”
8” DR 14	Pig O.D. = 7 - 7/8”
12” DR 14	Pig O.D. = 11 - 1/2”
4” DR 18	Pig O.D. = 4 - 3/8”
6” DR 18	Pig O.D. = 6 - 1/4”
8” DR 18	Pig O.D. = 8 - 1/8”
12” DR 18	Pig O.D. = 11 - 7/8”

Ductile Iron Pipe (Red Pigs)

4" PC 350	Pig O.D. = 4 - 1/2"
6" PC 350	Pig O.D. = 6 - 5/8"
8" PC 350	Pig O.D. = 8 - 3/4"
12" PC 350	Pig O.D. = 12 - 3/4"
16" PC 350	Pig O.D. = 17"

8.3.2 Flushing the Water Main

With respect to flushing, the Company's standard operating procedure is as follows. The flushing assembly is to be checked-out from the Company's Meter Shop by the Contractor and shall be returned in same or better condition by the Contractor within 5 days of the end of the flushing operations. The Company reserves the right to bill the Contractor for unreturned materials and/or repairs.

The meter/check valve portion of the flushing assembly is not to be installed until after the completion of disinfection and pigging operations (so as to protect the meter/check valve from internal damage caused by debris). Upon the completion of pigging operations and prior to the start of flushing operations, the meter/check valve is to be installed.

The Contractor is to supply a two inch (2") minimum sized discharge hose to be used during flushing operations. The Company's Inspector shall supply the feeder hose.

No flushing device, blow-off, or air relief valve shall be directly connected to any non-storm sewer ("Non-storm sewer" is defined as a sanitary sewer, combined sewer, septic tank or subsoil treatment system), storm sewer, or storm drain, and shall be located at a distance greater than ten (10) feet from any non-storm sewer.

See Standard Drawing: 1601, 1602, and 1603 in Appendix of Drawings.

8.4 Discharge of Hyperchlorinated Water

Discharge of hyperchlorinated water can be directed to combined or sanitary sewer facilities only after the Company's Project Manager has received approval from the Permit Section Supervisor of the Louisville and Jefferson County Metropolitan Sewer District (MSD) or other jurisdictional sewer agency authority. Flushing outside the MSD service area shall be in accordance with Kentucky Division of Water requirements. All flushing operations shall be in accordance with the governing authority's requirements, including rain event requirements.

The Contractor shall provide 72 hours of notice to the Company's Project Manager of their intent to discharge hyperchlorinated water. In locations

where discharge of hyperchlorinated water is restricted, the Company's Project Manager may approve tanker truck transportation for disposal at other sites. If hyperchlorinated water cannot be discharged to a combined or sanitary sewer, the hyperchlorinated water shall be neutralized to a chlorine concentration of less than 0.019 ppm (mg/L) before discharge to a storm drain or onto the ground surface in a manner which will not violate 401 KAR 5:031 Surface Water Standards.

The Contractor shall be responsible for all chlorinated water disposal (neutralized to acceptable levels per regulations prior to release) and adherence to "LWC Best Management Practice & Procedures on Chlorinated Water Disposal" and 401 KAR 5:031 and 401 KAR 8:020. The Contractor's disposal methods must have the approval of the Company's Project Manager. The Contractor is responsible for supplying all BMP's necessary to protect all storm inlets and waterways as required per Louisville and Jefferson County Metropolitan Sewer District or the applicable jurisdictional storm water authority.

The Company shall furnish all dechlorination hardware necessary for the dechlorination operation. The Contractor will be responsible for furnishing hoses and fittings required for the flushing operation.

The Company's Project Manager or Inspector shall reserve the right to postpone the dechlorination operation in the event of an anticipated major rain event or sub-freezing temperatures.

The Company's Project Manager or Inspector shall reserve the right to dechlorinate water with calcium thiosulfate (Captor), sodium thiosulfate, or other approved method supplied by the Company. For large volumes of water when the chlorination trailer is utilized, the Contractor shall supply the calcium thiosulfate or sodium thiosulfate in liquid form.

Calcium thiosulfate (Captor) will dechlorinate water with 50 ppm chlorine at a rate of one gallon of Captor per 4,000 gallons of hyperchlorinated water.

8.5 Pressure and Leakage Test

Before the hydrostatic test is begun, the Contractor shall: backfill all pipe, provide all temporary and permanent thrust anchor blocking, and install taps for releasing air at all points of highest elevation where no fire hydrant or flushing connection has been installed. All valves within the test area shall be fully open including valves on fire hydrant supply pipes.

It shall be the Contractor's responsibility to locate and repair any and all leaks that may develop.

The water main (ductile iron and PVC) and appurtenances shall be discharged of hyperchlorinated water, flushed and filled with potable water prior to performing the pressure and leakage test, unless directed otherwise by the Company’s Project Manager or Inspector.

The water main shall then be subject to a hydrostatic pressure of 200 PSI for ductile iron pipe, 200 PSI for PVC DR-14, and 150 PSI for PVC DR-18 or at a pressure specified by the Company’s Project Manager at the lowest point along the section being tested for a period of two (2) hours with the test pressure not dropping more than 5 PSI during the test. At elevated sections of the pipeline the minimum test pressure shall be 75% of the hydrostatic test pressure. In special circumstances, such as extreme elevation differential, the pressure test may be divided into multiple sections as directed by the Company’s Inspector or Project Manager.

In conjunction with the hydrostatic test, a leakage test shall be conducted at the same pressure and for the same period of time.

The leakage allowed will be as given by the following table. All of this testing shall be accomplished in the presence of the Company’s Project Manager or Inspector.

Allowable Leakage per 1000 feet of Ductile Iron or PVC Pipeline in gallons/hour.						
Pipe Diameter	4"	6"	8"	12"	16"	20"
D.I. or PVC DR14 Leakage @ 200 PSI (gal/hour)	0.38	0.57	0.76	1.15	1.53	1.91
PVC DR 18 Leakage @ 150 PSI (gal/hour)	0.33	0.5	0.66	0.99	1.32	1.66

All pipe, fittings, and other materials found to be defective under pressure and leak testing shall be removed and replaced. These tests shall be repeated until satisfactory to the Company’s Project Manager and Inspector. All visible leaks shall be repaired regardless of the amount of leakage. The pressure test shall be voided until such visible leaks are repaired.

The required testing apparatus, consisting of a gasoline motor driven pump, valves, pressure gauge, meter, test pump hose, and connections, shall be checked-out from the Company at 4801 Allmond Ave by the Contractor and returned to same location, the day the test is to be run, and shall be returned in same or better condition. The Company reserves the right to bill the Contractor for unreturned materials and/or repairs.

The Contractor may furnish a test pump if approved by the Company's Inspector and it shall be disinfected at the direction of the Company's Inspector. The test pump must be equipped with a quick-connect coupling to allow the connection of the Company Inspector's pressure gauge.

The Contractor shall be responsible for all phases of testing the water main.

8.6 Coliform Monitoring

The water main shall be placed in service only after coliform monitoring (sampling and analysis) applicable to the water main does not show the presence of coliform. If coliform is detected, repeat flushing of the water main and coliform monitoring. If coliform is still detected, repeat disinfection and flushing as if the line has never been disinfected. Continue the described process until monitoring does not show the presence of coliform. The presence or absence of total coliform monitored by sampling and analysis as needed shall be determined for new, cleaned, repaired or relocated water main(s).

Water samples shall be taken within 1,200 feet of each connection point to existing lines, at one (1) mile intervals, and at each dead end, without omitting any branch of the new, cleaned, repaired or relocated water main(s).

Sample bottles shall be clearly identified with a unique project identification note and delivered to the Company's Water Quality Laboratory.

8.7 Air Relief Valves

Air relief valves or hydrants shall be placed at necessary high points in water mains where air can accumulate. The Contractor shall install air relief valves at all locations as identified on project plans. Additional air relief valves that may be required by the Company's Project Manager will be compensated as described in **CHANGES IN THE WORK**, in the **TERMS AND CONDITIONS**.

Corporation stops for air relief valves shall be installed with tapping saddles to minimize pig damage when pig cleaning the water main.

8.7.1 Automatic Air Relief Valves

Where practical, the open end of an air relief pipe from automatic valves shall be extended a minimum distance of one foot (1') above grade and provided with a screened, downward-facing elbow.

Automatic air relief valves shall not be installed in situations where the flooding of the manhole or chamber may occur.
See Standard Drawing: 1603 in Appendix of Drawings.

8.7.2 Manual Air Relief Valves

The open end of an air relief pipe from a manually operated valve shall be extended to the top of the pit and provided with a screened, downward-facing elbow if drainage is provided for the manhole.

Use of automatic air relief valves are recommended wherever possible.
See Standard Drawing: 1603 in Appendix of Drawings.

8.8 Leak Detection By-Pass Meter at Underwater Crossings

Leak Detection By-Pass Meters are required at all underwater crossings which are greater than fifteen feet (15') in width.

Water main valves shall be installed at both sides of the water crossing so that section can be isolated for testing or repair. The valves and meter vault shall be easily accessible and not subject to flooding. The valve closest to the supply source shall have permanent taps on each side to allow the installation of a meter to determine leakage and for sampling purposes.

See Standard Drawing: 1608 in Appendix of Drawings.

9. FIRE HYDRANT

9.1 Materials and Installation

The fire hydrant installation shall consist of the following items and shall be as shown on the project drawing's detail sheet.

The field location of fire hydrants shall be approved by the Company's Inspector prior to installation. Fire hydrants shall be installed to allow proper drainage. When fire hydrants are located on project drawings in areas of poor drainage, the Contractor shall contact the Company's Project Manager or Inspector for movement to a suitable location. The fire hydrant shall be furnished by the Company, designed for proper depth of bury, and shall be so installed that the barrel will properly drain. Effort shall be made to install the shortest hydrant possible, while complying with the requirements of this section.

The fire hydrant anchor tee and auxiliary gate valve shall be installed as the main is installed. A tapping sleeve and gate valve shall be installed if the main is in service. The auxiliary valve shall be installed at the main. Fire

hydrant supply pipe (pipe, fittings, gate valve, and fire hydrant) must be secured to the water main for proper thrust restraint. All joints in the fire hydrant supply pipe (between fire hydrant and the main to which it is connected) shall be installed using a restrained joint method. Concrete is not required on direct bolt non-friction type restrained joint fittings between the fire hydrant and the auxiliary valve.

The fire hydrant supply pipe shall be ductile iron pipe, in all cases, regardless of the type of main being connected to. The fire hydrant supply pipe shall be a minimum diameter of six (6) inches and connected to a main with a minimum diameter of six (6) inches.

The fire hydrant shall be set plumb and shall have the pumper nozzles set facing perpendicular to the curb. The bottom of the break-away flange bolts shall be located from two inches (2") to seven inches (7") above finished grade, with the center of the nozzle a minimum of eighteen inches (18") above finished grade.

The fire hydrant shall be set to established grade, with the center of the barrel two feet (2') back of the face of the curb line (eighteen inches (18") behind the back edge of the curb for rolled curbs) or as directed, or in the absence of a curb approximately five feet (5') to fifteen feet (15') from the edge of the pavement, no more than fifteen feet (15') from a hard traveled surface, in accordance with governing fire department ordinances and accessible to the fire department. The base of the fire hydrant shall be set on a precast concrete block. The back of the elbow shall be well supported against undisturbed earth by means of precast concrete blocks.

Where fire hydrants are installed along a roadway, parking within ten feet (10') will be prohibited. Fire hydrants installed in parking areas must allow ten feet (10') clear access to the hose connection side of the fire hydrant. In all locations a four feet (4') minimum clear radius around the fire hydrant is required.

Two layers of polyethylene wrapping shall be installed from the fire hydrant anchor tee to the base elbow of the fire hydrant, including the fire hydrant valve, connecting pipe, and thrust restraints. The wrapping shall not extend to the weep holes located on the hydrant elbow. Do not install polyethylene wrapping on the hydrant barrel.

Fire hydrant barrel extension kits shall not be used for new fire hydrant installations unless approved by the Chief Engineer or designee prior to requisitioning from the Company's Warehouse. No more than one (1) fire hydrant barrel extension kit shall be used on an existing fire hydrant when raising is required. All fire hydrant barrel extension kits must be installed by the Company's Fire Hydrant Crew. Unless, if approved by the

Company's Chief Engineer, the Contractor may install the extension kit in the presence of the Company's Inspector.

Fire hydrant wrenches shall never be left unattended on a fire hydrant.

When flowing a fire hydrant the operating nut must be opened completely to prevent flooding through the hydrant's weep holes. Flow shall be regulated by the temporary meter assembly valve attached to the fire hydrant's discharge nozzle. The Inspector must notify the Company's Radio Room (569-3600, ext. 2700 or 2701) of all hydrants flowed between November 1 and March 31 so the hydrant can be winterized after use to prevent freezing.

Some fire hydrants have a locking device attached to prevent unauthorized use. The Contractor shall notify the Company's Inspector 48 hours in advance of the need to use such a fire hydrant so the lock can be removed by the Company's personnel. The Contractor shall immediately notify the Company's Inspector when the fire hydrant is no longer needed so the lock can be re-installed.

The Contractor shall notify the Company's Inspector of any "Out of Service" fire hydrants. "Out of Service" fire hydrant tags shall be placed on the nozzle of all inoperable or "Out of Service" fire hydrants.

The Contractor shall paint fire hydrants after installation at the Company Inspector's request to cover scraped or chipped areas on the fire hydrant, or to match the fire hydrant color chosen by the local Fire District. Fire hydrant paint will be supplied by the Company's Warehouse. Fire hydrant attachment number labels shall not be painted over.

Fire hydrant attachment number labels shall be installed by the Company's personnel.

The Contractor shall assist the Company's Inspector in fire hydrant flow testing and perform any clean-up necessary after tests are completed.

See Standard Drawing: 2000 in Appendix of Drawings

9.2 Drainage Pit

Whenever a fire hydrant is set, a drainage pit shall be excavated for the fire hydrant. Dimensions of the pit shall be three (3) ft. long x three (3) ft. wide x four (4) ft. deep, with the pit centered about the barrel of the fire hydrant. Once the fire hydrant is installed and prior to filling the pit with washed #3 stone, the fire hydrant shall be pressurized, the weep holes flushed and then depressurized to ensure that the fire hydrant drains properly. Once the weep

holes have been flushed and proper drainage is verified, the drainage pit shall be filled compactly with washed #3 stone under and around the elbow of the fire hydrant and to a level of two feet (2') above the base of the elbow.

Before this dry well (drainage pit) is covered with backfill, the Contractor shall notify the Company's Inspector in order that each drainage system may be inspected. The top of the entire drainage pit shall be covered with geotextile fabric (four fire hydrant blankets or as many needed to cover the entire top) before backfilling.

Fire hydrant drainage pits shall not be connected to or located within ten (10) feet of non-storm sewers ("Non-storm sewers are defined as sanitary sewers, combined sewers, septic tanks and subsoil treatment systems), and where practical storm sewers or storm drains.

See Standard Drawing: 2000 in Appendix of Drawings

9.3 Removal of Fire Hydrants

Fire hydrants that are discontinued, abandoned or replaced shall be removed and returned with caps to the Allmond Avenue Warehouse. The Contractor shall be billed for any fire hydrants not returned. Surfaces shall be restored in accordance with Section 11: "RESTORATION".

9.3.1 Removal of Fire Hydrants on Active Water Mains

All discontinued fire hydrants shall be abandoned by turning off the fire hydrant's connecting valve and excavating and removing the fire hydrant and fire hydrant lead.

The hydrant's gate valve shall be turned off and a mechanical joint plug installed on the gate valve. A concrete thrust block shall be poured behind the plug. The fire hydrant gate valve's round top and lid shall be removed and the key tube filled with concrete.

9.3.2 Removal of Fire Hydrants on Abandoned Water Mains

Fire hydrants which are abandoned with the water main, in lieu of removal by excavation and with approval of the Company's Project Manager, the fire hydrant may be cut off no less than one foot (1') below finished grade, the abandoned barrel filled with concrete, the fire hydrant gate valve turned off, round top and lid removed, and key tube filled with concrete.

10. SERVICE WORK

10.1 Notification of Customers

It is the Contractor's responsibility to notify customers of upcoming interruption of service and to coordinate this notification with the Company's personnel. It is the intent of the Company not to interrupt service to existing customers, unless absolutely necessary. When it is necessary to interrupt service, all customers affected by the shut-off shall be notified in person, or in cases where the customer cannot be contacted, by a Louisville Water notification tag attached to the front door of their premises by the Contractor.

Such notification shall be made a minimum of twenty-four hours prior to shut-off and with the Company's approval, allowing sufficient time for the customer to draw and reserve an ample supply of water. Notification tags are available from the Company.

10.2 Service Installation - General

A service installation is defined to include all work necessary to install the copper tubing or pipe and all related items from the main to the property line. The installation shall include, the following: tapping of the main, installing the corporation stop or gate valve; service line tubing or pipe, meter vault, ductile or cast iron frame and lid/cover, water meter assembly, backfilling and restoring of paved and unpaved surfaces and flushing. Installation may require reconnection to existing service lines. Excavation, backfilling, and restoring paved and unpaved surfaces shall be done in accordance with these specifications.

Short services are defined as services to meters on the same side of the street as the water main to which it is connected.

Long services are defined as services to meters on the opposite side of the street of the water main to which it is connected and shall be bored or jacked under pavements unless an open cut is approved by the Company's Project Manager.

The Contractor must verify the service size with the Company's Project Manager or Inspector where any service length is greater than one hundred feet (100').

Where under pavement, tubing shall be installed continuously and in one piece without intermediate joints or couplings except at the terminals and except where the continuous length to be installed exceeds one hundred feet (100') for 3/4" and 1" sizes.

All taps in water mains shall be made by the Contractor, and corporation stops shall be inserted by means of a tapping machine in such manner that will permit continued conditions of water flow and pressure within these mains. The Contractor shall use care in inserting and tightening the corporation stop and shall reimburse the Company for any damage or expense caused by any of their activities under this contract.

Wet tapping of water mains shall be required on all pipe. No service taps shall be installed on dry water mains.

10.3 Service Installation - Two Inches (2") and Smaller

During installation of corporation stops, the corporation stop shall not be turned using a pipe wrench. The corporation stop must be turned using a smooth jaw, adjustable crescent type wrench or open-end wrench. Special care shall be observed in handling the copper tubing so as not to kink, mash, or otherwise damage it. No such damaged tubing shall be installed. No bend shall be made in the tubing with a radius less than four inches (4").

All intermediate and terminal joints for 3/4" and 1" sizes of copper tubing shall be the compression type, using the proper tools for the sizes of tubing and types of fittings involved.

Service connections shall be installed so that the outlet is at an angle of 45° above the horizontal. A bend in the service line shall be provided to ensure flexibility and to accommodate the effects of loads.

The service line shall be flushed for two (2) minutes through the meter stop before connecting to the meter. Once the corporation stop has been turned on, and prior to backfilling, the corporation barrel set nut may need to be securely tightened to prevent leakage.

For Double Setter meters (where two meters are to be installed in one vault) the tail pipes of a service installation shall be installed parallel for their entire length and at least eight inches (8") apart, and in no event shall they touch or cross one another.

See Standard Drawings: 3002, 3003, 3004, 3400, 3401, 3403, 3404, 3420, 3430, 3200, and 3202 in Appendix of Drawings

10.3.1 Tapping Ductile or Cast Iron Pipe for Service Installation - Two Inches (2") and Smaller

In locations where Ductile Iron or Cast Iron Pipe will be tapped, the pipe shall be wrapped with three (3) layers of polyethylene compatible tape completely around the pipe to cover the area where the tapping machine and

chain is mounted. The tap shall install the corporation stop directly through the tape and polywrap.

After the tap is completed on mains with polyethylene wrap, the Contractor shall repair and replace the polyethylene wrap to completely cover the main and corporation stop in accordance with the details in the Appendix of Drawings.

The corporation stop and a minimum distance of three feet (3') of the copper service line shall be wrapped with polytape.

For ductile iron pipe Pressure Class 350 service outlets shall be made per the table below:

Service Installation Guide for Pressure Class 350 Ductile Iron Pipe					
Pipe Size	Tap Size				
	3/4"	1"	1-1/2"	2"	> 2"
4"	tap	saddle	saddle	saddle	requires tapping
6"	tap	tap	saddle	saddle	sleeve or fitting
8"	tap	tap	saddle	saddle	"
12"	tap	tap	saddle	saddle	"
16" & 20"	tap	tap	tap	tap	"

All direct taps require the installation of 2 to 3 layers of 3-mil thread sealant tape on the corporation stop. This guide is based on either a direct tap method or tapping saddle using an AWWA standard taper thread Corporation Stop.

See Standard Drawings: 3002, 3003, 3004, 3400, 3401, 3403, 3404, 3420, 3430, 3200, 3202 and 3804 in Appendix of Drawings

10.3.2 Tapping PVC Pipe for Service Installation - Two Inches (2") and Smaller

For PVC (polyvinyl chloride) pipe, service outlets of three-quarter inch (3/4") through two inches (2") shall be made with a tapping saddle.

Tapping saddle bolts shall be tightened with a torque wrench according to the saddle manufacturer's torque recommendations.

When installing a service to PVC, the Contractor shall use a shell cutter that is designed for DR14 (pressure class 200, AWWA C900) or DR18 (pressure class 150, AWWA C900) and one that will remove the material and retain the coupon. The cutting tool must be sharp and without damage. Drill

cutting tools are prohibited because they may increase the risk of causing the pipe to split longitudinally. The coupon must be delivered to the Company's Inspector.

When tapping the PVC pipe under pressure, the pipe temperature shall be between 32° and 90° F.

The taps shall be located a minimum of twenty-four inches (24") from the joint of the PVC pipe, and, if installing more than one tap in one length of PVC pipe, the taps shall be staggered and a minimum of eighteen inches (18") apart, measured longitudinally. Taps shall not be made in an area of PVC pipe that shows damage.

When a service tap is made on a PVC water main, a tracer wire shall be connected to the tracer wire on the main and then wrapped, with insulation and jacket removed, around the copper service line or affixed to the tapping saddle. When connecting the tracer wire to a tapping saddle, add two washers and a second nut to one of the bolts of the saddle. Strip a small section of the wire jacket and sandwich the bare portion of wire between the two washers and tighten the second bolt. Tracer wire must be rated for direct burial at 30 volts and be 12 AWG solid copper, copper clad steel (CCS), or high strength copper clad steel (CCS). Tracer wire shall be jacketed with blue HDPE or HMWPE insulation and designed for direct burial.

See Standard Drawings: 3002, 3003, 3004, 3400, 3401, 3403, 3404, 3420, 3430, 3200, 3202, and 3804 in Appendix of Drawings

10.4 Service Installation – Larger than Two Inches (2")

Service outlets larger than two inches (2") shall be made with a ductile iron tee or stainless steel or ductile iron tapping sleeve and gate as directed by the Company's Project Manager or Inspector on new ductile iron or PVC pipe.

When tapping a main, the Contractor shall make the tap only after a hydrostatic pressure test of 125 psi is applied for fifteen (15) minutes with no leakage to the tapping sleeve and gate valve assembly. Before cutting an existing main under pressure, the Contractor shall ensure the adjacent existing valve and fittings are sufficiently secure. The Contractor shall be responsible to provide the tapping coupon to the Company's Inspector.

The service line shall be flushed for two (2) minutes through the meter stop before connecting to the meter.

There shall be no tapping of same size on same size pipe with tapping sleeve

and gate, a tee must be installed.

10.4.1 Tapping Ductile or Cast Iron Pipe for Service Installation - Larger than Two Inches (2")

After the tap is completed on mains with polyethylene wrap, the Contractor shall repair and replace the polyethylene wrap to completely cover the main and fittings in accordance with the detail in the Appendix of Drawings.

See Standard Drawings: 3203A, 3203 and 3601 in Appendix of Drawings

10.4.2 Tapping PVC Pipe for Service Installation – Larger than Two Inches (2")

When installing a service on PVC water main, the Contractor shall use a shell cutter that is designed for DR14 (pressure class 200, AWWA C900) or DR18 (pressure class 150, AWWA C900) and one that will remove the material and retain the coupon. No twist drills will be allowed. The cutting tool must be sharp and without damage. The coupon must be delivered to the Company Inspector.

When tapping the PVC pipe under pressure, the pipe temperature shall be between 32° and 90° F. The taps shall be located a minimum of twenty-four inches (24") from the joint of the PVC pipe. Taps shall not be made in an area of PVC pipe that shows damage.

Tapping sleeves shall be assembled according to the manufacturers' instructions and must be supported independently of PVC pipe by precast concrete blocks during the tapping operation. The support shall be left in place, filling any voids such that the pad is bearing against undisturbed earth, and thrust blocks behind tapping sleeves shall be used as with other fittings.

When a service tap is made on a PVC water main, a tracer wire shall be connected to the tracer wire on the main and then wrapped, with insulation removed, around the service line gate valve and extend to the top of the key tube. Tracer wire must be rated for direct burial at 30 volts and be 12 AWG solid copper, copper clad steel (CCS), or high strength copper clad steel (CCS). Tracer wire shall be jacketed with blue HDPE or HMWPE insulation and designed for direct burial.

See Standard Drawings: 3203A, 3203 and 3601 in Appendix of Drawings

10.5 Meters

Contractor shall install or replace meters as stated on the Project Drawings or at the direction of the Company's Project Manager or Inspector. New meters shall be picked up by the Contractor at the Meter Shop located at 4801 Allmond Avenue. Old meters shall be returned in good condition to the Company's Inspector, including any lids or tags that may identify the meter number or attachment number.

10.6 Setting Meter Vaults

Meter vaults shall be set either to the existing grade, or as indicated on the service order or to the grade given by a stake card. Earth shall be firmly tamped by pneumatic, vibratory or other approved compaction device and backfilled per Section 7: "BACKFILLING PROCEDURES AND TAMPING" around the vault and cover, the lid locked in and the meter setting centered in the middle of the vault and at the proper depth below grade, as shown on the drawing in the Appendix of Drawings.

Meter vaults shall not be installed in areas subject to vehicular traffic whenever possible. When directed to be installed in areas subject to vehicular traffic, the meter vault shall be of the heavy-duty concrete type with heavy duty frame and cover.

See Standard Drawings: 3002, 3003, 3004, 3400, 3401, 3403, 3404, 3420, 3430, 3200, 3202, 3203, and 3601 in Appendix of Drawings

10.7 Pressure Regulators (Pressure Reducing Valves)

When directed by the Company's Project Manager, the Contractor shall install a pressure regulator (pressure reducing valve). The pressure regulator shall be installed on the front side (upstream) of the meter. When the pressure at the meter is 100 psi or greater, the Contractor shall install a pressure regulator as directed by the Company's Project Manager or Inspector. Pressure regulators shall be supplied by the Company unless otherwise stated in the Contract Documents. The Contractor shall perform an operability test and check for leaks after the pressure regulator has been installed.

See Standard Drawings: 3003, 3004, 3401, and 3202 in Appendix of Drawings

10.8 Leak Testing the Service

After the complete service has been installed and before any joints are covered, the corporation stop shall be opened and the entire length of the

service shall be subjected to system water pressure and each joint shall be inspected and sounded by the Contractor for leaks. The entire tailpiece shall be included in this leak check by temporarily capping the end of the tailpiece prior to connection to the customer

Any leaks so found shall be immediately repaired. After the service has been observed by the Company's Inspector to be watertight throughout its length, the meter stop shall be shut-off, and the backfilling started. The corporation barrel set nut may need to be securely tightened to prevent leakage.

The Contractor shall leave the corporation stop fully open and the meter angle stop fully closed upon completion of the testing.

10.9 Relocate Service

Relocating a service is defined to include installing a completely new service to an existing customer, including a new tail pipe, discontinuing the old service at the main (in the event the existing main is to remain active), abandoning the old meter vault, and returning the old meter, frame and lid/cover to the Company's Allmond Avenue Yard and backfilling.

Concrete meter vaults and heavy-duty frame and covers shall be used in driveways, parking lots, and other areas of vehicular traffic.

Service installation shall be done in accordance with "Service Installation – Two Inches (2") and Smaller, (Section 10.3) and Service Installation – Larger than two inches (2")", (Section 10.4). The Contractor shall discontinue the old service in accordance with "Discontinue Service" (Section 10.16). Excavation, backfilling, and restoring of surfaces shall be done in accordance with these specifications. Abandoning of the old meter vault shall be done in accordance with "Backfill Meter Vault" (Section 10.17).

When lead is encountered, refer to Section 10.11, "Lead and Galvanized Service Renewals."

Contractors shall be responsible to make at least two (2) attempts when connecting the tailpiece to a customer's galvanized service line. The second attempt shall be limited to a maximum of three feet (3') beyond the property line or to any property improvement which would require excessive restoration. If the second attempt is unsuccessful, the Contractor shall immediately contact the Company's Inspector, and provide a representative sample of the deteriorated line, at which time, the Company's Project Manager or Inspector shall arrange for a temporary service connection to the customer to be installed by others.

See Standard Drawing: 3440 in Appendix of Drawings

10.10 Renew Service

Renewing a service is defined to include installing a new copper service line from the existing main or new main to the meter stop, and a new copper tail pipe from the meter stop to the property line or the property service connection, and shall include, the following: excavation, boring or jacking of copper tubing or pipe, installing corporation stop, tapping saddle or tapping sleeve and gate valve at the main, if applicable, installing all tubing and/or pipe and all associated fittings, meter vault, frame and lid/cover, and backfilling and restoring of all surfaces.

Service installation shall be done in accordance with “Service Installation – Two Inches (2”) and Smaller, (Section 10.3) and Service Installation – Larger than two inches (2”), (Section 10.4). The Contractor shall discontinue the old service in accordance with “Discontinue Service” (Section 10.17). All lead service lines shall be renewed in accordance with “Cutting Lead Pipe” (Section 10.13) and “Flushing of Lead and Galvanized Services” (Section 10.14) unless otherwise instructed on the project drawings. Excavation, backfilling, and restoring of surfaces shall be done in accordance with these specifications.

When lead is encountered, refer to Section 10.11, “Lead and Galvanized Service Renewals.”

Contractors shall be responsible to make at least two (2) attempts when connecting the tailpiece to a customer’s galvanized service line. The second attempt shall be limited to a maximum of three feet (3’) beyond the property line or to any property improvement which would require excessive restoration. If the second attempt is unsuccessful, the Contractor shall immediately contact the Company’s Inspector, and provide a representative sample of the deteriorated line, at which time, the Company’s Project Manager or Inspector shall arrange for a temporary service connection to the customer to be installed by others.

See Standard Drawing: 3441 in Appendix of Drawings

10.11 Lead and Galvanized Service Renewals

Renewing a lead or galvanized service is defined to include installing a new copper service line from the existing main or new main to the meter stop, and a new copper tail pipe from the meter stop to the property service connection, and shall include, the following: excavation, boring or jacking of copper tubing or pipe, installing corporation stop, tapping saddle or tapping sleeve and gate valve at the main, if applicable, installing all tubing and/or pipe and all associated fittings, meter vault, frame and lid/cover, and backfilling and restoring of all surfaces.

The Contractor is required to identify the property line location and excavate the service line's tail piece to locate the property service connection. If the property service connection is not found, the Contractor shall seek permission from the property owner to excavate on private property. With permission, the Contractor shall continue to excavate up to ten feet (10') beyond the property line onto private property in an effort to locate the property service connection and determine the material of the customer's service line. The Company's Inspector shall verify the material of the customer's service line prior to cutting any pipe.

If the material of the customer's service line is not lead, the Contractor shall renew/relocate the entire service line from the main to the customer's connection.

If the material of the customer's service line is lead or galvanized pipe, the Company's Project Manager or Inspector will contact the customer to make them aware of the work to be completed by the Company and the existence of lead or galvanized pipe on the customer's side of the service line. The Company's Inspector shall also enquire if the customer is willing to replace their lead or galvanized service line.

- 1) If the customer is willing to replace their lead or galvanized service line, the Contractor shall coordinate the renewal/relocation of the Company's lead or galvanized service line with the customer's plumber.
- 2) If the customer is not willing to replace their lead or galvanized service line and the service is to be relocated or renewed, the Contractor shall replace the entire service line from the main to the customer's connection and shall install a dielectric between the end of the Company's tail piece and the customer's lead or galvanized service line. The dielectric will be composed of a 24" section of like diameter schedule 80 PVC pipe and a plastic universal transition coupling (supplied by the Company). If the customer's service line is less than 10 feet in length as measured from the customer's building to the dielectric connection, the Company's Project Manager shall be contacted prior to renewing/relocating the service to determine if a new grounding system is needed.

Service installation shall be done in accordance with "Service Installation – Two Inches (2") and Smaller, (Section 10.3) or Service Installation – Larger than two inches (2")", (Section 10.4). The Contractor shall discontinue the old service in accordance with "Discontinue Service" (Section 10.17). All lead service lines shall be renewed in accordance with "Cutting Lead Pipe" (Section 10.13) and "Flushing of Lead and Galvanized Services" (Section 10.14) unless otherwise instructed on the project drawings. Excavation, backfilling, and restoring of surfaces shall be done in accordance with these

specifications.

See Standard Drawing: 3441 in Appendix of Drawings

10.12 Lead Hazards and Safety Precautions

Pure lead (Pb) is a heavy metal that can damage the central nervous system, cardiovascular system, reproductive system, hematological system, and kidneys. Symptoms of chronic overexposure include loss of appetite, constipation, nausea, excessive tiredness, headache, fine tremors, metallic taste in the mouth, weakness, nervous irritability, hyperactivity, muscle and joint pain or soreness, anxiety, insomnia, numbness, or dizziness. Lead is most commonly absorbed into the body by inhalation. Workers can also absorb lead through the digestive system if it enters the mouth and is ingested. A significant portion of lead inhaled or ingested can enter the bloodstream. Once in the bloodstream, lead circulates through the body and is stored in various organs and body tissues. Some of this lead is filtered out of the body quickly and excreted, but some remains in the blood and tissues.

Personnel performing lead service line removal activities shall:

- Wear disposable gloves when handling lead.
- Dispose of gloves and other materials that contact lead as trash on a regular basis.
- Be careful to not touch eyes or face.
- Wash hands before eating or smoking.
- Wash work clothes regularly.
- Contact management if they feel that they have been affected by lead exposure.

Information taken from 'OSHA – Lead in Construction', OSHA 3142-12R 2004

10.13 Cutting Lead Pipe

When the cutting of pipe made of lead is required, the pipe shall be cut with a shear device, such as Reed Ratchet Shears or similar device, as approved by the Company's Project Manager. Sawing of lead pipe shall not be allowed. The Company encourages contractors to recycle any lead service pipe that is removed.

10.14 Flushing of Lead and Galvanized Services

Flushing of renewed lead services shall be conducted immediately after the renewed service is reconnected at maximum flow. Flushing shall be continued

for a minimum of sixty (60) minutes. Flushing of the service for sixty (60) minutes shall also be conducted if a copper service is renewed and it is connected to a dielectric and private lead service line. If a galvanized service that has not been previously connected to lead is renewed, it shall be flushed for a minimum of five (5) minutes. If any part of the galvanized service is connected to lead, then the service shall be flushed for a minimum of sixty (60) minutes.

The Contractor shall be responsible for supplying all hoses, fixtures, and couplings needed to perform the lead service flush.

The Contractor shall identify, on a daily basis, those services that will require renewal on the following workday. Residences requiring lead or galvanized service renewals shall be investigated to determine if an outside spigot is available and functioning properly. The Contractor shall notify the Company's Inspector when an outside spigot is not available or not properly functioning in order for the Company's Inspector to contact the customer.

Services that cannot be flushed externally by the Contractor or internally by the customer at the time of the renewal, may be renewed, but shall be left in the "off" position immediately after the renewal is completed. The Contractor shall immediately notify the Company's Inspector when any service is turned "off" in order for the Company's Inspector to leave appropriate notification with the customer and notify the Company's Radio Room.

10.15 Lead Service Renewal Notification

The Contractor shall assist the Company's Inspector with distributing customer information and notices to all properties in which a lead service is to be renewed or replaced, as directed by the Company's Inspector. Notices are supplied by the Company and typically composed of self-adhesive window hangers or door hangers.

10.16 Transfer Service

Transferring a service is defined to include installing a length of service line, as required, to reconnect an existing copper service to the existing main or new main, and shall include, the following: excavation; boring or jacking of copper tubing or pipe; installing corporation stop; tapping saddle or tapping sleeve and gate valve at the main; installing all tubing and/or pipe and all associated fittings; and backfilling and restoring of all surfaces.

Service installation shall be done in accordance with "Service Installation – Two Inches (2") and Smaller, (Section 10.3) or Service Installation – Larger than two inches (2")", (Section 10.4). The Contractor shall discontinue the old service in accordance with "Discontinue Service" (Section 10.17).

Excavation, backfilling, and restoring of surfaces shall be done in accordance with these specifications.

When lead is encountered, refer to Section 10.11, "Lead and Galvanized Service Renewals."

See Standard Drawing: 3442 in Appendix of Drawings

10.17 Discontinue Service

Discontinuing a service is defined to include excavating a service line at a water main that is to remain active, turning off the corporation stop or ferrule, disconnecting and plugging the service line, returning the old meter, frame and lid/cover to the Company's Allmond Avenue Yard, backfilling the meter vault, and restoring all surfaces.

Driven ferrules, which are not threaded onto the main, will require water main shutdown, removal, and installation of a wrap-around repair band. Driven ferrules can be expected on most lead services.

Excavating, backfilling, and restoring of surfaces shall be done in accordance with these specifications. Abandoning the old meter vaults shall be done in accordance with "Backfill Meter Vault" (Section 10.18).

See Standard Drawing: 3442 in Appendix of Drawings.

10.18 Backfill Meter Vault

Meter vaults on all discontinued or relocated services shall be abandoned by removing the old meter, frame and lid/cover, and any existing curb stop frame and lids, and filling the void to existing grade with backfill and surface material, appropriate to the type surface. Unpaved areas shall be backfilled to grade with topsoil and restored in accordance with "RESTORATION" (Section 11).

Sidewalks shall be backfilled with pit run sand or DGA and repaved in accordance with "RESTORATION" (Section 11). Parking lots, driveways, and other areas subject to vehicular traffic shall be backfilled using DGA and restored in accordance with "Twelve-Inch (12") Cutback Requirement" (Section 5.4.2), "BACKFILLING PROCEDURES AND TAMPING" (Section 7), and "RESTORATION" (Section 11) found in this specification.

All meters and frames and lids/covers shall be returned to the Allmond Avenue warehouse. The Contractor shall be responsible for all remedial work due to discontinuation of meter vaults as required in the section "WARRANTY" (Section 12).

10.19 Potential Shock Hazard

Due to electrical grounding of some electrical services to metal water service lines, the potential for electrically charged water service lines and/or water meters exists.

The Contractor shall check each service for electric potential before working on the service. Any electrically charged water service shall immediately be brought to the attention of the Company's Inspector and reported to the appropriate electric company.

11. RESTORATION

11.1 General

The Contractor shall be responsible for restoring all disturbed areas resulting from their construction or activity.

A maximum of 1,500 lineal feet may be disturbed at one time prior to final grade. Restoration of the area is required before the Contractor is permitted to proceed.

The Contractor shall work no more than two sites at a time. At least one site must be fully restored with the exception of milling and paving before the Contractor begins working on the next site. This work includes yard, sidewalk and curb restoration as well as the patching of all road cuts.

The Contractor is to take whatever measures are necessary to keep all traveled surfaces free of dirt, mud, or other material during all non-working hours. Unless otherwise approved by the Company's Project Manager, no excavated material shall be placed on the paved surface or any other areas near the trench; the excavated material shall be placed directly from the trench to the haul truck. The Contractor shall provide adequate dust control and follow all governing regulations applicable to the work.

Repaving over the completed trench shall be done by the Contractor, who shall furnish all materials required. Repaving shall match the original paving in type, shall be first class in all respects, and shall comply with specifications covering the type of paving to be restored as issued by the authority over the thoroughfare involved.

The restoration of parking lots and driveways serving commercial and/or public establishments shall comply with the specifications of the respective authority having jurisdiction over the abutting right-of-way.

Except for parking lots, driveways, and sidewalks, each individual pavement restoration shall have a Company-supplied pavement marker

installed by the Contractor.

All saw cuts shall be straight and perpendicular to the driveway / roadway. Restoration shall be made with the same type material and finish that is removed. Street restoration shall be as specified in the detail for Backfill and Pavement Restoration in accordance with the Appendix of Drawings, pending the jurisdiction of said street, included in these specifications. Permanent restoration of driveway, sidewalks, and street intersections shall be completed by the Contractor within ten working days after backfilling of trench is complete. If restorations are not completed, the Company may, at its option, have the repairs made by others and deduct those costs from the amount owed to the Contractor.

11.2 Asphalt Paved Surfaces

All Asphalt pavement cuts are to be restored in accordance with the permanent pavement restoration details as shown in the Appendix of Drawings.

Pavement cuts are to be uniform width and straight sawed edges. All asphalt pavement trench edges shall be saw cut regardless of paving restoration (full lane, complete roadway, etc.). Use of a hoe ram for cutting pavement trench edges is not allowed. An approved joint sealer is to be used to seal all joints between new and existing pavement. In the event asphalt plants have closed due to cold weather, the Contractor shall maintain all pavement cuts with recessed steel plates or temporary asphalt pavement, until it becomes possible to permanently restore the pavement. Asphalt pavement used for permanent pavement restoration shall have a minimum temperature of 225°F as measured when discharged from the truck.

Particular care is to be taken that existing pavement surfaces within the right-of-way are not scarred or otherwise damaged by equipment. Planking or other protective devices are to be used at all times to prevent damage to paved surfaces from tracked equipment.

In the event the asphalt paved surfaces are damaged or scarred by work on this project, resurfacing is to be required as follows:

- 1) If scarring or other damage is continuous, resurfacing is to be likewise continuous and is to consist of one and one-half inches (1 ½") Class A bituminous surfaces extending to the edge of damaged lane.

The edge of the damaged pavement shall be edge keyed, with the resurfaced section being flush with the undisturbed adjacent pavement surface, allowing roadway surface drainage not to be obstructed.

- 2) If scarring or other damage is determined to be intermittent, individual or paved patches may be permitted and are likewise to consist of Class A bituminous surface, extending to the edge of the damaged lane.
- 3) All damage to the edge of pavement shall require the removal of and base repair of a minimum of two feet (2') in addition to the maximum width of the damage. The longitudinal edge is to be a uniform width with straight sawed edges. The lane is then to be milled a minimum of five feet (5') in width with a two inch (2") minimum asphalt overlay.

There will be no skip milling allowed and the minimum length will be determined in the field by the Company's Inspector or Project Manager.

All joint sealant material shall be: hot-applied, non-water-based, and produced by a competent and reputable manufacturer. Sealant shall be in accordance with the permitting agency's specifications. Sand shall be placed over the joint sealant to prevent tracking.

11.3 Asphalt Paved Surface Materials and Construction Methods

The composition of the asphalt pavement and method of construction shall be in accordance with the Kentucky Transportation Cabinet Department of Highways (KYTC) Standard Specifications for Road and Bridge Construction (latest edition). A copy of these specifications is on file with the Company's Supervisor of Construction Inspection Services, 4801 Allmond Avenue.

11.4 Concrete Paved Surfaces

All concrete used for structural purposes (such as thrusts blocks, road subbase, sidewalks, etc.) shall be produced at a concrete plant, delivered by a ready-mix concrete truck or mobile mixer (metered) concrete truck. Only concrete used for miscellaneous purposes (such as vault floor pad, end plugs for mains to be abandoned-in-place, etc.) is allowed to be that of an on-site bag mix.

All cuts in concrete driveways and sidewalks are to be replaced from construction joint to construction joint, using minimum 3,500 psi concrete. When a section of sidewalk at a street intersection is to be replaced in the Louisville / Jefferson County Metro Government jurisdiction a wheel chair ramp is to be installed in accordance with the Appendix of Drawings.

For pipeline installation work, all concrete curbs or curb and gutter which are damaged are to be entirely removed and replaced in kind between existing joints. Stone base material shall be placed and compacted under any disturbed area with the curb replacement with the same type stone base

material and compaction as removed. Base material shall extend a minimum of eighteen (18) inches beyond the back of the curb. Install one-half inch (1/2"), pre-molded expansion joint material between new and existing concrete. Concrete shall be a minimum 3,500 psi concrete.

For service line installation work, concrete curbs or curb and gutter which are saw cut (typically four inch (4)" in width) are to be replaced in kind and have additional saw cutbacks one foot (1') to each side of the initial cut (4" cut). If either of the additional one foot (1') saw cutbacks fall within two feet (2') of an existing pavement joint, the entire section shall be removed and replaced to the existing joint. Stone base material shall be placed and compacted under any disturbed area with the curb replacement with the same type stone base material and compaction as removed.

Base material shall extend a minimum of eighteen (18) inches beyond the back of the curb. Install one-half inch (1/2"), pre-molded expansion joint material between new and existing concrete. Concrete shall be a minimum 3,500 psi concrete.

Particular care is to be taken that existing pavement surfaces within the right-of-way are not scarred or otherwise damaged by equipment. Planking or other protective devices are to be used at all times to prevent damage to paved surfaces from tracked equipment.

In the event the concrete paved surfaces are damaged or scarred by work on this project, repair is required as follows:

- 1) Concrete roadways shall be replaced per the permitting agency's standard specifications for the full width of the lane and to the nearest construction joint on each side of the damaged area.
- 2) All concrete driveways and aprons that are damaged by the Contractor's construction or activity, or that is specified for replacement on the plans shall be replaced in their entirety to the nearest construction joint. Concrete thickness and strength shall be per the Company's standard specifications. The style shall match the existing driveway or apron. The limits of repair, style of concrete and type of concrete for each driveway or apron shall be approved by the Company's Project Manager prior to installation. The Company's Project Manager may modify thickness, style, type and limits of repair based on field conditions and property owner consultation which shall be installed by the Contractor at no additional cost to the Company.

See Standard Drawing: 4410 in Appendix of Drawings

11.5 Concrete Paved Surface Materials and Construction Methods

All concrete used on this project and as shown on the project drawings shall have a 28-day minimum compression strength of 3,500 pounds per square inch (psi). The proportions and construction requirements for the concrete shall be as listed in the Kentucky Transportation Cabinet Department of Highways (KYTC) Standard Specifications for Road and Bridge Construction (latest edition).

See Standard Drawings: 4000, 4100 and 4400 in Appendix of Drawings

11.6 Unpaved Surfaces

All drainage structures (such as pipe, head or wing walls, channels, flumes, and culverts), fences, signs, etc., public or private, which are damaged or removed by this Contractor, shall be repaired or replaced in kind to the satisfaction of the owner. All open ditches shall be restored to their present cross sections, depths, and slopes, and dressed and graded to provide permanent adequate drainage to present connecting ditches or culverts equal to the original drainage systems except where specifically indicated on the project drawings.

The Contractor shall replace all surface material including landscaping, shrubbery, fences, or other disturbed surfaces, to a condition at least equal to that which existed before the work began, furnishing all labor and materials.

The grassed area disturbed by the work under this contract, whether by the Contractor or by any subcontractor, within or adjacent to the right-of-way of any state, county, city or other thoroughfare, public or private (except as required below), now in grass shall be shaped, seeded, and mulched in accordance with KYTC Standard Specifications for Road and Bridge Construction (latest edition).

Seed mixture shall be Mixture No. 1 as described in Seed Mixtures for Permanent Seeding. Acceptance of Seeding Section shall be amended to disallow compensations for any corrective seeding required by the Company's Project Manager.

All work fronting residential lots now in grass shall be shaped and seeded in accordance with KTCDOH Standard Specifications for Road and Bridge Construction (latest edition), but shall be amended to include removal of all rock from the sod bed. A minimum of six inches (6") of top soil being free of rock shall be placed prior to final restoration.

Reseeded areas that are located within ditches or on other sloped ground of 2:1 slopes or greater shall be covered with erosion control netting secured

with pins or stakes, or prefabricated matting containing mulch, seed and fertilizer. All ditch lines in residential lots shall be covered with erosion control netting secured with pins or stakes, or prefabricated matting containing mulch, seed and fertilizer.

A maximum of 1,500 lineal feet may be disturbed at one time prior to final grade. Restoration of the area is required before the Contractor is permitted to proceed.

Certain areas as approved by the Company's Project Manager or shown on the project drawings shall be sodded. Unless otherwise approved by the Company's Project Manager, no excavated material shall be placed on any paved roadway surface.

See Standard Drawing: 4300 in Appendix of Drawings.

11.7 Site Clean Up

Surplus pipeline materials, equipment, tools, and temporary structures shall be removed by the Contractor, and all dirt, rubbish and excess earth from excavations shall be hauled and disposed by the Contractor, all in a manner satisfactory to the Company.

The Contractor shall leave the site in presentable shape and in a condition at least equal to that which existed before the work began and in compliance with all restoration provisions of this specification.

12. WARRANTY

The provisions governing work covered by warranty are contained in **WARRANTIES** section in the **TERMS AND CONDITIONS**.

13. ADDITIONAL CONTRACT DEFINITIONS, ABBREVIATIONS, and TECHNICAL REFERENCES

13.1 Additional Contract Definitions

Right-of-Way – A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to a street, highway, or other public improvement.

Service Line – Any pipe, line, or conduit used or to be used to provide water service from a water main to the property line joint. A water service line shall be owned and maintained by the Company from the tap at the water main to the property line connection.

Non-storm sewers – Sanitary sewer, combined sewer, septic tank, or subsoil

treatment system.

Stone Classifications: Equivalencies:

Kentucky # 3 = Indiana # 2
Kentucky # 57 = Indiana # 8
Kentucky # 9 = Indiana # 3/8 pea
Kentucky D.G.A. = Indiana # 73

Structures – Bridges, culverts, catch basins, drop inlets, retaining walls, cribbing, manholes, end walls, sewers, service pipes, septic tanks, lateral fields, foundation drains, fences, swimming pools, and other features which may be encountered in the work and not classified herein.

Underground Facility – means any item which shall be buried or placed below ground for use in connection with the storage or conveyance of water, sewage, electronic, telephone or telegraph communications, electric energy, oil, gas or other substances, and shall include pipes, sewers, conduits, cables, valves, lines, wires, manholes, appurtenances, attachments and those portions of poles and their attachments below ground.

Utility – Pipe lines, conduits, ducts, transmission lines, overhead or underground wires, railroads, storm drains, sanitary sewers, irrigation facilities, street lighting, traffic signals, and fire alarm systems, and appurtenances of public utilities and those of private industry, businesses or individuals solely for their own use or use of their customers which are operated or maintained in, on, under, over or across public right-of-way or public or private easement.

13.2 Abbreviations:

AC – Asbestos Cement Pipe
ANSI – American National Standards Institute
ASTM – American Society of Testing Materials
AWWA – American Water Works Association
C – Temperature in degree Celsius
CFS – Cubic Feet Per Second
CI – Cast Iron Pipe
CL – Cement Lined Cast Iron Pipe
DEG - ° - Degree
DGA – Dense Graded Aggregate
DI – Ductile Iron Pipe
DIPS – Ductile Iron Pipe Size
DIW – Ductile Iron Pipe, Wrapped
DPW – Ductile Iron Pipe, Pressure Class 350, Wrapped
DR – Dimension Ratio
DVD – Digital Versatile Disc
SDR – Standard Dimension Ratio

F – Temperature in degree Fahrenheit
FPS – Feet Per Second
FT – ‘ – Feet
HDPE – High Density Polyethylene Pipe
HTH – Dry Chlorine (Calcium Hypochlorite)
IN – “ – Inch
IPS – Iron Pipe Size
KAR – Kentucky Administrative Regulations
KDOW – Kentucky Division of Water
KOSHA – Kentucky Occupational Safety and Health Association
KRS – Kentucky Revised Statutes
KTC – Kentucky Transportation Cabinet
KTCDOH - Kentucky Transportation Cabinet Department of Highways
MJ – Mechanical Joint
MSD – Louisville and Jefferson County Metropolitan Sewer District
MUTCD – Manual on Uniform Traffic Control Devices for Streets and Highways
NFPA – National Fire Protection Association
OSHA – Occupational Safety and Health Administration
PCB – Polychlorinated Biphenyls (toxic chemicals)
PPM – Parts per Million
PSF – Pounds per Square Foot
PSI – Pounds per Square Inch
PVC – Polyvinyl Chloride Pipe
USGS – United States Geological Survey
WQC – Water Quality Certification
% - per cent
@ - at
/ - per
= - equals

13.3 Technical References

Section:

- 1.6.1 Federal Highway Administration, Part VI (6) of the Manual on Uniform Traffic Control Devices (MUTCD).
- 1.6.4 Louisville / Jefferson County Metro Government Ordinance: Title VII (7), Traffic Code: Chapter 72 Parking Regulations.
- 1.6.5 KRS-220, 224 Soil Erosion and Sediment Control
Jefferson County Ordinance, Chapter 159, Erosion Prevention and Sediment Control
- 1.6.6 Kentucky Division of Water- General Water Quality Certification, Permit #12.
- 2.2 KOSHA – 803 KAR 2:300 – 2:320; 803 KAR 2:240 – 2:423
- 3.2.4 Recommended Standards for Water Works (Ten States Standards)

- Latest Edition
- 5.3 Blasting Regulations: KRS 351 and KAR 805.
 - 6.2.2 PVC Pipe – Design and Installation AWWA Manual No. M-23
 - 6.2.3 AWWA Standard Specification C 600 – Installation of Ductile Iron Water Mains and Their Appurtenances.
 - 6.4.1 AWWA Standard Specification C 111 – Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings.
AWWA Standard Specification C 900 – Polyvinyl Chloride (PVC) Pressure Pipe, 4”-12” for Water Distribution.
 - 6.7.1 AWWA Standard Specification C 105 – Polyethylene Encasement for Ductile-Iron Pipe Systems.
 - 7.1. ASTM D-1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort.
 - 7.4 Kentucky Transportation Cabinet Department of Highways Standard Specification for Road and Bridge Construction.
 - 8.2.2 401 KAR 8:150 –sections 4 (1) and 4 (2) Disinfection and Filtration.
 - 8.4 Louisville Water Company Best Management Practice and Procedures on Chlorinated Water Disposal, December 2001.

14. TECHNICAL DESIGN AND CONSTRUCTION STANDARDS

1 GENERAL DESIGN REQUIREMENTS

- 1.1 The Utility shall establish and maintain Technical Design and Construction Standards for all water main projects reviewed and constructed under the KDOW Plans Review Agreed Order.
- 1.2 The Utility shall ensure that the plans and specifications for each project meet or exceed all Technical Design and Construction Standards.
- 1.3 The Professional Engineer of Record shall ensure the plans and specifications for each project meet or exceed these Technical Design and Construction Standards.
- 1.4 **Hydraulics**
 - 1.4.1 The utility shall define existing and potential customer peak demand in the hydraulic analysis.
 - 1.4.2 The hydraulics analysis shall demonstrate the proposed water main projects can be flushed at least two and one half (2.5) feet per second (fps), while keeping system pressure above twenty (20) pounds per square inch (psi) within the pressure zone of the proposed project.

- 1.4.3 The hydraulic analysis shall demonstrate the proposed water main project maintains thirty (30) psi under peak demand.
- 1.4.4 The hydraulic analysis shall demonstrate that the proposed water main project does not drop ground level pressure in any part of the pressure zone below twenty (20) psi under all conditions of flow.
- 1.4.5 Pressure greater than or equal to thirty (30) psi shall be available on the discharge side of all water meters.

1.5 Hydrants

- 1.5.1 Fire hydrants shall only be installed on new or existing water mains designed to carry fire flows. The water main supplying the hydrant must have a diameter greater than or equal to six (6) inches and provide sufficient capacity to meet the required fire flow. (Louisville Water Technical Specifications Section 9.1)
- 1.5.2 An auxiliary valve shall be installed in all hydrant supply pipes. (Louisville Water Technical Specifications Section 9.1)
- 1.5.3 Hydrant drains shall not be connected to any sanitary sewer, combined sewer, septic tank or subsoil treatment system (hereinafter “non-storm sewer”) or any storm sewer or storm drain, and shall be located at a distance greater than ten (10) feet from any non-storm sewer. (Louisville Water Technical Specifications Section 9.2)

1.6 Water Main Valves

- 1.6.1 Water mains shall have a sufficient quantity of valves so that customer inconvenience and sanitary hazards will be minimized during repairs.
- 1.6.2 Urban areas as determined by the Utility shall include a valve spacing distance of less than or equal to five hundred feet (500') for commercial service areas and less than or equal to one thousand feet (1,000') for residential service areas. Valves should be located at roadway intersections where practical.
- 1.6.3 Rural areas as determined by the Utility shall include a valve spacing distance of less than one (1) mile. Valves should be located at roadway intersections where practical.

1.7 **Blow-Off or Flushing Connections**

- 1.7.1 For water mains that dead end, a fire hydrant or blow-off shall be required at the end of each six (6) inch or larger diameter water main and a flush hydrant or blow-off shall be required at the end of each water main that is less than six (6) inches in diameter.
- 1.7.2 Each blow-off, fire hydrant, or flush hydrant shall be sized so that velocity of greater than or equal to two and one half (2.5) feet per second (fps) can be achieved in the water main served by the blow-off or hydrant during flushing.
- 1.7.3 Flushing devices, blow-offs, or air relief valve shall not be connected to any non-storm sewer or any storm sewer or storm drain, and shall be located at a distance greater than ten (10) feet from any non-storm sewer. Chambers, pits, or manholes containing valves, blow-offs, meters, or other such appurtenances shall not be directly connected to any non-storm sewer or any storm sewer or storm drain. Such chambers, pits, or manholes shall be drained to absorption pits underground or to the surface of the ground where they are not subject to flooding by surface water. (Louisville Water Technical Specifications Section 8.3.2)

1.8 **Air Relief Valves**

- 1.8.1 Air relief valves or hydrants shall be installed at high points in water mains, where air can accumulate. Automatic air relief valves shall not be used in situations where manhole or chamber flooding may occur. (Louisville Water Technical Specifications Section 8.7, 8.7.1 & 8.7.2)
- 1.8.2 The open end of an air relief pipe from automatic valves shall be extended a distance of greater than or equal to one (1) foot above grade and provided with a screened, downward facing elbow or shall be an equivalent standard as determined by the best professional judgment of the Utility. The pipe from a manually operated valve shall be extended to the top of the pit. (Louisville Water Technical Specifications Section 8.7.1 & 8.7.2)

1.9 **Bedding and Backfill**

A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material shall be tamped in layers

around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. Stones found in the trench shall be removed for a depth greater than or equal to six (6) inches below the bottom of the pipe. (Louisville Water Technical Specifications Section 7.1)

1.10 **Minimum Depth**

All water mains shall be covered to a depth equal to or greater than forty-two (42) inches to prevent freezing. (Louisville Water Technical Specifications Section 7.1)

1.11 **Thrust Blocks**

All valves, tees, bends, plugs, and hydrants shall be provided with reaction blocking, tie rods, or joints designed to prevent movement. (Louisville Water Technical Specifications Section 6.14 & 9.1)

1.12 **Disinfection and Coliform Monitoring**

1.12.1 New or relocated water mains shall be thoroughly disinfected in accordance with 401 KAR Chapter 8:150 Section 4 (1) upon completion of construction and before being placed into service. To disinfect the new or relocated water mains, the Utility shall use chlorine or chlorine compounds (disinfectants) in such amounts as to produce an initial disinfectant concentration of at least fifty (50) ppm and a residual disinfection of greater than or equal to twenty-five (25) ppm at the end of twenty-four (24) hours. Follow the water main disinfection with thorough flushing and place the water main into service if, and only if, coliform monitoring applicable to the water main does not show the presence of coliform. If coliform is detected, repeat flushing of the water main and coliform monitoring. If coliform is still detected, repeat disinfection and flushing as if the water main has never been disinfected. Continue the described process until monitoring does not show the presence of coliform. (Louisville Water Technical Specifications Section 8.2.2 & 8.6)

1.12.2 The presence or absence of total coliform monitored by sampling and analysis shall be determined for the new or relocated water main(s) as needed. Take samples at connection points to existing water mains at one (1) mile intervals and at dead ends, without omitting any branch of the new or relocated water main. Sample bottles shall be clearly

identified as “special” construction tests. (Louisville Water Technical Specifications Section 8.6)

1.12.3 For new construction projects, the distribution system, using the most expedient method, shall maintain coliform test results. (Louisville Water Technical Specifications Section 8.6)

1.12.4 Chlorinated water resulting from disinfection of project components shall be disposed in a manner which will not violate 401 KAR 5:031. (Louisville Water Technical Specifications Section 8.4)

1.13 **Pressure Testing and Leak Detection**

The presence or absence of leaks monitored by physical testing shall be determined in all types of installed pipe as needed. Pressure testing and leakage testing shall be in accordance with the latest edition of AWWA Standard C600. (Louisville Water Technical Specifications Section 8.5)

1.14 **Water Main Construction and Material Standards**

1.14.1 Installation of water mains and appurtenances shall meet or exceed AWWA standards or manufacturer recommendations.

1.14.2 Pipes, fittings, valves, fire hydrants, and appurtenances shall meet or exceed the latest standards issued by the AWWA, ASTM, or NSF (if such standards exist). PVC and Polyethylene piping used must be certified to ANSI/NSF Standard 61.

1.15 **Sewer Crossings and Separation**

1.15.1 For the purpose of this standard, “non-storm sewer” is defined as any of the following: sanitary sewer, combined sewer, septic tank, or subsoil treatment system. (Louisville Water Technical Specifications Section 3.1.4)

1.15.2 Water mains shall be laid a horizontal distance of greater than or equal to ten (10) feet horizontally from any existing or proposed non-storm sewer. The horizontal distance shall be measured from outside diameter of the water main to outside diameter of the non-storm sewer. (Louisville Water Technical Specifications Section 3.1.4)

1.15.3 In cases where the Utility determines it is not practical to maintain a ten (10) foot separation, water mains may be installed closer to a non-storm sewer provided that a variance is obtained from the Cabinet's Division of Water and maintained with the project records. (Louisville Water Technical Specifications Section 3.1.4)

1.15.4 No deviation from the ten (10) foot separation is allowed if the non-storm sewer is a force main (sewer under pressure). (Louisville Water Technical Specifications Section 3.1.4)

1.15.5 When water mains and non-storm sewers cross:

1.15.5.1 Water mains shall be laid such that there shall be a vertical distance of greater than or equal to eighteen (18) inches between the water main and non-storm sewer. The vertical distance shall be measured from the outside diameter of the water main to the outside diameter of the non-storm sewer line. (Louisville Water Technical Specifications Section 3.1.4)

1.15.5.2 One (1) full length of the water pipe shall be located so that both joints of the water pipe will be as far from the non-storm sewer as practical as determined by the Utility. (Louisville Water Technical Specifications Section 3.1.4)

1.15.5.3 Special structural support for the water and non-storm sewer may be required. (Louisville Water Technical Specifications Section 3.1.4)

1.15.6 No water pipe shall pass through or come in contact with any part of a non-storm sewer manhole. (Louisville Water Technical Specifications Section 3.1.4)

1.16 **Water Mains Near Areas with Organic Contamination**

If water mains are installed or replaced in areas of organic contamination or in areas within two hundred (200) feet of underground or petroleum storage tanks, ductile iron or other non-permeable materials shall be used in all portions of the water main installation or replacement. (Louisville Water Technical Specifications Section 5.5.6)

1.17 **Asbestos-Cement Pipe (Transite Pipe)**

If the existing water main to be tapped is asbestos-cement pipe, then

the contractor shall conform to OSHA regulations governing the handling of hazardous waste during the process of tapping the asbestos-cement pipe. Pieces of asbestos-cement pipe resulting from the tap shall be double bagged, placed in a rigid container, and disposed of in an approved landfill. (Louisville Water Technical Specifications Section 6.7)

1.18 Subfluvial Pipe Crossings

1.18.1 For subfluvial pipe crossings, a floodplain construction permit will not be required pursuant to KRS 151.250 if the following requirements of 401 KAR 4:050 Section 2 are met:

1.18.1.1 No material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc. during construction of pipe crossings.

1.18.1.2 Crossing trenches shall be backfilled as closely as possible to the original contour.

1.18.1.3 All excess material resulting from construction displacement in a crossing trench shall be disposed of outside the flood plain.

1.18.1.4 For erodible channels, there shall be at least thirty (30) inches of backfill on top of all pipe or conduit points in the crossing.

1.18.1.5 For nonerodible channels, pipes or conduits in the crossing shall be encased on all sides by at least six (6) inches of concrete with all pipe or conduit points in the crossing at least six (6) inches below the original contour of the channel.

(Louisville Water Technical Specifications Section 1.3.6)

1.18.2 For subfluvial pipe crossings greater than fifteen (15) feet in width:

1.18.2.1 The pipe shall be of special construction having flexible, restrained, or welded watertight joints, and

1.18.2.2 Valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair. Valves shall be easily accessible and not be subject to flooding.

1.18.2.3 Permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples shall be made on each side of the valve closest to the supply source. (Louisville Water Technical Specifications Section 1.3.6)

1.19 Cross Connections

Cross connections shall not be allowed in accordance with 401 KAR 8:020. 401 KAR 8:020 (2) Cross-connections prohibited. All cross-connections shall be prohibited. The use of automatic devices, such as reduced pressure zone back flow preventers and vacuum breakers, may be approved by the cabinet in lieu of proper air gap separation. A combination of air gap separation and automatic devices shall be required if determined by the cabinet to be necessary due to the degree of hazard to public health. Every public water system shall determine if or where cross-connections exist and shall immediately eliminate them.

1.20 Project Approvals, Record Retention and Management requirements and stipulations under this Agreed Order are as follows:

- 1.20.1.1 All water main projects reviewed by the Utility require the preparation of plans and specifications stamped by a licensed Kentucky Professional Engineer (P.E.) who shall be the Engineer of Record for an individual project.
- 1.20.1.2 All water main projects submitted to the Utility for review shall be documented as reviewed and approved or denied by the Utility's Designated Plans Reviewer for the project.
- 1.20.1.3 All water main projects that the Utility designs internally or has designed by a contractor shall include plans and specifications stamped by a licensed Kentucky Professional Engineer (P.E.) who shall be the Engineer of Record for an individual project, and shall be reviewed and approved or denied by the Utility's Designated Plans Reviewer for the project.
- 1.20.1.4 All revisions to water main project plans previously approved by the Utility under the coverage of this Agreed Order shall be reviewed and approved or denied by the Utility's Designated Plans Reviewer for the project.

- 1.20.1.5 During construction, a set of Utility approved plans and specifications shall be available at the job site at all times. All work shall be performed in accordance with the Utility approved plans and specifications.
- 1.20.1.6 The Utility shall certify the water main projects has been constructed and tested in accordance with the approved plans and specifications. The Utility shall document and maintain a record of the certification of the project consistent with the recordkeeping requirements as stated in the Agreed Order.
- 1.20.1.7 The Utility shall define a project approval period not to exceed twelve (12) months, during which time the project construction shall begin.
- 1.20.1.8 Coverage under this Agreed Order does not relieve the Utility from the responsibility of obtaining any other approvals, permits, licenses required by the Cabinet and other state, federal and local agencies.
- 1.20.1.9 Project files and documentation, including water main project plans, location map, engineering calculations, and hydraulic information demonstrating regulatory compliance shall be retained for a period of not less than five (5) years from the completion of the project (in-service date).

2 Qualifications for Cabinet's Division of Water Agreed Order Projects

- 2.1 The Cabinet's Division of Water Agreed Order Projects will be limited to projects that meet the criteria identified in this section. Projects not meeting these qualifications shall be submitted to the Cabinet's Division of Water for review and approval.
 - 2.1.1 The water system shall have a valid Agreed Order.
 - 2.1.2 Projects with an overall length less than ten thousand (10,000) contiguous feet shall qualify. Two (2) or more adjoining projects shall be considered one (1) project for the purposes of this requirement.
 - 2.1.3 Projects consisting of water mains greater than or equal to three (3) inches in diameter or less than or equal to twelve (12) inches in diameter shall qualify. Additionally, circulating two (2) inch water main projects of less than five hundred (500) feet shall qualify if future extension from the line will

not occur and if the Utility determines that the two (2) inch line will benefit the overall system hydraulics and / or drinking water quality.

- 2.1.4 Projects qualifying for review and approval by the Utility may include water main projects with valves and / or hydrants as part of the design. However, projects, including those less than ten thousand (10,000) total linear feet, that include new construction or installation of treatment plants, storage tanks, chemical or pressure booster pumping stations, shall be reviewed by the Cabinet for final determination.
- 2.1.5 The water demand for the project shall not cause the Utility to exceed eighty-five (85) % of its rated or operational design capacity.
- 2.1.6 Projects funded in part or in full by the State Revolving Fund (SRF) or Congressional Special Appropriation Grants (SPAP) shall not qualify for review and approval by the Utility under the terms and conditions of this Agreed Order.
- 2.1.7 Projects under the jurisdiction of any regulating agency or funding agency other than the Kentucky Division of Water (external agencies), which in any way conflict with any regulatory process or funding process of these external agencies, shall not qualify for review and approval by the Utility under the terms and conditions of this Agreed Order.
- 2.1.8 The Utility is not authorized to approve any project that impacts any outstanding state resource water, outstanding national resource water, exceptional water, or cold water aquatic habitat as specified by 401 KAR Chapter 10.
- 2.1.9 Upon completion, projects shall meet all drinking water quality standards as set forth in 401 KAR Chapter 8.
- 2.1.10 The project meets all of the Technical Design and Construction Standards of the Cabinet's Division of Water Agreed Order and does not require any variances or deviations from the Technical Design and Construction Standards of the Cabinet's Division of Water Agreed Order.

APPENDIX OF STANDARD DRAWINGS
FOR 4” – 20” PIPELINE CONSTRUCTION

Standard
Drawing
Number

Section 1: General Requirements

4501 Creek Crossings with Concrete Cap (Sect. 1.3.5)

Section 3: Site

1000 Typical Utility Location Profiles (Sect.3.1)
3600 Typical Temporary Service from Fire Hydrant (Sect. 3.4.4 & 3.4.4.1)

Section 6: Installation

1500 Steel Casing Pipe and Casing Runners (Sect. 6.3)
1400 Typical Cast-in-Place Thrust Anchors (Sect.6.8 & 6.15)
1200 A-C Methods for Installing and Restoring Polyethylene Wrap (Sect. 6.9)

Section 7: Backfilling Procedures and Tamping

4300 Common Backfill and Lawn Restoration (Sect. 7.1, 7.4, 7.5, 7.6 & 11.6)

Section 8: Placing Water Main In Service

1601 Typical 2" Blow-off and Flushing Connection (Sect. 8.3.2)
1602 Typical 1" Manual Air Valve (For mains up to 20") (Sect. 8.3.2, 8.7 & 8.7.2)
1603 Typical Combined 2" Automatic and Manual Air Valve
(For mains 16" and larger) (Sect. 8.3.2, 8.7 & 8.7.1)
1608 Leak Detection By-Pass Meter for Underwater Crossings (Sect. 1.3.6 & 8.8)

Section 9: Fire Hydrant

2000 Typical Fire Hydrant Installation (Sect. 9)

Section 10: Service Work

3804 Method for Tapping Polyethylene Encased Pipe (Sect. 10.3.1)
3002 Typical Copper Service 1" and Smaller (Sect.10.3, 10.3.1, 10.3.2 & 10.6)
3003 Typical 1" Copper Service with Pressure Reducing Valve (Sect.10.3, 10.3.1, 10.3.2, 10.5 & 10.7)
3004 Typical 3/4" Copper Service with Pressure Reducing Valve (Sect.10.3, 10.3.1, 10.3.2, 10.6 & 10.7)
3400 Typical Double 1" Domestic/Irrigation Copper Service (Sect. 10.3, 10.3.1, 10.3.2)
3401 Typical Double Domestic/Irrigation 1" Copper Service With Pressure Reducing Valve (Sect. 10.3, 10.3.1, 10.3.2, 10.6 & 10.7)
3403 Typical ¾" Irrigation Retro Fit Copper Service (Sect. 10.3, 10.3.1, 10.3.2, & 10.6)
3404 Typical 1" Tandem 2-Way Domestic Copper Service (Sect. 10.3, 10.3.1, 10.3.2, & 10.6)
3420 Typical 1" 3-Way Domestic Copper Service (Sect. 10.3, 10.3.1, 10.3.2, & 10.6)

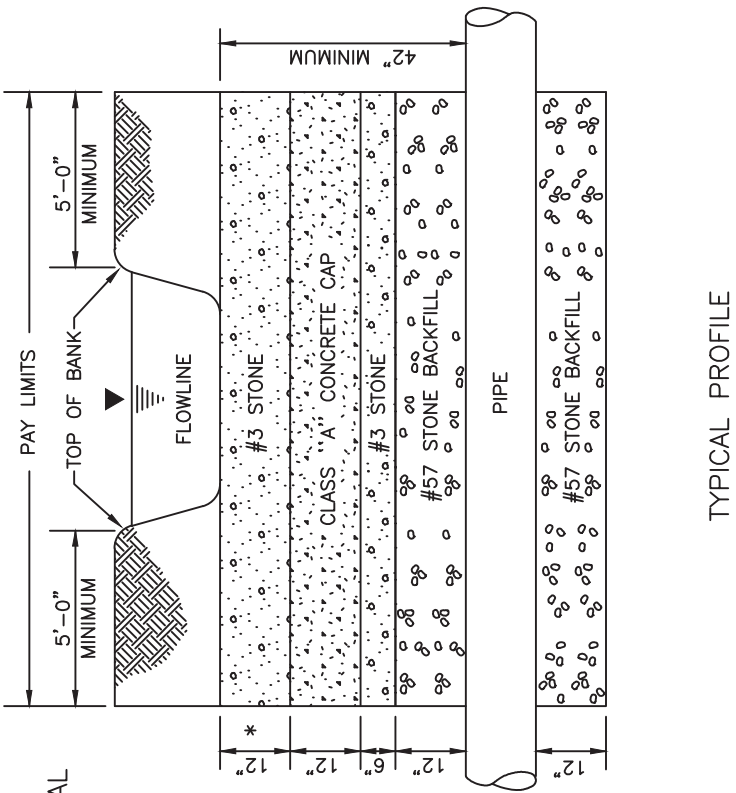
- 3430 Typical 1” 4-Way Domestic Copper Service (Sect. 10.3, 10.3.1, 10.3.2, & 10.6)
- 3200 Typical 1-1/2" or 2" Copper Service (Sect. 10.3, 10.3.1, 10.3.2, & 10.6)
- 3202 Typical 1-1/2" or 2" Copper Service with Pressure Reducing Valve (Sect. 10.3, 10.3.1, 10.3.2, 10.6 & 10.7)
- 3203A Typical Ductile Iron Domestic Service 4"x3” (Sect. 10.4, 10.4.1, 10.4.2, & 10.6)
- 3203 Typical Ductile Iron Domestic Service 4" and Larger (Sect. 10.4, 10.4.1, 10.4.2, & 10.6)
- 3601 Typical Fire Protection Service 4" and Larger (Sect. 10.4, 10.4.1, 10.4.2, & 10.6)
- 3440 Relocate Service (Sect.10.9)
- 3441 Renew Service (Sect. 10.10, 10.11)
- 3442 Transfer Service (Sect.10.16) and Discontinue Service (Sect.10.17)
- 3805 Service Sleeve Installation Detail (Sect.10)

Section 11: Restoration

- 4000 State of Kentucky Backfill and Paving Restoration (Sect. 11)
- 4100 Metro Louisville/Jefferson County Backfill and Paving Restoration (Sect. 11)
- 4400 Sidewalk/Backfill Detail (Sect. 11)
- 4410 Concrete Curb and Gutter Restoration Detail (Sect. 11.4)

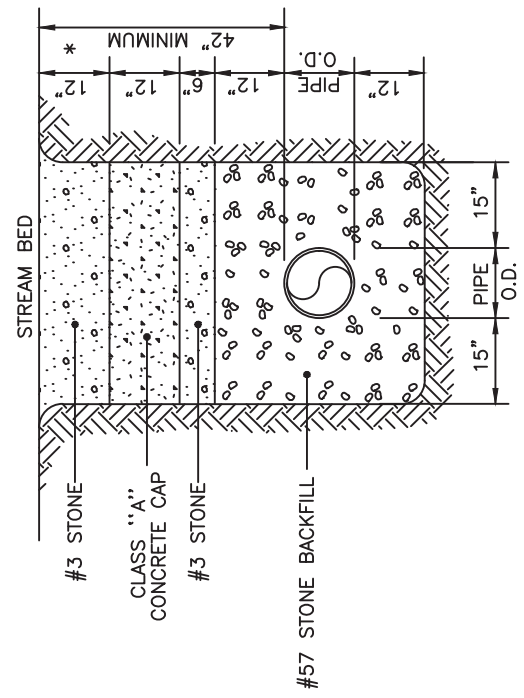
Other:

- 4600 Typical Master Meter Detail
- 5005 Valve Status Marker



*THE TOP 12" TO BE #3 STONE OR OTHER SELECT MATERIAL APPROVED BY THE KENTUCKY DIVISION OF WATER.

TYPICAL SECTION



STREAM CROSSING CONDITIONS

1. COMPLY WITH SECTION 1.3.5, SOIL EROSION AND SEDIMENT CONTROL.
2. THIS DETAIL APPLIES ONLY TO BLUE-LINE STREAMS, AS SHOWN ON THE PERTINENT USGS QUADRANGLE MAP.
3. BEST MANAGEMENT CONSTRUCTION PRACTICES MUST BE USED AT ALL TIMES DURING CONSTRUCTION. ADEQUATE SILT CONTROL MUST BE PLACED PRIOR TO THE START OF CONSTRUCTION AND MAINTAINED UNTIL VEGETATION IS ESTABLISHED.
4. REVEGETATE ALL DISTURBED GRASSY AREAS ON THE STREAM SLOPES. SOD STAKES MAY BE REQUIRED TO SECURE SOD ON THE STREAM BANKS.
5. MAINTAIN AT LEAST 3.5' OF BACKFILL AT THE STREAM CROSSING FROM THE TOP OF PIPE TO THE ORIGINAL STREAM BED ELEVATION.
6. OBTAIN APPROVAL FROM THE METROPOLITAN SEWER DISTRICT PRIOR TO THE START OF THE STREAM CROSSING WHEN CONSTRUCTION IS UNDER THEIR JURISDICTION.
7. THRUST BLOCKING SHALL BE CONSTRUCTED AT ALL BENDS.

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TIMOTHY KRAUS, P.E. - VICE PRESIDENT / CHIEF ENGINEER

STANDARD DRAWING
CREEK CROSSING
WITH CONCRETE CAP

DATE	MAY 2021	SCALE	NONE
DRAWING NO.	4501	SHEET	1 OF 1

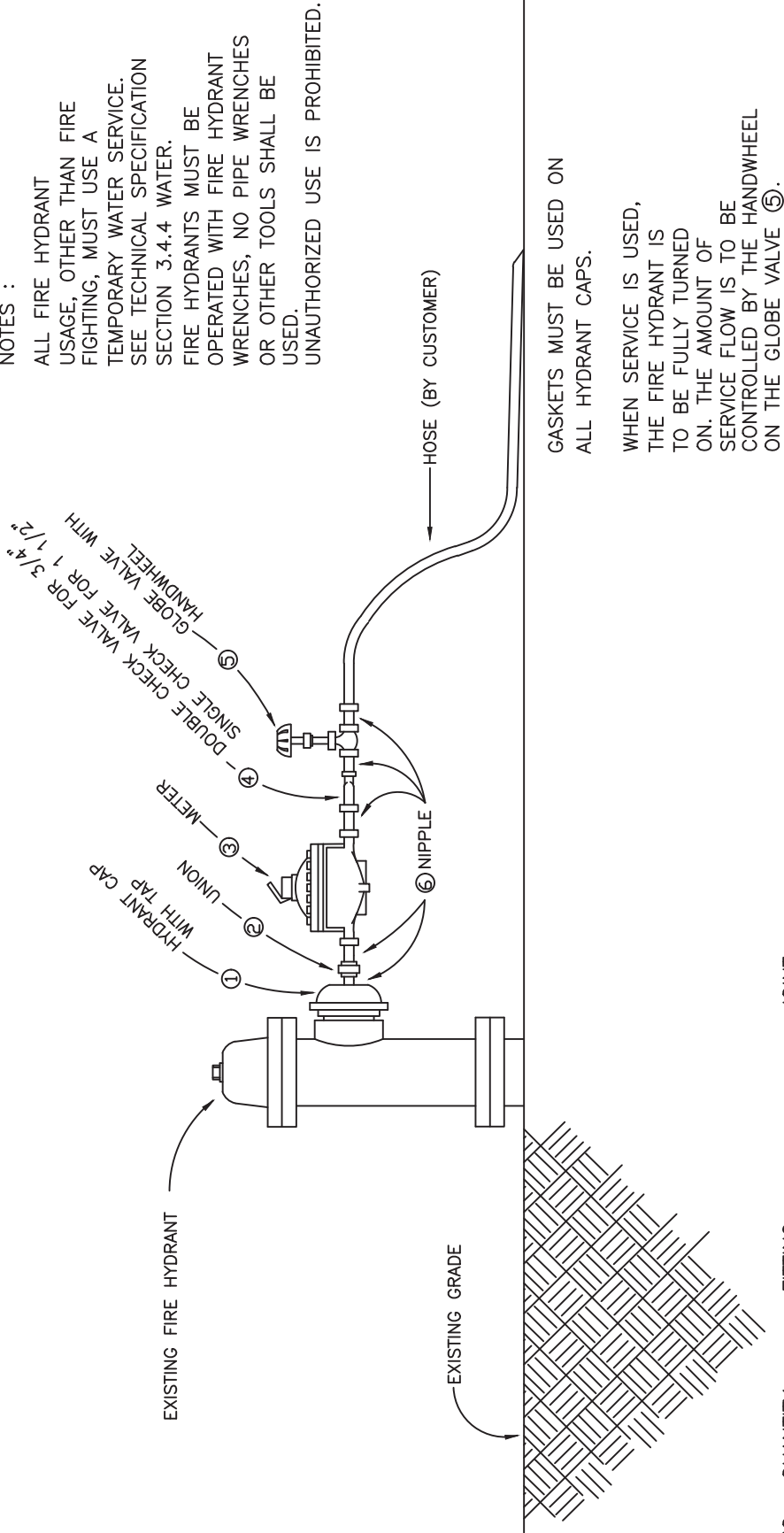


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STANDARD DRAWING		TYPICAL	
UTILITY LOCATION PROFILES			
DATE	AUGUST 2018	SCALE	NONE
DRAWING NO.	1000	SHEET	1 OF 1

NOTES :

ALL FIRE HYDRANT
USAGE, OTHER THAN FIRE
FIGHTING, MUST USE A
TEMPORARY WATER SERVICE.
SEE TECHNICAL SPECIFICATION
SECTION 3.4.4 WATER.
FIRE HYDRANTS MUST BE
OPERATED WITH FIRE HYDRANT
WRENCHES, NO PIPE WRENCHES
OR OTHER TOOLS SHALL BE
USED.
UNAUTHORIZED USE IS PROHIBITED.



GASKETS MUST BE USED ON
ALL HYDRANT CAPS.

WHEN SERVICE IS USED,
THE FIRE HYDRANT IS
TO BE FULLY TURNED
ON. THE AMOUNT OF
SERVICE FLOW IS TO BE
CONTROLLED BY THE HANDWHEEL
ON THE GLOBE VALVE (5).

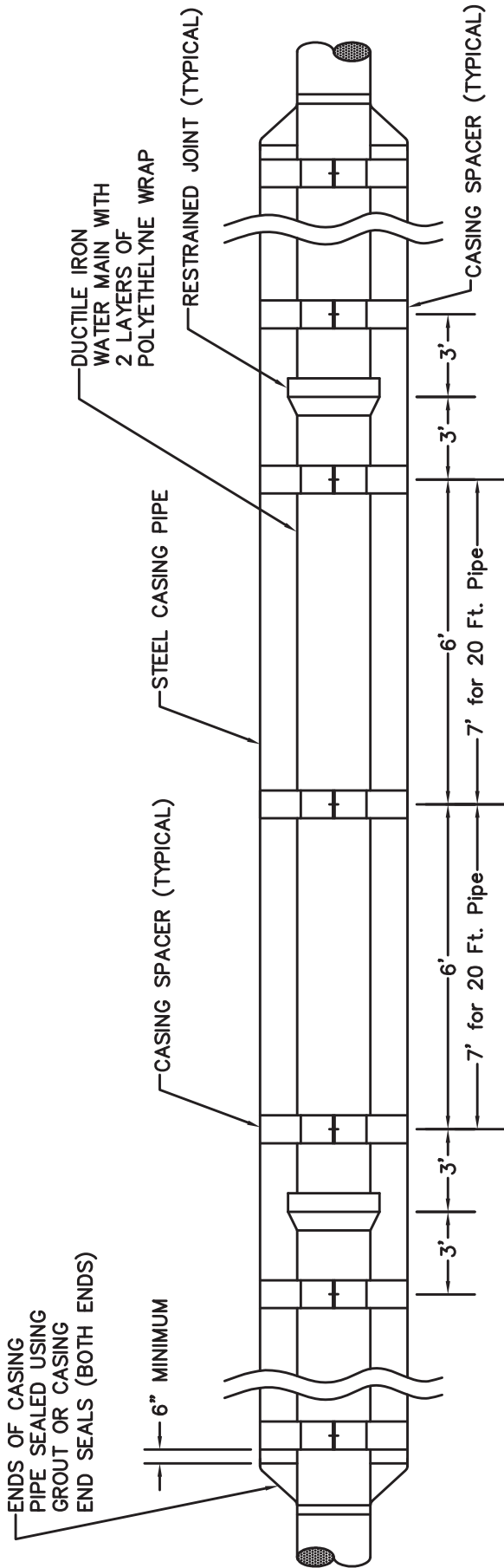
NO.	QUANTITY	FITTING	JOINT	SERVICE SIZES
①	1	Hydrant Cap w/Gasket & Tap	Female Threaded	3/4" 1-1/2" 4"x1-1/2"
②	1	Union	Female Threaded	3/4" 1-1/2"
③	1	Meter	Female Threaded	3/4" 1-1/2"
④	1	Check Valve	Flanged with Adapter	3/4" 1-1/2"
⑤	1	Globe Valve w/Handwheel	Female Threaded	3/4" 1-1/2"
⑥	5	Nipple	Female Threaded	3/4" 1-1/2"
			Inlet-Male Threaded	3/4" 1-1/2"
			Outlet-Male Threaded	3/4" 1-1/2"

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STANDARD DRAWING

TYPICAL TEMPORARY SERVICE
FROM FIRE HYDRANT
3/4" OR 1-1/2"

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3600	SHEET	1 OF 1



- NOTES:
- 1) STEEL CASING TO EXTEND A MINIMUM OF FIVE (5) FEET BEYOND THE EDGE OF PAVEMENT.
 - 2) THREE (3) CASING SPACERS PER EACH PIPE LENGTH (MINIMUM). WITH ONE CASING SPACER WITHIN 3 FT. OF EACH PIPE END.
 - 3) WATER MAIN SHALL HAVE RESTRAINED JOINTS WITHIN CASING PIPE. (SEE SECT. 6.3)

CASING PIPE SIZES		
WATER MAIN PIPE SIZE (INCHES)	CASING PIPE SIZE (INCHES)	CASING THICKNESS (INCHES)
4	12	0.375
6	16	0.375
8	16	0.375
12	24	0.375
16	30	0.500
20	36	0.500

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STANDARD DRAWING
STEEL CASING PIPE
AND CASING SPACERS

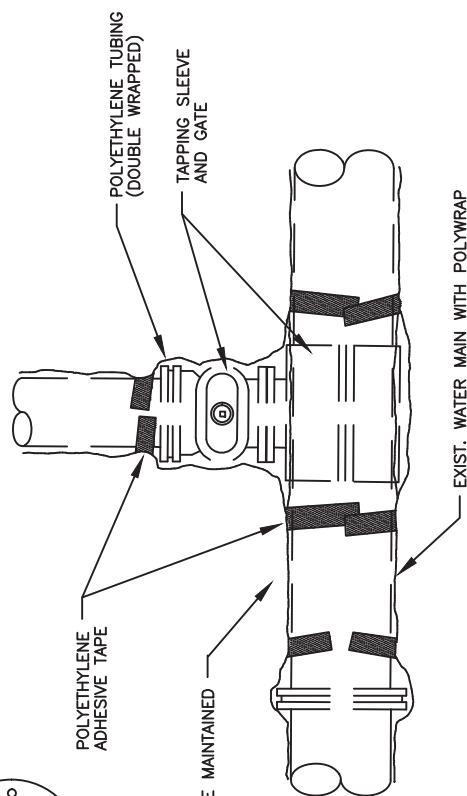
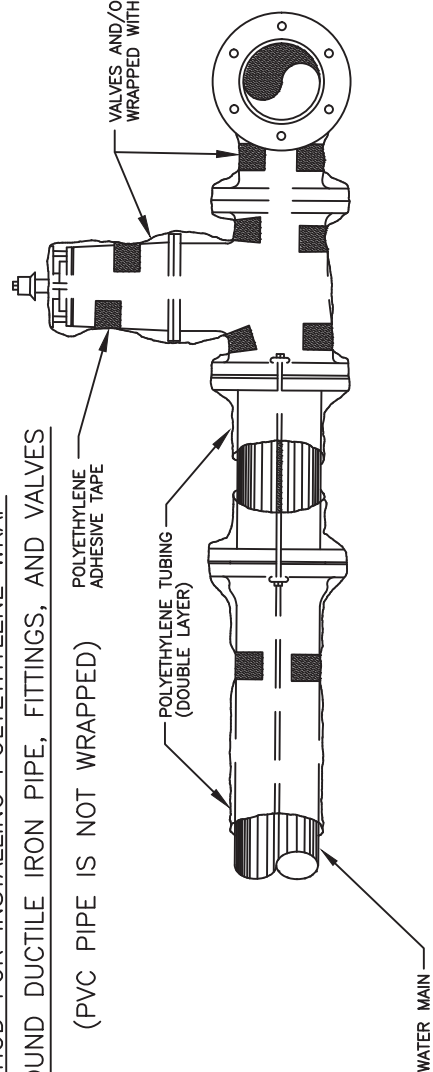
DATE	AUGUST 2018	SCALE	NONE
DRAWING NO.	1500	SHEET	1 of 1

LOUISVILLE WATER COMPANY 550 S. 3RD STREET • LOUISVILLE, KENTUCKY 40202 • (502) 569-3600 SPENCER W. BRUCE, P.E. - PRESIDENT TIMOTHY KRAUS, P.E. - VICE PRESIDENT / CHIEF ENGINEER	
STANDARD DRAWING	
TYPICAL CAST-IN-PLACE CONCRETE THRUST BLOCKING	
DATE	JULY 2021
DRAWING NO.	1400
SCALE	NONE
SHEET	1 OF 1

NOTE:

1. ALL DUCTILE AND GRAY IRON PIPE AND APPURTENANCES SHALL BE DOUBLE POLYWRAPPED.
2. CARE SHALL BE TAKEN TO AVOID DAMAGING POLYWRAP. ANY DAMAGE OR TORN POLYETHYLENE WRAP MUST BE REPAIRED WITH POLYETHYLENE TAPE AND ADDITIONAL POLYETHYLENE WRAP IF NECESSARY TO PROVIDE TWO (2) LAYERS OF PROTECTION.
3. CONCRETE THRUST BLOCKING MUST BE ALLOWED TO CURE, OR PROTECTED AS APPROVED BY THE PROJECT MANAGER, BEFORE BACKFILLING.
4. ALL CONCRETE SHALL BE 3,500psi FROM A COMMERCIAL PLANT, OR SHALL BE AN ON-SITE MIXTURE PREVIOUSLY APPROVED BY THE PROJECT MANAGER.
5. ALL FITTINGS INVOLVED WITH PVC PIPE SHALL HAVE A CONCRETE SUPPORT BLOCK, IN ADDITION TO THE PERTINENT THRUST BLOCK.
6. SIZING OF THRUST BLOCKING ASSUME AN ALLOWABLE SOIL BEARING CAPACITY OF 3,000 PSF.
7. REINFORCING STEEL ANCHORS USED IN THRUST BLOCKING SHALL BE GRADE 60 AND EPOXY COATED.
8. CONCRETE FOR THRUST BLOCKING MUST EXTEND TO AND BE PLACED AGAINST UNDISTURBED EARTH UNLESS DIRECTED OTHERWISE BY THE COMPANY'S PROJECT MANAGER OR INSPECTOR.
9. RODS USED FOR THRUST RESTRAINT ARE TO BE USED ONLY AS TEMPORARY THRUST RESTRAINT. THRUST ANCHORS MUST BE POURED FOR ALL FITTINGS AS DETAILED IN THIS DRAWING. MECHANICAL RESTRAINT MAY BE USED IN PLACE OF RODS AT THE DISCRETION OF THE COMPANY'S PROJECT MANAGER.

(PVC PIPE IS NOT WRAPPED)



METHOD FOR RESTORING POLYETHYLENE WRAP WHEN TAPPING WATER MAINS

NOTES:

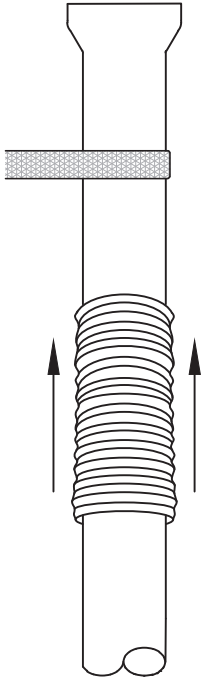
- 1) ANY DAMAGE OR TORN POLYETHYLENE WRAP MUST BE REPAIRED WITH POLYETHYLENE ADHESIVE TAPE AND ADDITIONAL POLYETHYLENE WRAP IF NECESSARY TO PROVIDE TWO LAYERS OF PROTECTION.
- 2) PIPE SHALL NOT BE WRAPPED FOR MORE THAN FIVE (5) DAYS IN ADVANCE OF PLACEMENT INTO THE TRENCH.
- 3) ALL DUCTILE IRON TEES, VALVES AND FITTINGS ON PVC PIPE SHALL BE DOUBLE WRAPPED WITH POLYETHYLENE AND ENDS FASTENED SECURELY ON PVC PIPE.

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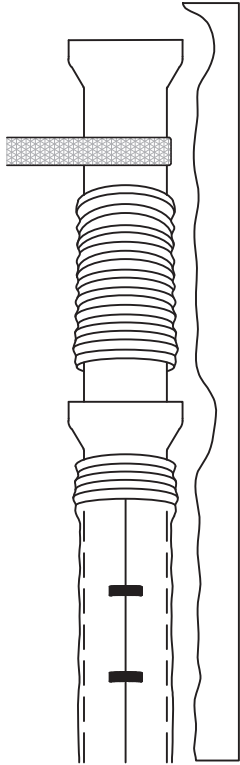
STANDARD DRAWING

METHODS FOR INSTALLING AND RESTORING POLYETHYLENE WRAP

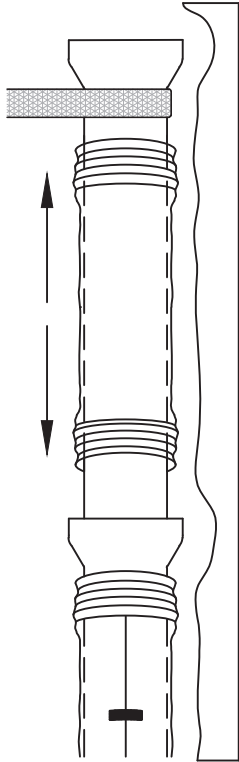
DATE	MAY 2021	SCALE	NONE
DRAWING NO.	1200-A	SHEET	1 OF 3



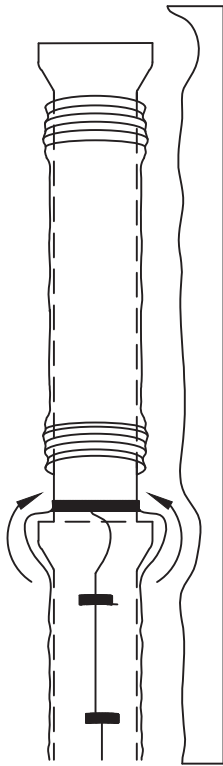
STEP 1.
CUT A SECTION OF POLYETHYLENE TUBE APPROXIMATELY TWO FEET LONGER THAN THE PIPE SECTION. REMOVE ALL LUMPS OF CLAY, MUD, CINDERS, OR OTHER MATERIAL THAT MIGHT HAVE ACCUMULATED ON THE PIPE SURFACE DURING STORAGE. SLIP THE POLYETHYLENE TUBE AROUND THE PIPE, STARTING AT THE SPIGOT END. BUNCH THE TUBE ACCORDIAN-FASHION ON THE END OF THE PIPE. PULL BACK THE OVERHANGING END OF THE TUBE UNTIL IT CLEARS THE PIPE END.



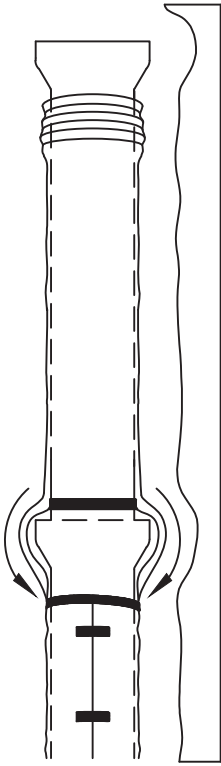
STEP 2.
DIG A SHALLOW BELL HOLE IN THE TRENCH BOTTOM AT THE JOINT LOCATION TO FACILITATE INSTALLATION OF THE POLYETHYLENE TUBE. LOWER THE PIPE INTO THE TRENCH AND MAKE UP THE PIPE JOINT WITH THE PRECEDING SECTION OF PIPE.



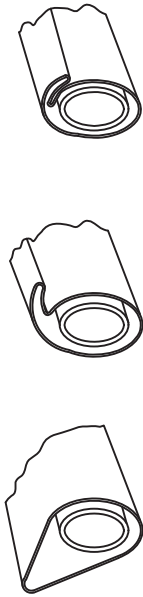
STEP 3.
MOVE THE CABLE TO THE BELL END OF THE PIPE AND LIFT THE PIPE SLIGHTLY TO PROVIDE ENOUGH CLEARANCE TO EASILY SLIDE THE TUBE. SPREAD THE TUBE OVER THE ENTIRE BARREL OF THE PIPE. NOTE: MAKE SURE THAT NO DIRT OR THE BEDDING MATERIAL BECOMES TRAPPED BETWEEN THE WRAP AND THE PIPE.



STEP 4.
MAKE THE OVERLAP OF THE POLYETHYLENE TUBE BY PULLING BACK THE BUNCHED POLYETHYLENE FROM THE PRECEDING LENGTH OF PIPE AND SECURING IT IN PLACE. NOTE: THE POLYETHYLENE MAY BE SECURED IN PLACE BY USING POLYTAPE.



STEP 5.
OVERLAP THE SECURED TUBE END WITH THE TUBE END OF THE NEW PIPE SECTION. SECURE THE NEW TUBE END IN PLACE WITH POLYTAPE.

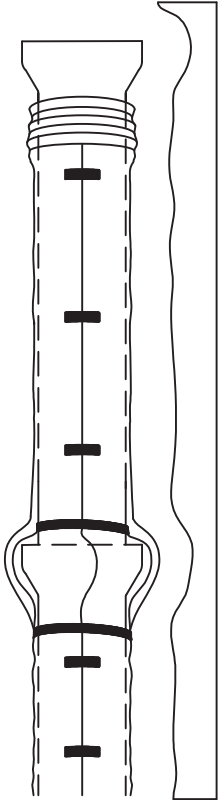


STEP 6.
TAKE UP THE SLACK IN THE TUBE ALONG THE BARREL OF THE PIPE TO MAKE A SNUG, BUT NOT TIGHT, FIT. FOLD EXCESS POLYETHYLENE BACK OVER THE TOP OF THE PIPE AND SECURE WITH POLYTAPE.

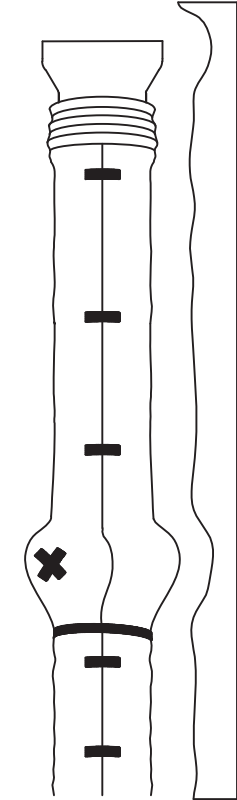
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STANDARD DRAWING
METHODS FOR
INSTALLING AND RESTORING
POLYETHYLENE WRAP

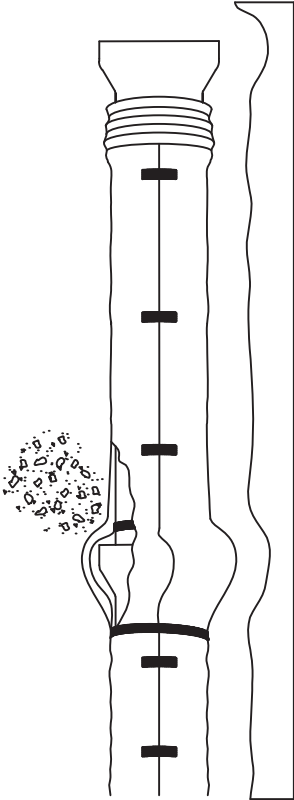
DRAWING NO.	DATE	MAY 2021	SCALE	NONE	SHEET	2	OF	3
1200-B								



STEP 7.
SECURE THE FOLD AT SEVERAL LOCATIONS ALONG THE PIPE BARREL (APPROXIMATELY EVERY THREE FEET) WITH POLYTAPE.



STEP 8.
REPAIR ALL SMALL RIPS, TEARS, OR OTHER TUBE DAMAGE WITH ADHESIVE TAPE. IF THE POLYETHYLENE IS BADLY DAMAGED, REPAIR THE DAMAGED AREA WITH A SHEET OF POLYETHYLENE AND SEAL THE EDGES OF THE REPAIR WITH POLYTAPE.



STEP 9.
CAREFULLY BACKFILL THE PIPE ACCORDING TO LOUISVILLE WATER COMPANY'S TECHNICAL SPECIFICATIONS AND STANDARD DRAWINGS FOR 4-20" PIPELINE CONSTRUCTION, SECTION 7. BACKFILLING PROCEDURE AND TAMPING, TO PREVENT DAMAGE DURING BACKFILLING, ALLOW ADEQUATE SLACK IN THE TUBE AT THE JOINT. BACKFILL SHOULD BE FREE OF CINDERS, ROCKS, BOULDERS, NAILS, STICKS, OR OTHER MATERIALS THAT MIGHT DAMAGE THE POLYETHYLENE. AVOID DAMAGING THE POLYETHYLENE WHEN USING TAMPING DEVICES.

TABLE FOR MINIMUM FLATTENED
POLYETHYLENE TUBE WIDTHS

NOMINAL PIPE SIZE (INCHES)	RECOMMENDED POLYETHYLENE FLAT TUBE WIDTH (INCHES)
4	24
6	24
8	24
12	30
16	36
20	48

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STANDARD DRAWING

METHODS FOR

INSTALLING AND RESTORING

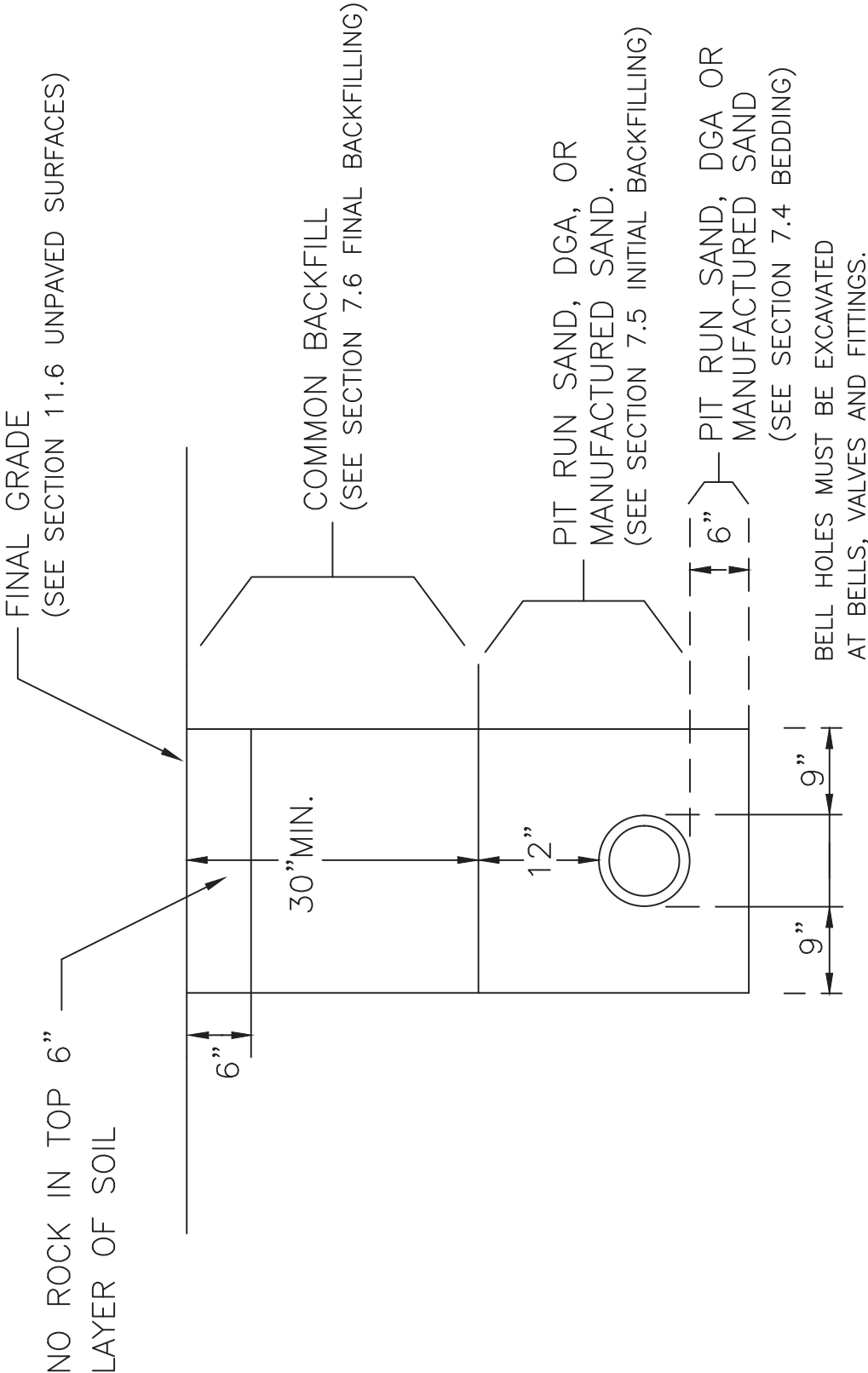
POLYETHYLENE WRAP

DATE: MAY 2021

DRAWING NO.: 1200-C

SCALE: NONE

SHEET: 3 OF 3



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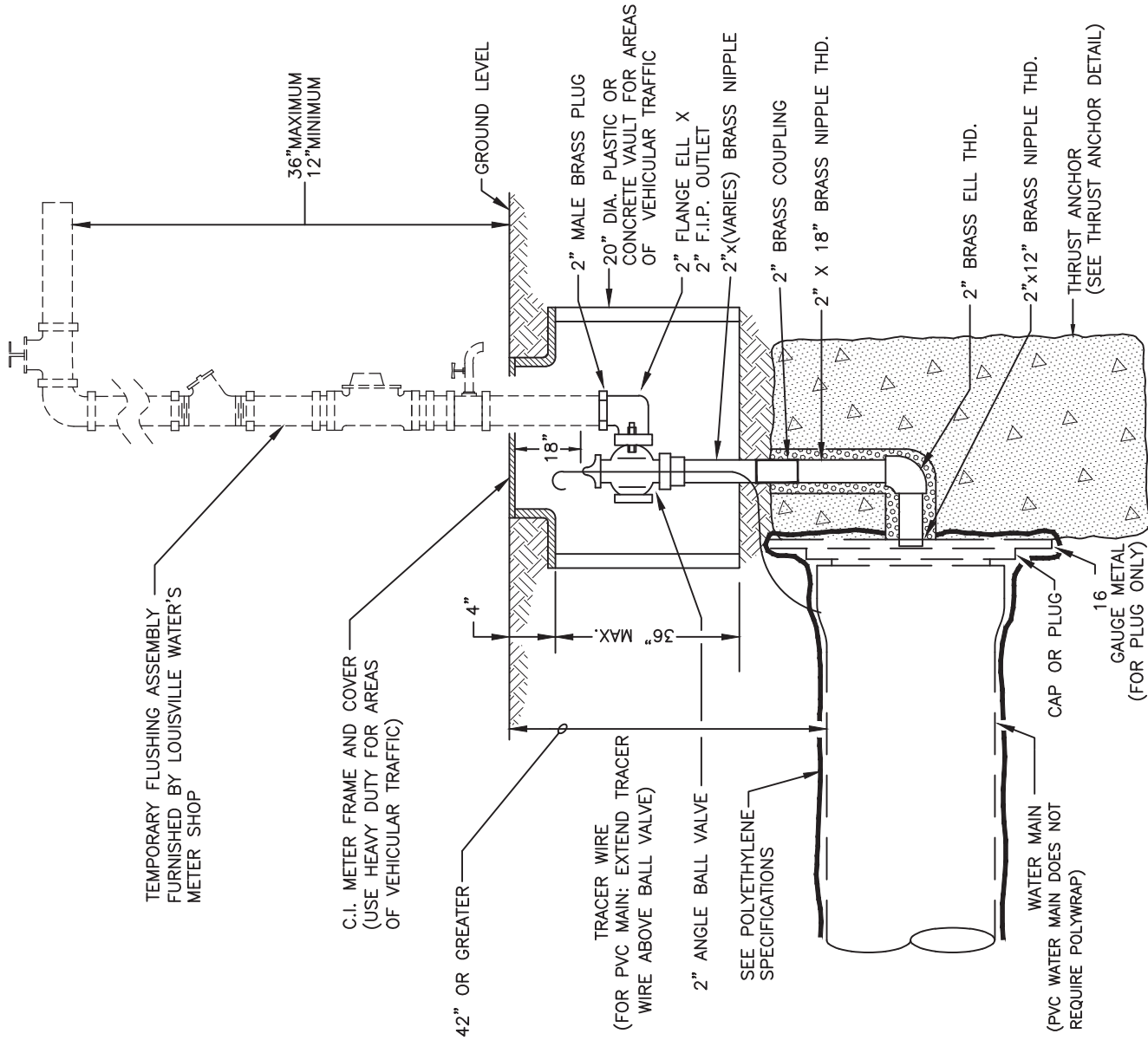
STANDARD DRAWING

COMMON BACKFILL AND
LAWN RESTORATION

DATE	MAY 2021	SCALE	NONE
DRAWING NO.	4300	SHEET	1 OF 1

NOTES:

1. CAUTION: DO NOT CONNECT PRESSURE TEST EQUIPMENT TO TEMPORARY FLUSHING ASSEMBLY.
2. 1-1/2" TURBINE METER AND 2" DUAL CHECK VALVE ARE TO BE INSTALLED AFTER PIGGING OPERATIONS. A 2" HOSE IS TO BE USED DURING ALL FLUSHING OPERATIONS.
3. 8" AND LARGER WATER MAINS MAY REQUIRE LARGER THAN A 2" FLUSHING OUTLET TO MEET THE KDOV 2.5 F.P.S. FLUSHING REGULATION.
4. PERMANENT PLUGS SHALL NOT BE INSTALLED ON PVC MAINS; ONLY MECHANICAL JOINT CAPS WILL BE ALLOWED.

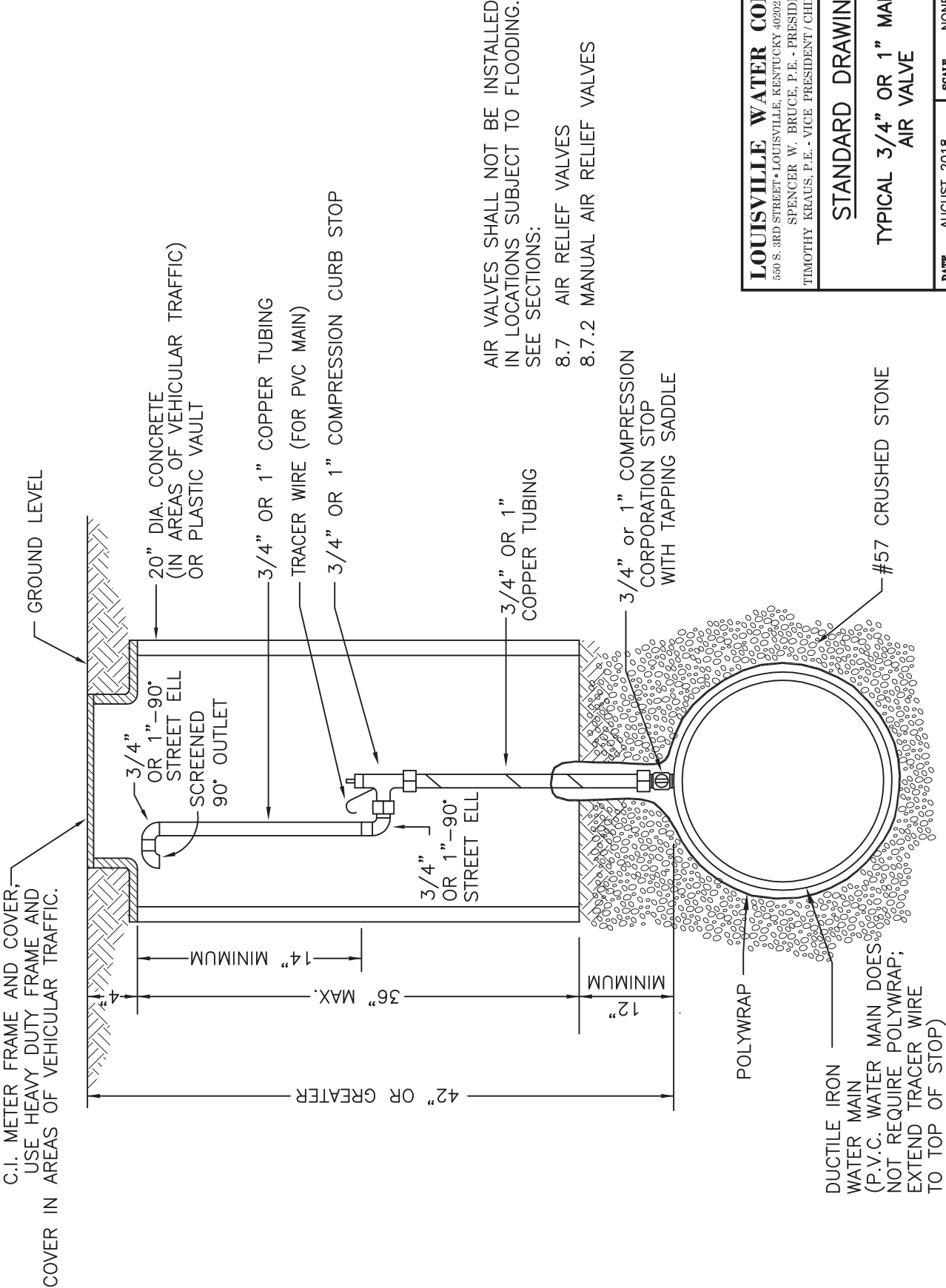


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STANDARD DRAWING

TYPICAL 2" BLOW-OFF
AND FLUSHING CONNECTION

DATE	MAY 2021	SCALE	NONE
DRAWING NO.	1601	SHEET	1 OF 1

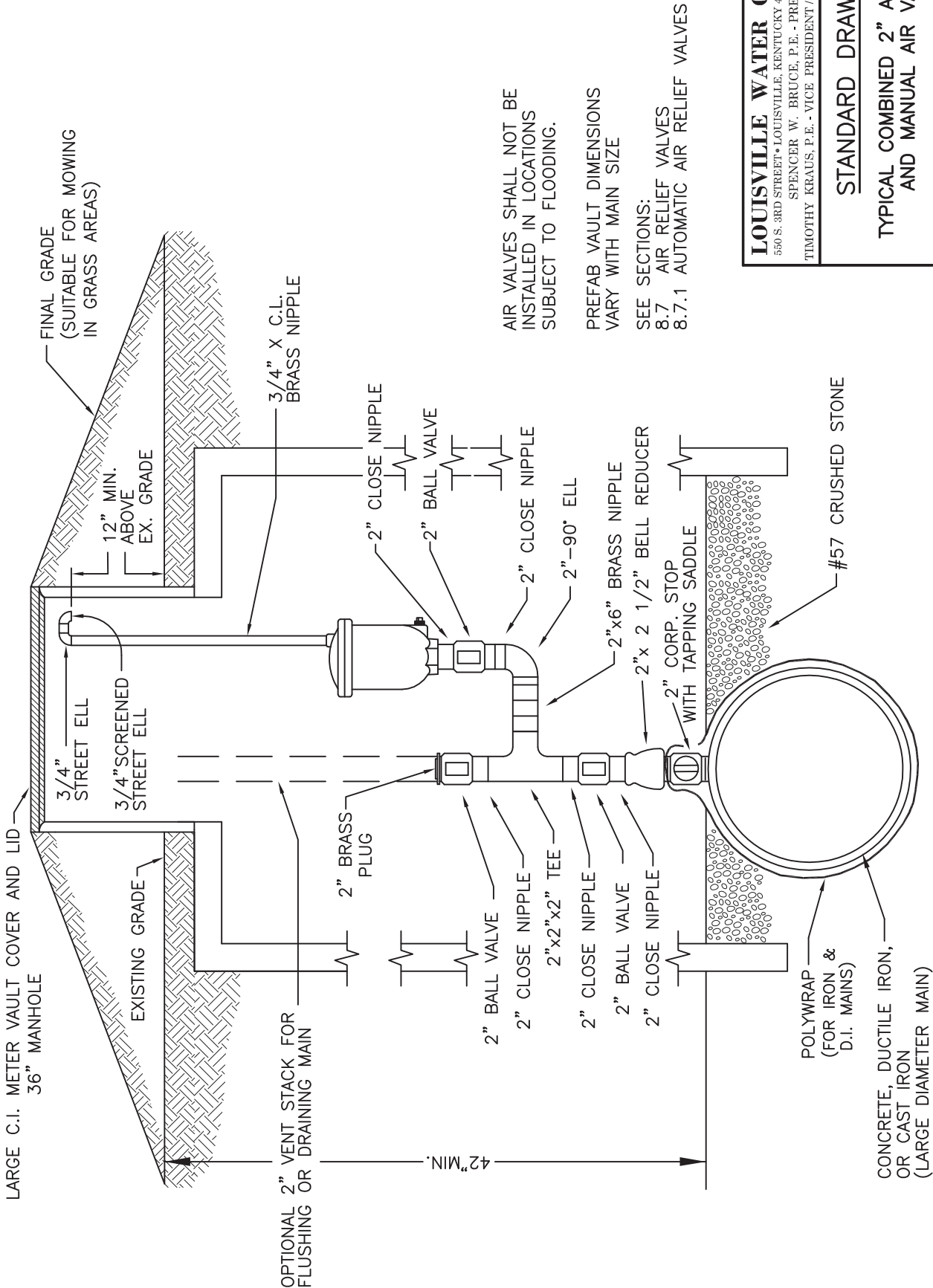


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STANDARD DRAWING

TYPICAL 3/4" OR 1" MANUAL
AIR VALVE

DATE	AUGUST 2018	SCALE	NONE
DRAWING NO.	1602	SHEET	1 of 1

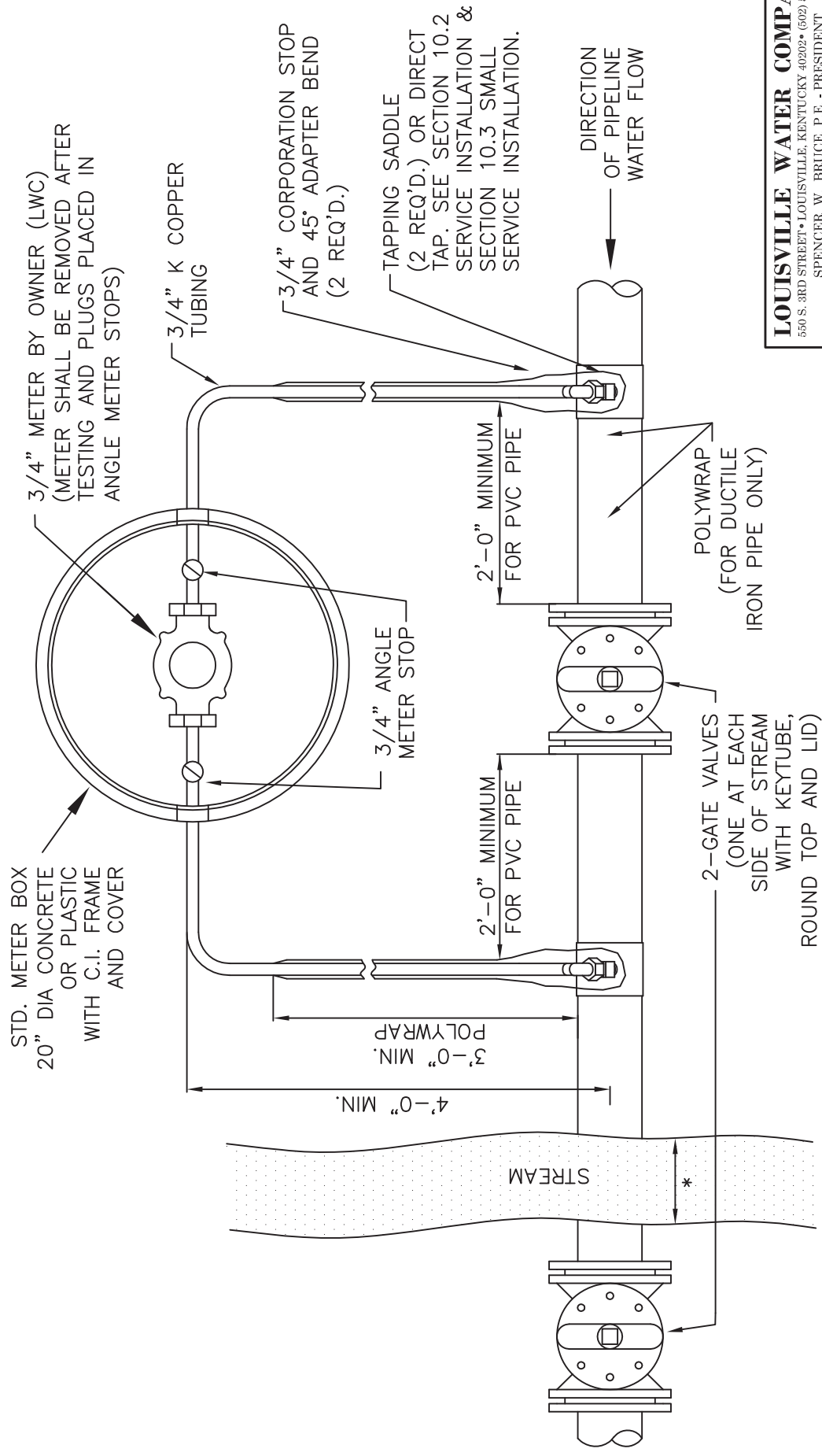


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STANDARD DRAWING

TYPICAL COMBINED 2" AUTOMATIC
AND MANUAL AIR VALVE

DATE	AUGUST 2018	SCALE	NONE
DRAWING NO.	1603	SHEET	1 OF 1



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STANDARD DRAWING
LEAK DETECTION
BY-PASS METER

DATE	FEBRUARY 2020	SCALE	NONE
DRAWING NO.	1608	SHEET	1 of 1

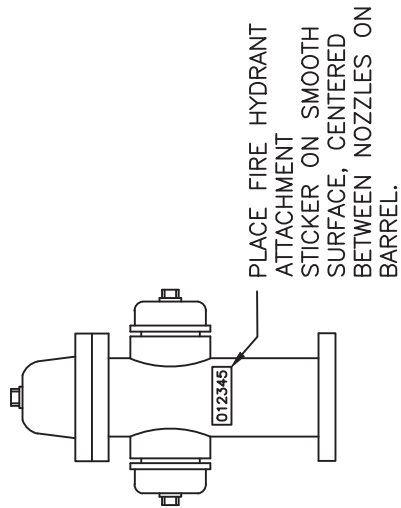
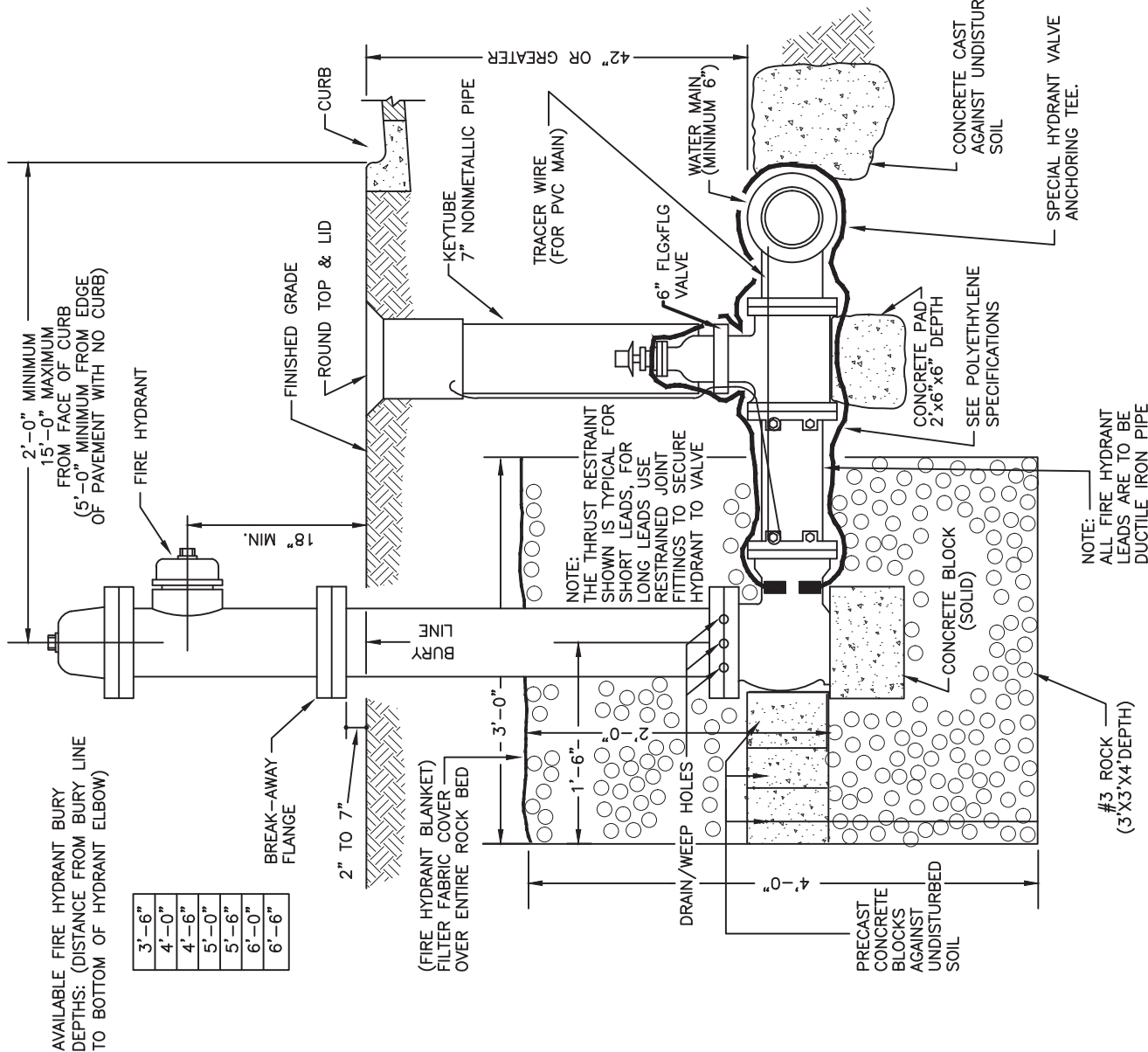
NOTE:

LOUISVILLE WATER COMPANY SUPPLIES HYDRANTS OF VARIOUS BURY DEPTHS. EXTENSION KITS SHALL NOT BE USED FOR NEW INSTALLATIONS. UNLESS APPROVED BY THE LOUISVILLE WATER COMPANY PROJECT MANAGER.

WHEN TURNING FIRE HYDRANT OFF, ALLOW TIME FOR FIRE HYDRANT TO DRAIN BEFORE REPLACING NOZZLE CAPS.

DO NOT INSTALL POLYWRAP ON HYDRANT BARREL. DO NOT COVER HYDRANT DRAIN/WEEP HOLES.

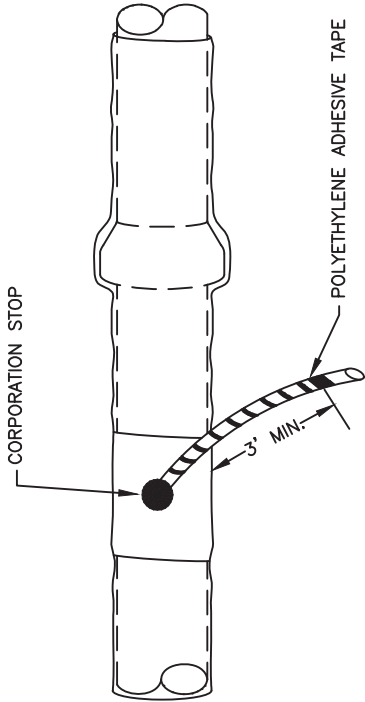
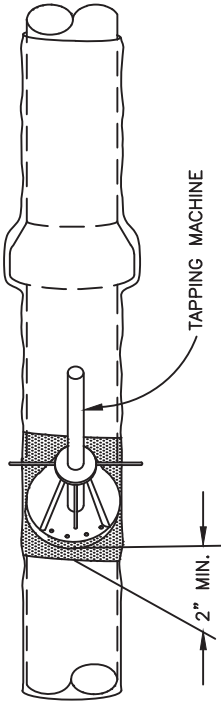
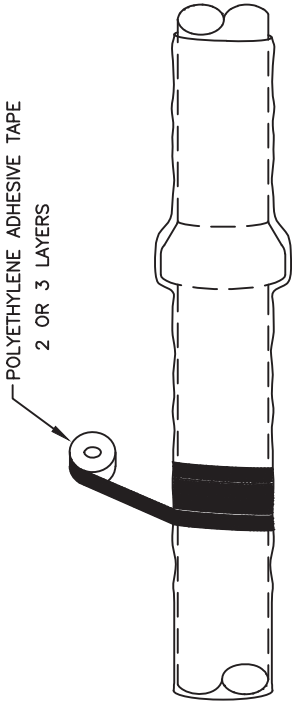
ALL HYDRANTS SHALL BE YELLOW WITH THE EXCEPTION OF WHEN INSTALLED WITHIN THE LOUISVILLE FIRE DEPARTMENT'S DISTRICT. THOSE HYDRANTS SHALL BE ORANGE.



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STANDARD DRAWING
TYPICAL
FIRE HYDRANT INSTALLATION

DATE	MAY 2021	SCALE	NONE
DRAWING NO.	2000	SHEET	1 OF 1



- OPENINGS FOR BRANCHES, SERVICE TAPS, BLOW OFFS, AIR VALVES, AND SIMILAR APPURTENANCES SHALL BE MADE BY :
- 1.) WRAPPING 2 OR 3 LAYERS OF POLYETHYLENE ADHESIVE TAPE COMPLETELY AROUND THE PIPE TO COVER THE AREA WHERE THE TAPPING MACHINE AND CHAIN WILL BE MOUNTED, EXTENDING A MINIMUM OF 2" BEYOND THE MOUNTING SURFACE.
 - 2.) MOUNT THE TAPPING MACHINE ON THE PIPE AREA COVERED BY THE TAPE. MAKE THE TAP AND INSTALL THE CORPORATION STOP DIRECTLY THROUGH THE TAPE AND POLYETHYLENE.
 - 3.) INSPECT THE ENTIRE CIRCUMFERENTIAL AREA FOR DAMAGE AND MAKE ANY NECESSARY REPAIRS WITH TAPE.
 - 4.) ON HOUSE SERVICES, TO MINIMIZE THE POSSIBILITY OF DISSIMILAR METAL CORROSION AT SERVICE CONNECTIONS, WRAP THE CORPORATION STOP AND A MINIMUM CLEAR DISTANCE OF THREE (3) FEET OF THE COPPER SERVICE WITH POLYETHYLENE ADHESIVE TAPE.
 - 5.) SEE SECTION 10.3.1 & 10.4.1

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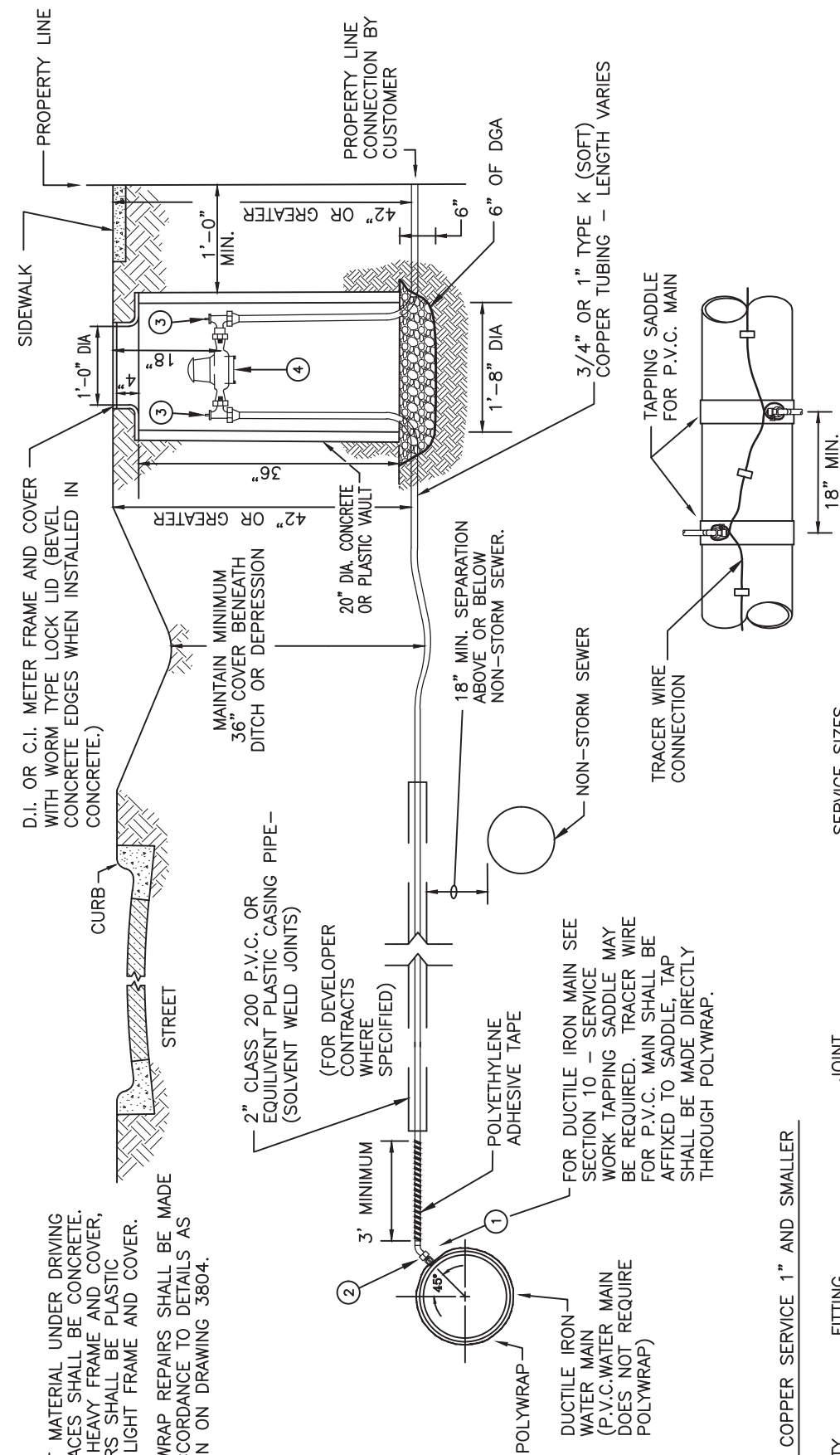
STANDARD DRAWING

METHOD FOR
TAPPING POLYETHYLENE
ENCASED PIPE

DATE	MAY 2021	SCALE	NONE	SHEET	1	OF	1
DRAWING NO.	3804						

NOTE:

- 1) VAULT MATERIAL UNDER DRIVING SURFACES SHALL BE CONCRETE. WITH HEAVY FRAME AND COVER, OTHERS SHALL BE PLASTIC WITH LIGHT FRAME AND COVER.
- 2) POLYWRAP REPAIRS SHALL BE MADE IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING 3804.



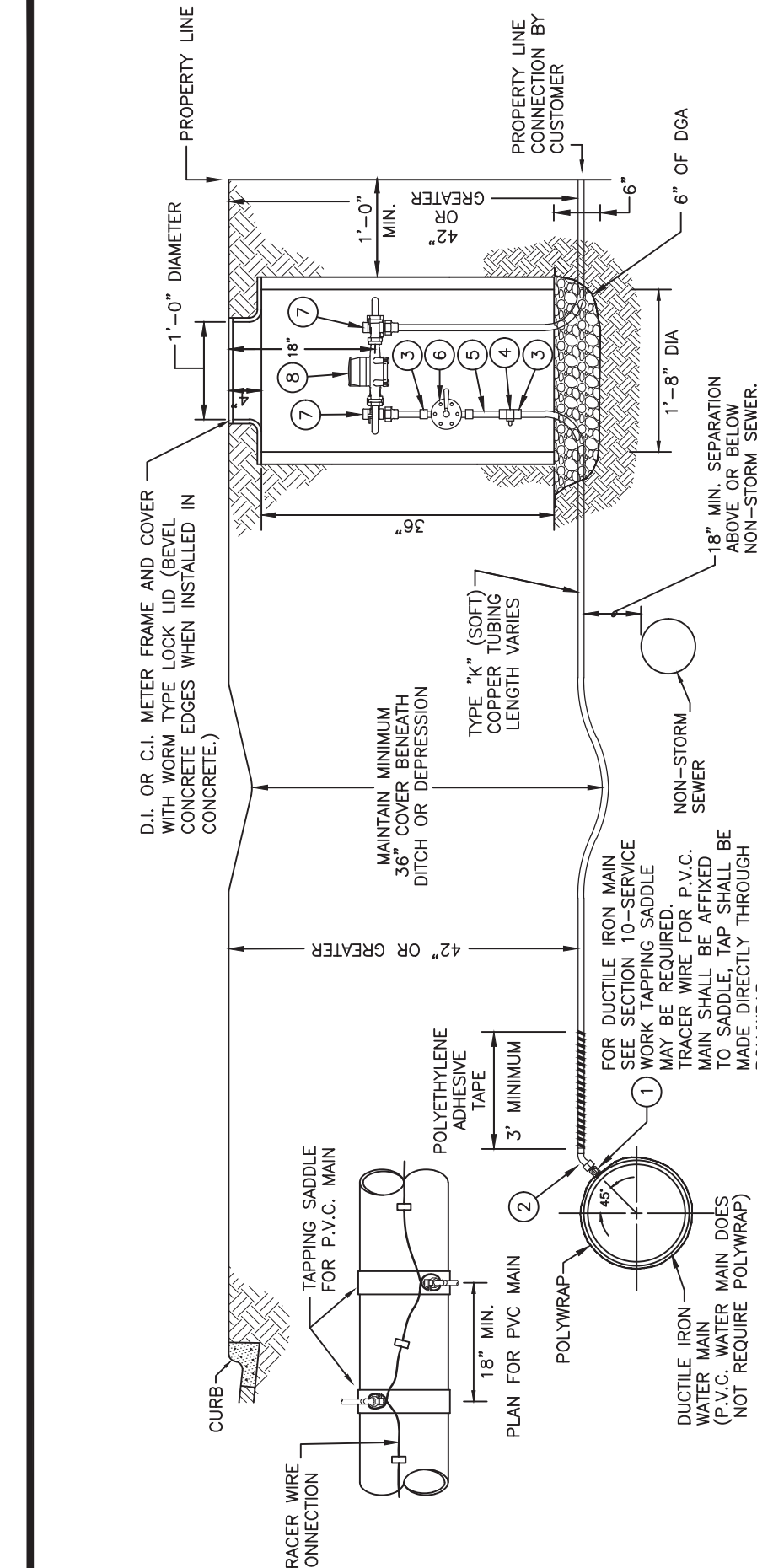
TYPICAL COPPER SERVICE 1" AND SMALLER

NO.	QTY	FITTING	JOINT	SERVICE SIZES
1	1	CORPORATION STOP	INLET-MALE THREAD (TAPERED) OUTLET-MALE THREAD	3/4" 1"
2	1	ADAPTER BEND (45° OR 90°)	INLET-FEMALE THREAD OUTLET-FEMALE COMPRESSION	3/4" 1"
3	2	ANGLE METER STOP	FEMALE COMPRESSION FEMALE THREAD	3/4" 1"
4	1	METER	MALE THREAD	3/4"

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STANDARD DRAWING
TYPICAL COPPER SERVICE
1" AND SMALLER

DATE: JULY 2021
DRAWING NO.: 3002
SCALE: NONE
SHEET: 1 OF 1

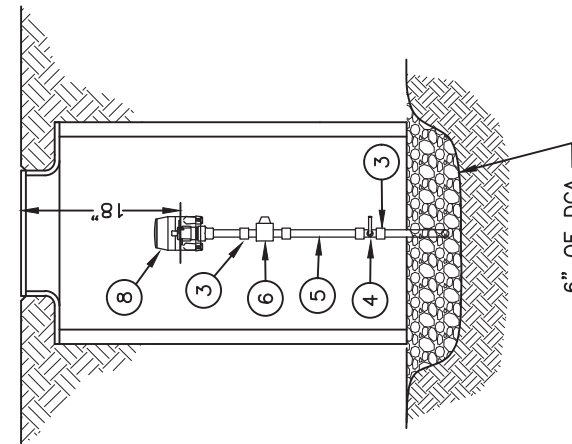


NOTES:

- 1) VAULT MATERIAL UNDER DRIVING SURFACES SHALL BE CONCRETE WITH HEAVY FRAME AND COVER, OTHERS SHALL BE PLASTIC WITH LIGHT FRAME AND COVER.
- 2) POLYWRAP REPAIRS SHALL BE MADE IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING 3804.

TYPICAL 1" COPPER SERVICE WITH PRESSURE REDUCING VALVE

NO.	QTY	FITTING	JOINT	SIZE
1	1	CORPORATION STOP	INLET-MALE THREAD (TAPERED)	1"
2	1	ADAPTER BEND (45° OR 90°)	OUTLET-MALE THREAD	1"
3	2	ADAPTER	INLET-FEMALE THREAD	1"
4	1	BALL VALVE W/HANDLE	OUTLET-FEMALE COMPRESSION	1"
5	1	BRASS NIPPLE	FEMALE COMPRESSION MALE THREAD	1"
6	1	PRESSURE REDUCING VALVE	FEMALE THREAD	1"
7	2	ANGLE METER STOP	MALE THREAD	1"
8	1	METER	FEMALE COMPRESSION FEMALE THREAD	1"
			MALE THREAD	1"



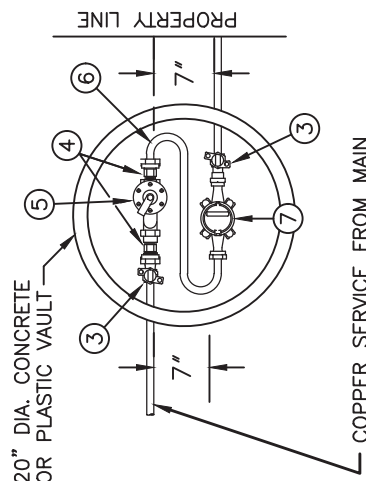
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STANDARD DRAWING
TYPICAL 1" COPPER SERVICE
WITH PRESSURE REDUCING VALVE

DATE: JULY 2021
DRAWING NO.: 3003
SCALE: NONE
SHEET: 1 OF 1



- 1) PRESSURE REDUCING VALVE REQUIRED FOR GREATER THAN 100 P.S.I.
- 2) VAULT MATERIAL UNDER DRIVING SURFACES SHALL BE CONCRETE. WITH HEAVY FRAME AND COVER, OTHERS SHALL BE PLASTIC WITH LIGHT FRAME AND COVER.
- 3) POLYWRAP REPAIRS SHALL BE MADE IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING 3804.



TYPICAL 3/4" COPPER SERVICE WITH PRESSURE REDUCING VALVE

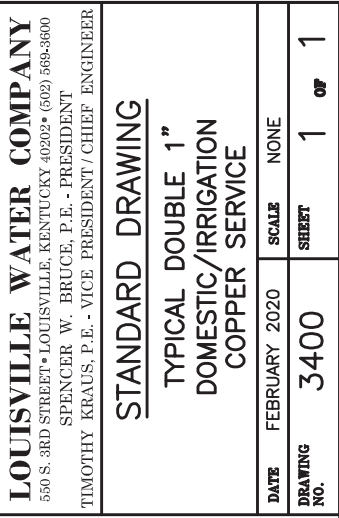
NO.	QTY	FITTING	JOINT	SIZE
①	1	CORPORATION STOP	INLET—MALE THREAD (TAPERED) OUTLET—MALE THREAD	3/4" 3/4"
②	1	ADAPTER BEND (45° OR 90°)	INLET—FEMALE THREAD OUTLET—FEMALE COMPRESSION	3/4" 3/4"
③	2	ANGLE METER STOP	FEMALE COMPRESSION FEMALE THREAD	3/4" 3/4"
④	2	ADAPTER FOR PRESSURE REGULATOR	MALE THREAD	3/4"
⑤	1	PRESSURE REGULATOR	FEMALE THREAD	3/4"
⑥	1	S-TUBE	FEMALE THREAD	3/4"
⑦	1	METER	MALE THREAD	5/8"x. (or 3/4")

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STANDARD DRAWING

TYPICAL 3/4" COPPER SERVICE
WITH PRESSURE REDUCING VALVE

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3004	SHEET	1 OF 1



- 1) VAULT MATERIAL UNDER DRIVING SURFACES SHALL BE CONCRETE WITH HEAVY FRAME AND COVER, OTHERS SHALL BE PLASTIC WITH LIGHT FRAME AND COVER.
- 2) POLYWRAP REPAIRS SHALL BE MADE IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING 3804.

NO.	QTY	FITTING	JOINT	SIZE
①	1	Corporation Stop	Inlet-Male Thread (Tapered) Outlet-Male Thread	1" 1"
②	1	Adapter Bend (45° OR 90°)	Inlet-Female Thread Outlet-Female Compression	1" 1"
③	1	Branch Piece, with 2 Angle Meter Stops	Inlet-Female Compression Outlet-Female Compression	1" 3/4"
④	2	Meter	Male Thread	3/4"
⑤	1	Angle Meter Stop	Female Thread Female Compression	3/4" 3/4" or 1"
⑥	1	Angle Check Valve (Irrigation Service Only)	Female Thread Female Compression	3/4" 3/4" or 1"



- 1) VAULT MATERIAL UNDER DRIVING SURFACES SHALL BE CONCRETE WITH HEAVY FRAME AND COVER, OTHERS SHALL BE PLASTIC WITH LIGHT FRAME AND COVER.
- 2) POLYWRAP REPAIRS SHALL BE MADE IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING 3804.

NO.	QTY	FITTING	JOINT	SIZE
①	1	Corporation Stop	Inlet—Male Thread (Tapered) Outlet—Male Thread	1" 1"
②	1	Adapter Bend (45° OR 90°)	Inlet—Female Thread Outlet—Female Compression	1" 1"
③	2	Adapter	Female Compression Male Thread	1" 1"
④	1	Ball Valve w/ Handle	Female Thread	1"
⑤	1	Brass Nipple	Male Thread	1"
⑥	1	Pressure Reducing Valve	Female Thread	1"
⑦	1	Branch Piece with 2 Angle Meter Stop	Inlet—Female Compression Outlet—Female Thread	1"
⑧	2	Meter	Male Thread	3/4"
⑨	1	Angle Meter Stop (Domestic Service Only)	Female Thread Female Compression	3/4" 3/4" or 1"
⑩	1	Angle Check Valve (Irrigation Service Only)	Female Thread Female Compression	3/4" 3/4" or 1"

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STANDARD DRAWING

**TYPICAL DOUBLE 3/4" OR 1"
DOMESTIC / IRRIGATION
COPPER SERVICE WITH
PRESSURE REDUCING VALVE**

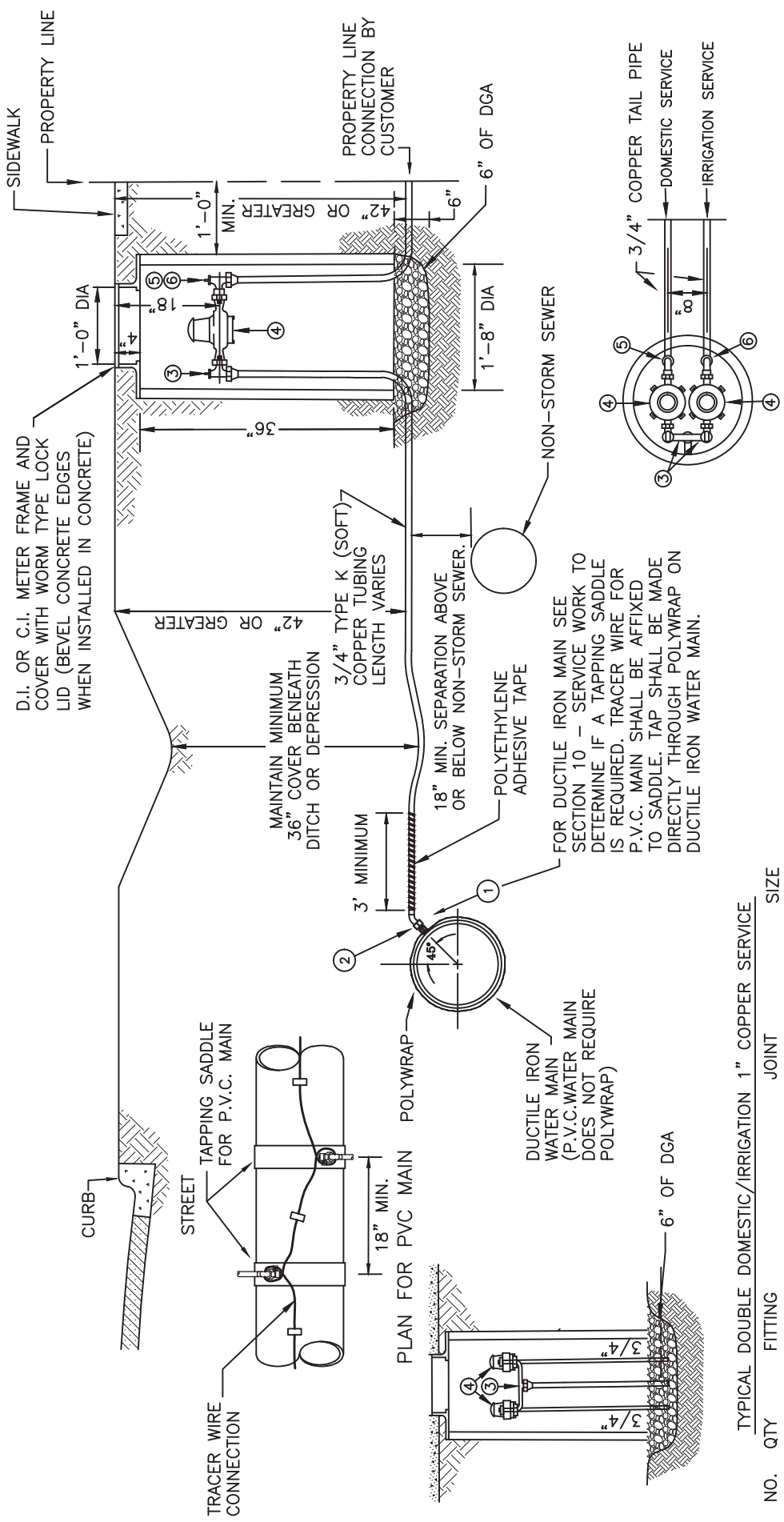
DATE: JULY 2021

SCALE

3401

SHEET

1



NOTE:

- 1) VAULT MATERIAL UNDER DRIVING SURFACES SHALL BE CONCRETE WITH HEAVY FRAME AND COVER, OTHERS SHALL BE PLASTIC WITH LIGHT FRAME AND COVER.
- 2) POLYWRAP REPAIRS SHALL BE MADE IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING 3804.

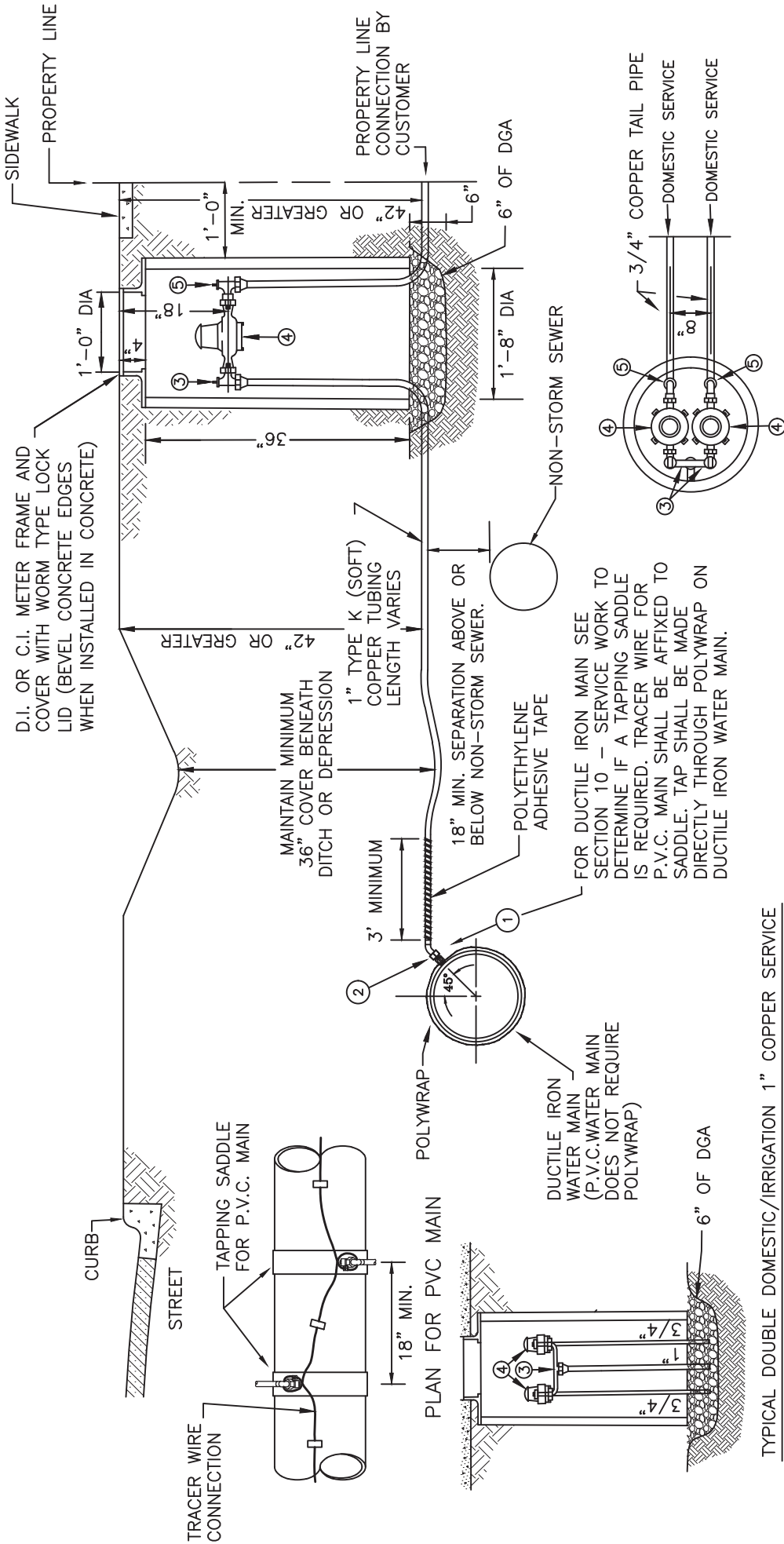
TYPICAL DOUBLE DOMESTIC/IRRIGATION 1" COPPER SERVICE

NO.	QTY	FITTING	JOINT	SIZE
①	1	Corporation Stop	Inlet-Male Thread (Tapered) Outlet-Male Thread	3/4" 3/4"
②	1	Adapter Bend (45° OR 90°)	Inlet-Female Thread Outlet-Female Compression	3/4" 3/4"
③	1	Branch Piece, with 2 Angle Meter Stops	Inlet-Female Compression Outlet-Female Compression	3/4" x 3/4" 3/4"
④	2	Meter	Male Thread	3/4"
⑤	1	Angle Meter Stop (Domestic Service Only)	Female Thread Female Compression	3/4" 3/4"
⑥	1	Angle Check Valve (Irrigation Service Only)	Female Thread Female Compression	3/4" 3/4"

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STANDARD DRAWING
TYPICAL 3/4" IRRIGATION
RETRO FIT
COPPER SERVICE

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3403	SHEET	1 OF 1



NOTE:

- 1) VAULT MATERIAL UNDER DRIVING SURFACES SHALL BE CONCRETE WITH HEAVY FRAME AND COVER, OTHERS SHALL BE PLASTIC WITH LIGHT FRAME AND COVER.
- 2) POLYWRAP REPAIRS SHALL BE MADE IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING 3804.

TYPICAL DOUBLE DOMESTIC/IRRIGATION 1" COPPER SERVICE

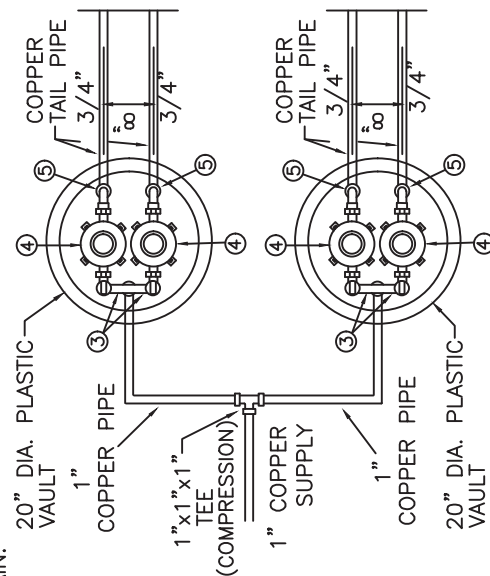
NO.	QTY	FITTING	JOINT	SIZE
①	1	Corporation Stop	Inlet-Male Thread (Tapered) Outlet-Male Thread	1" 1"
②	1	Adapter Bend (45° OR 90°)	Inlet-Female Thread Outlet-Female Compression	1" 1"
③	1	Branch Piece, with 2 Angle Meter Stops	Inlet-Female Compression Outlet-Female Thread	1" x 3/4" 3/4"
④	2	Meter	Male Thread	3/4"
⑤	2	Angle Meter Stop	Female Thread Female Compression	3/4" 3/4"

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STANDARD DRAWING

TYPICAL 1" TANDEM
2-WAY DOMESTIC
COPPER SERVICE

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3404	SHEET	1 OF 1



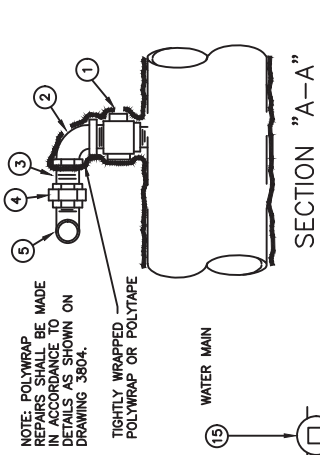
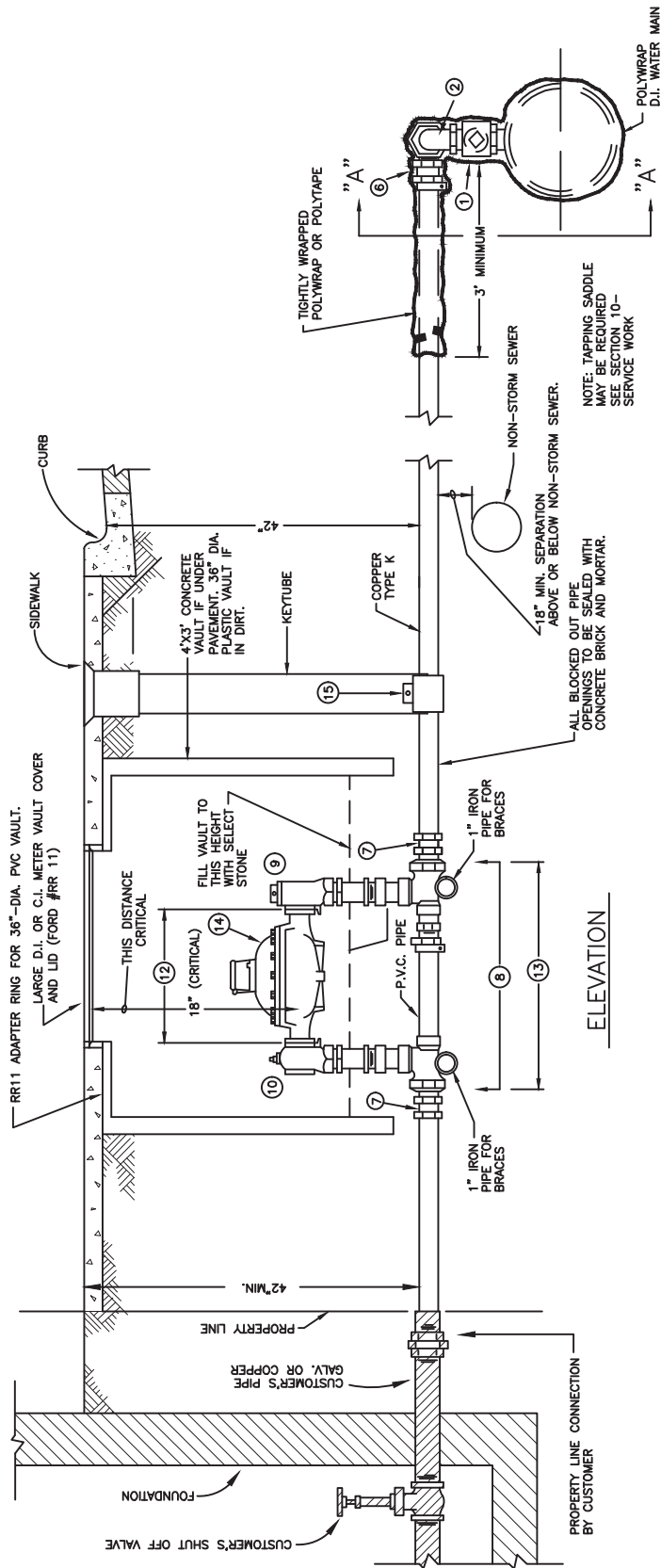
TYPICAL 1" 4-WAY DOMESTIC COPPER SERVICE				
NO.	FITTING		JOINT	SIZE
	QTY			
①	1	Corporation Stop	Inlet—Male Thread (Tapered) Outlet—Male Thread	1" 1"
②	1	Adapter Bend (45° OR 90°)	Inlet—Female Thread Outlet—Female Compression	1" 1"
③	2	Branch Piece, with 2 Angle Meter Stops	Inlet—Female Compression Outlet—Female Thread	1"x3/4" 3/4"
④	4	Meter	Male Thread	3/4"
⑤	4	Angle Meter Stop	Female Thread Female Compression	3/4" 3/4"

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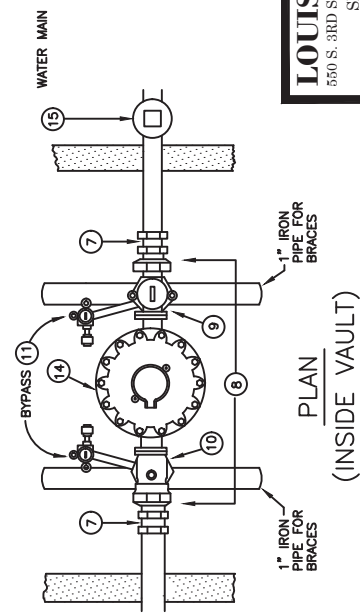
STANDARD DRAWING

TYPICAL 1" 4-WAY
DOMESTIC COPPER SERVICE

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3430	SHEET	1 OF 1



NOTE: POLYWRAP REPAIRS SHALL BE MADE IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING 3804.

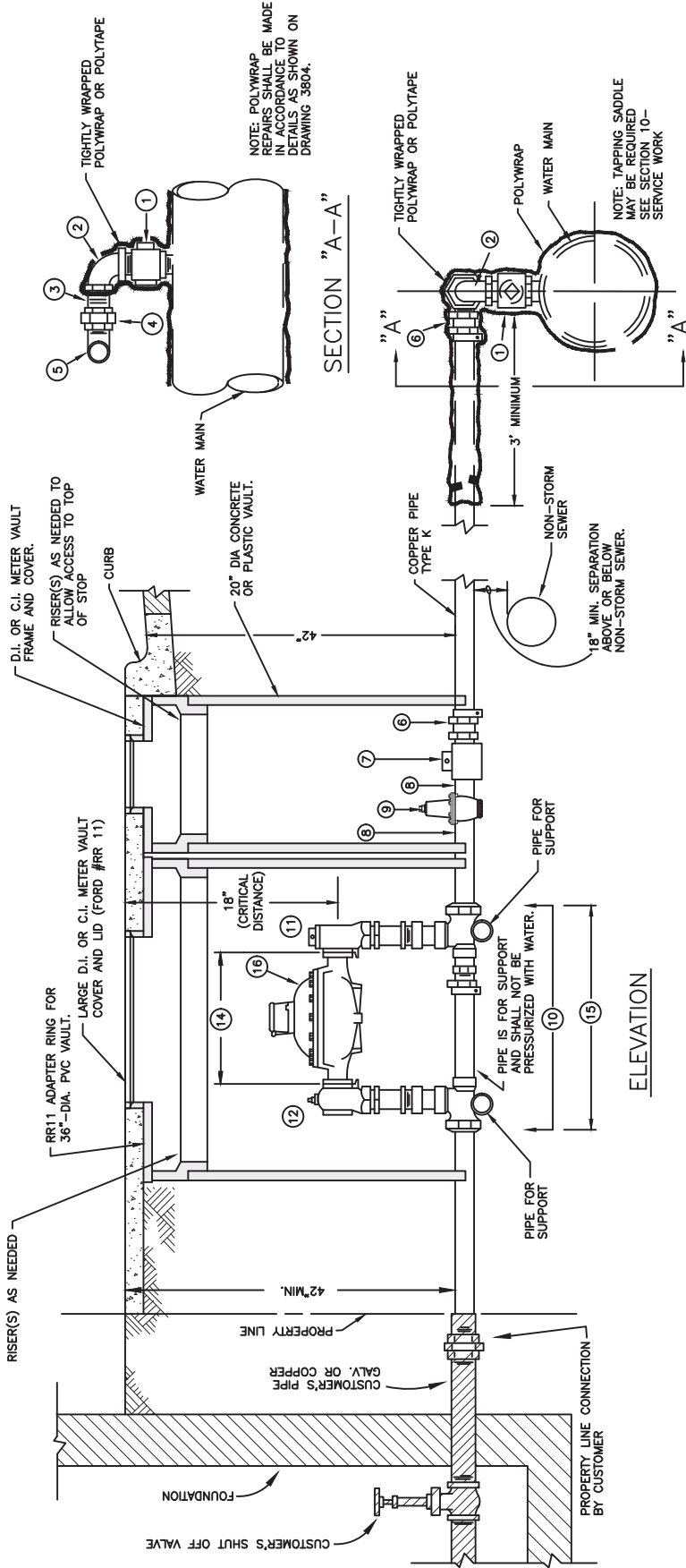


TYPICAL 1 1/2" or 2" COPPER SERVICE

NO.	QTY	FITTING	JOINT	1.5" SERVICE'S FITTING SIZES		2" SERVICE'S FITTING SIZES	
				1-1/2"	2"	2-1/2"	2"
1	1	CORPORATION STOP	INLET-MALE THREAD (TAPERED)	1-1/2"	2"	2-1/2"	2"
2	1	BASS REDUCING ELL	OUTLET-MALE THREAD	2"	2"	2-1/2"	2"
3	1	BASS NIPPLE (CLOSE)	INLET-FEMALE THREAD	1-1/2"	2"	2"	2"
4	1	BASS UNION	OUTLET-FEMALE THREAD	1-1/2"	2"	2"	2"
5	1	BASS STREET ELL	MALE THREAD	1-1/2"	2"	2"	2"
6	1	COMPRESSION COUPLING	FEMALE THREAD	1-1/2"	2"	2"	2"
7	2	ADAPTER	FEMALE COMPRESSION	1-1/2"	2"	2"	2"
8	1	METER SETTER	MALE THREAD	1-1/2"	2"	2"	2"
9	1	ANGLE METER STOP	FEMALE THREAD	1-1/2"	2"	2"	2"
10	1	ANGLE CHECK VALVE	---	---	---	---	---
11	1	BY-PASS 1	---	---	---	---	---
12	1	---	---	---	---	---	---
13	1	---	---	---	---	---	---
14	1	METER	MALE THREAD	1-1/2"	2"	2"	2"
15	1	STOP	FEMALE THREAD	1-1/2"	2"	2"	2"

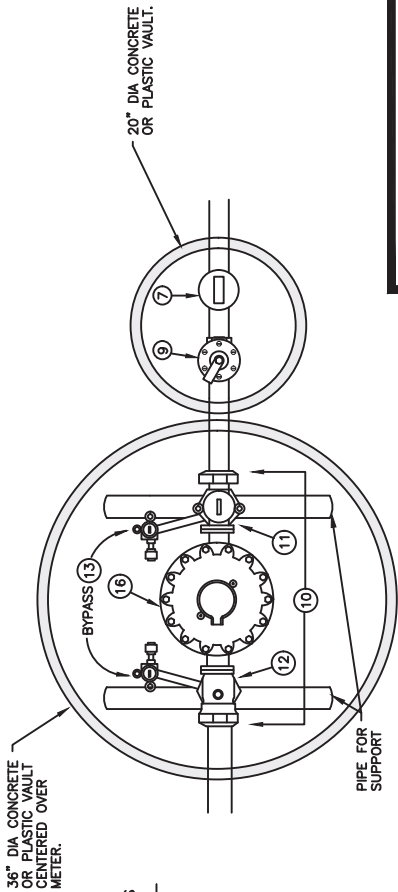
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TIMOTHY KRAUS, P.E. - VICE PRESIDENT / CHIEF ENGINEER

STANDARD DRAWING			
TYPICAL 1-1/2" OR 2" COPPER SERVICE			
DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3200	SHEET	1 OF 1



TYPICAL 1 1/2" or 2" COPPER SERVICE

NO.	QTY	FITTING	JOINT	1.5" SERVICE'S FITTING SIZE	2" SERVICE'S FITTING SIZE
1	1	CORPORATION STOP	INLET-MALE THREAD (TAPERED) OUTLET-MALE THREAD	1-1/2" 2"	2" 2-1/2"
2	1	BRASS REDUCING ELL	INLET-FEMALE THREAD OUTLET-FEMALE COMPRESSION	2" 1-1/2"	2-1/2" 2"
3	1	BRASS NIPPLE (CLOSE)	MALE THREAD	1-1/2"	2"
4	1	BRASS UNION	FEMALE THREAD	1-1/2"	2"
5	1	BRASS STREET ELL	MALE THREAD	1-1/2"	2"
6	1	COMPRESSION COUPLING	FEMALE THREAD FEMALE COMPRESSION	1-1/2" 1-1/2"	2" 2"
7	1	STOP	FEMALE THREAD	1-1/2"	2"
8	2	BRASS NIPPLE (X6)	MALE THREAD	1-1/2"	2"
9	1	PRESSURE REDUCING VALVE	FEMALE THREAD	1-1/2"	2"
10	1	METER SETTER	FEMALE THREAD	1-1/2"	2"
11	1	ANGLE METER STOP	-----	-----	-----
12	1	ANGLE CHECK VALVE	-----	-----	-----
13	1	BYPASS 1"	-----	-----	-----
14	1	-----	-----	-----	-----
15	1	-----	-----	-----	-----
16	1	METER	MALE THREAD	1-1/2"	2"



PLAN VIEW
(INSIDE VAULTS)

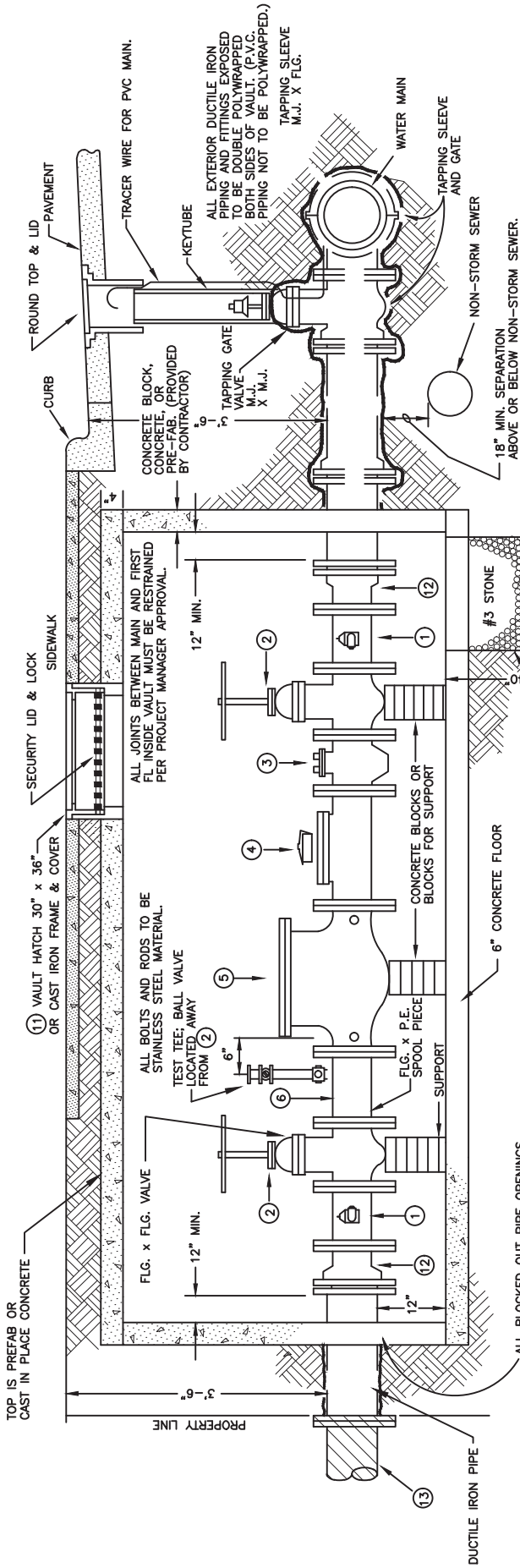
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STANDARD DRAWING

TYPICAL 1-1/2" OR 2"
COPPER SERVICE
WITH PRESSURE REDUCING VALVE

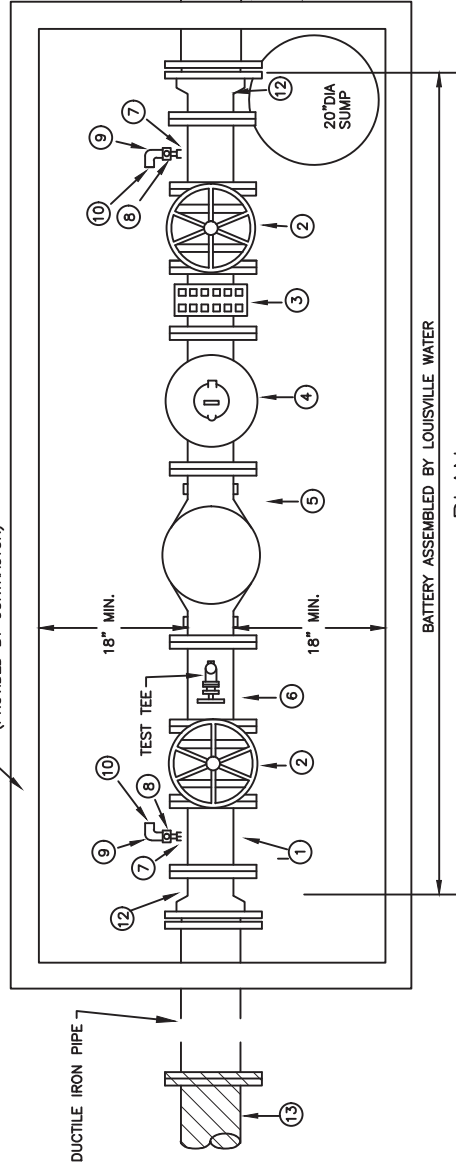
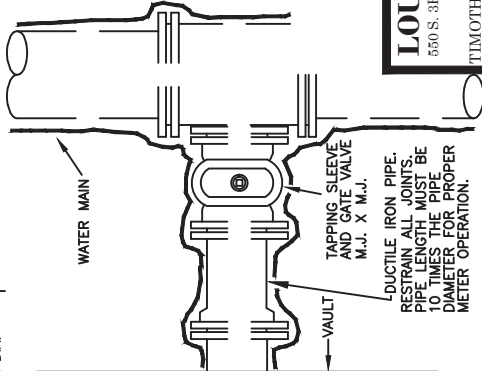
- NOTES:
- VAULTS SHALL NOT REST DIRECTLY ON PIPE. A CLEAN CUT ARCH SHALL BE CUT IN VAULT TO ALLOW 3" SEPARATION BETWEEN VAULT AND PIPE.
 - VAULTS SHALL BE PLACED ON A 6" BEDDING OF DGA THAT EXTENDS 6" BEYOND VAULT EXTERIOR.

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3202	SHEET	1 OF 1



NOTES:

- 1.) WHEN JOINTS ARE RESTRAINED WITH RODS, REQUIREMENT IS 5/8" ALL THREAD ROD (STAINLESS STEEL) WITH A MINIMUM OF TWO RODS PER JOINT.
- 2.) RESTRAIN ALL JOINTS BETWEEN THE MAIN AND THE ADAPTER FLANGE JOINT THAT'S INSIDE THE VAULT.
- 3.) IF ANY PORTION OF THE SERVICE PIPING IS ENCASED, THEN THE ENTIRE LENGTH OF SERVICE PIPING SHALL BE DUCTILE IRON WITH RESTRAINED JOINTS.
- 4.) ACCESS HATCH AND VAULT MUST MEET OR EXCEED H-20 TRAFFIC LOADING DESIGN CRITERIA. CAST IRON FRAME & COVER REQUIRED IN AREAS OF VEHICULAR TRAFFIC.
- 5.) COMPOUND METER INSTALLATIONS SAME AS TURBINE METERS.



- 1

TWO (2) 4"x3" SPOOL PIECES WITH TWO (2) 2" OUTLETS, FLG x FLG

2

TWO (2) GATE VALVES, WHEEL FLG x FLG

3

ONE (1) STRAINER, FLG x FLG

4

ONE (1) METER, FLG x FLG
- 5

ONE (1) CHECK VALVE, FLG x FLG

6

ONE (1) SPOOL PIECE, FLG x FLG WITH ONE (1) 2" OUTLET, 2" BALL VALVE ASSEMBLY FOR TEST TEE

7

TWO (2) NIPPLES, MALE THREAD

8

TWO (2) STOP OR VALVES, MALE THREAD
- 9

TWO (2) STREET ELLS, MALE THREAD

10

TWO (2) PLUGS, MALE THREAD

11

ONE (1) VAULT HATCH-30" x 36"

12

TWO (2) 4"x3" ADAPTERS-FLG. x MJ WITH GRIPPER GLAND

13

CUSTOMER PIPING

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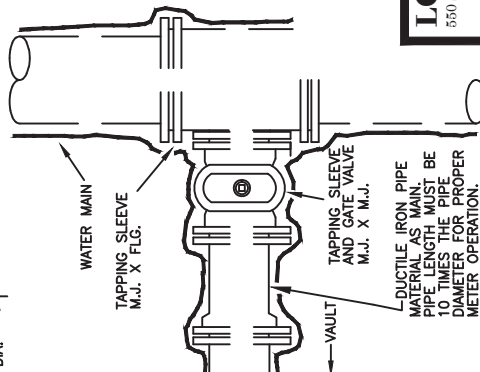
STANDARD DRAWING

TYPICAL DUCTILE IRON
DOMESTIC SERVICE 4" x 3"

DRAWING NO.	DATE	OCT. 2021	SCALE	NONE	SHEET	1	OF	1
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- 1.) WHEN JOINTS ARE RESTRAINED WITH RODS, REQUIREMENT IS 5/8" ALL-THREAD ROD (STAINLESS STEEL) WITH A MINIMUM OF TWO RODS PER JOINT.
- 2.) RESTRAIN ALL JOINTS BETWEEN THE MAIN AND THE ADAPTER FLANGE JOINT THAT'S INSIDE THE VAULT.
- 3.) IF ANY PORTION OF THE SERVICE PIPING IS ENCASED, THEN THE ENTIRE LENGTH OF SERVICE PIPING SHALL BE DUCTILE IRON WITH RESTRAINED JOINTS.
- 4.) ACCESS HATCH AND VAULT MUST MEET OR EXCEED H-20 TRAFFIC LOADING DESIGN CRITERIA, CAST IRON FRAME & COVER REQUIRED IN AREAS OF VEHICULAR TRAFFIC.
- 5.) COMPOUND METER INSTALLATIONS SAME AS TURBINE METERS.



- | | | | | | |
|---|--------------------------------------------------------------|---|---------------------------------------------------------------------------------------------|---|-----------------------------------------------------|
| ① | TWO (2) 4"x4" SPOOL PIECES WITH TWO (2) OUTLETS, FLG. x FLG. | ⑤ | ONE (1) CHECK VALVE, FLG x FLG | ⑨ | FOUR (4) STREET ELLS, MALE THREAD |
| ② | TWO (2) GATE VALVES, WHEEL FLG x FLG | ⑥ | ONE (1) SPOOL PIECE, FLG x FLG, WITH ONE (1) 2" OUTLET, 2" BALL VALVE ASSEMBLY FOR TEST TEE | ⑩ | FOUR (4) PLUGS, MALE THREAD |
| ③ | ONE (1) STRAINER, FLG x FLG | ⑦ | FOUR (4) NIPPLES, MALE THREAD | ⑪ | ONE (1) VAULT HATCH-30" x 36" |
| ④ | ONE (1) METER, FLG x FLG | ⑧ | FOUR (4) STOP OR VALVES, MALE THREAD | ⑫ | TWO (2) 4"x3" ADAPTERS-FLG. x MJ WITH GRIPPER CLAND |
| | | | | ⑬ | CUSTOMER PIPING |

STANDARD DRAWING

**TYPICAL DUCTILE IRON
DOMESTIC SERVICE
4" AND LARGER**

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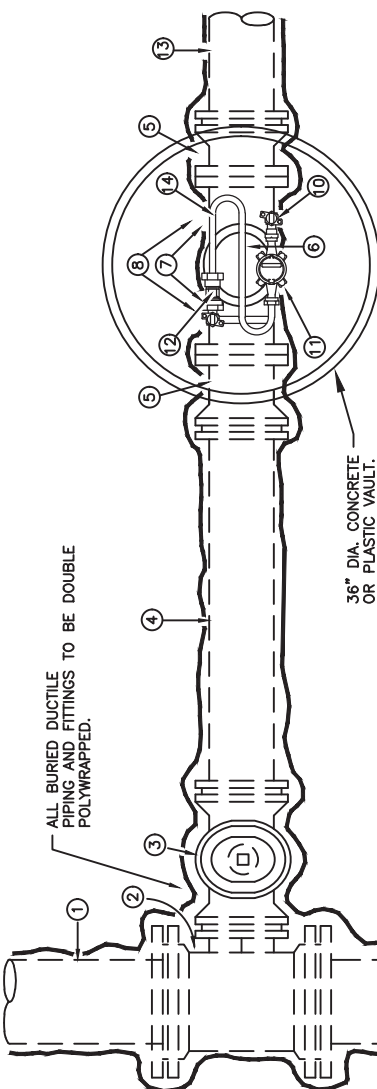
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TIMOTHY KRAUS, P.E. - VICE PRESIDENT / CHIEF ENGINEER

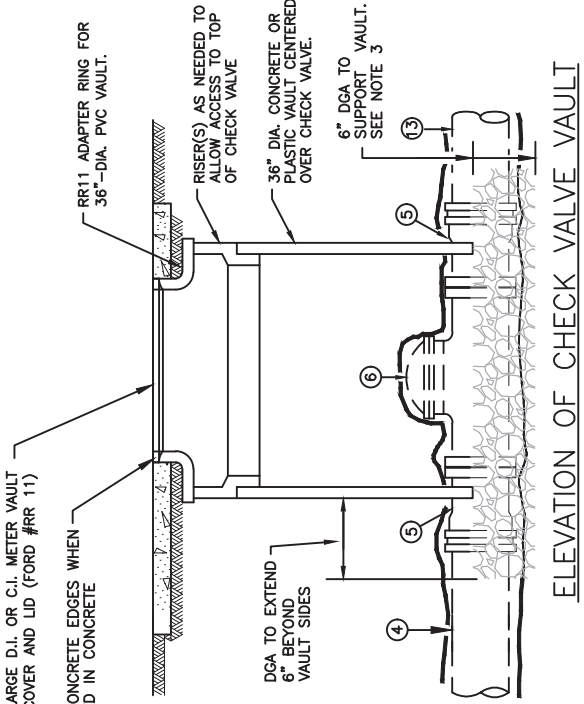
DATE	OCT. 2021	SCALE	NONE
DRAWING NO.	3203	SHEET	1 OF 1

TYPICAL FIRE PROTECTION SERVICE 4" OR LARGER

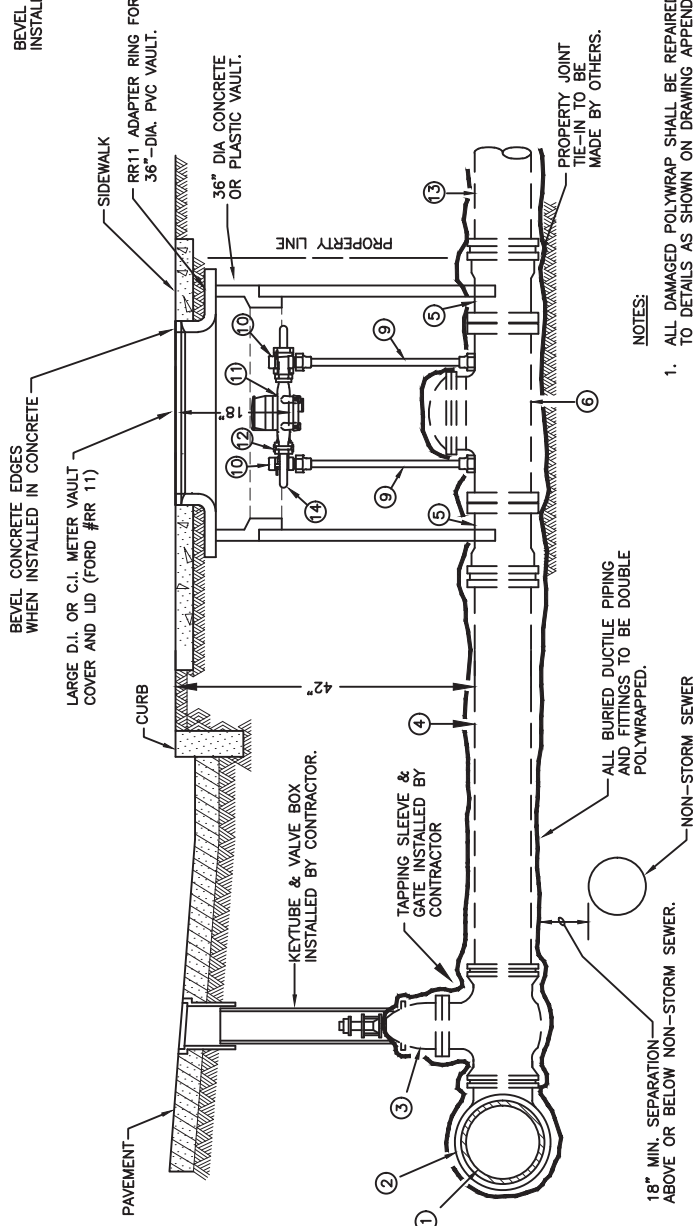
FIRE SERVICE SIZES		
4" 6"		
NO. QTY	FITTING	JOINT
1	Main in Street	Varies
2	Tapping Sleeve	MJ
3	Tapping Gate Valve	MJ x MJ (restrained)
4	D.I. Service Piping	MJ / Bell & Spig (restrain all joints up to check valve)
5	Adapter	Flange X MJ or PE
6	Detector Check Valve	Flange X Flange
7	Bushing	Male Thread
8	Adapter	Female Thread
9	Copper Tubing	Female Compression
10	Angle Meter Stop	Female Compression
11	Meter	Female Thread
12	Swing Check Valve	Male Thread X Male Thread
13	Customer Piping	Female Thread
14	S-Tube	Female Thread



PLAN VIEW



ELEVATION OF CHECK VALVE VAULT



PROFILE VIEW

- NOTES:
- ALL DAMAGED POLYWRAP SHALL BE REPAIRED IN ACCORDANCE TO DETAILS AS SHOWN ON DRAWING APPENDIX.
 - RESTRAIN ALL JOINTS BETWEEN THE MAIN AND THE DETECTOR CHECK VALVE.
 - 36" DIA. VAULT SHALL NOT REST DIRECTLY ON PIPE. A CLEAN CUT ARCH SHALL BE CUT IN VAULT TO ALLOW 3" SEPARATION. VAULT SHALL REST ON A 6" BEDDING OF DGA
 - ALL BOLTS ON TOP OF CHECK VALVE SHALL BE MADE ACCESSIBLE FROM INSIDE OF VAULT
 - CAST CONCRETE THRUST ANCHOR ON TAPPING SLEEVE AS PER DRAWING 1400

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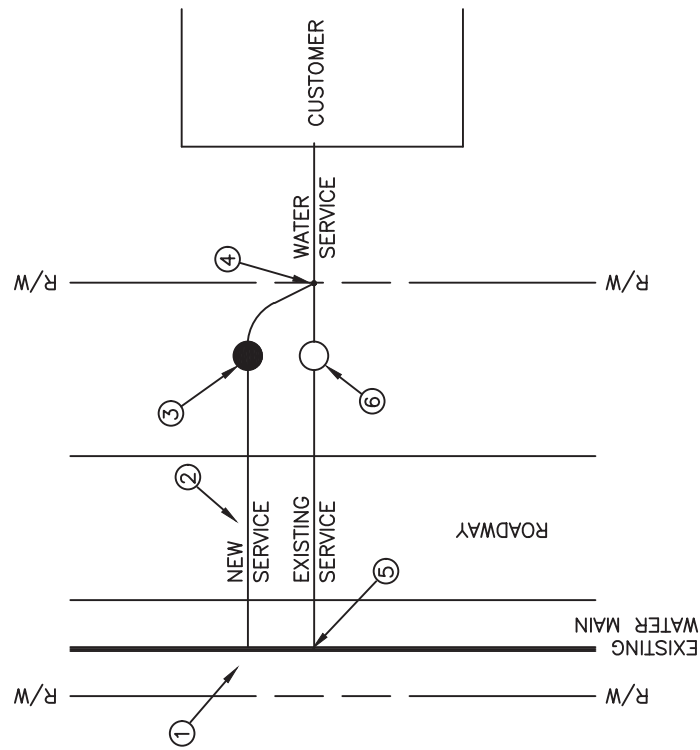
STANDARD DRAWING

TYPICAL

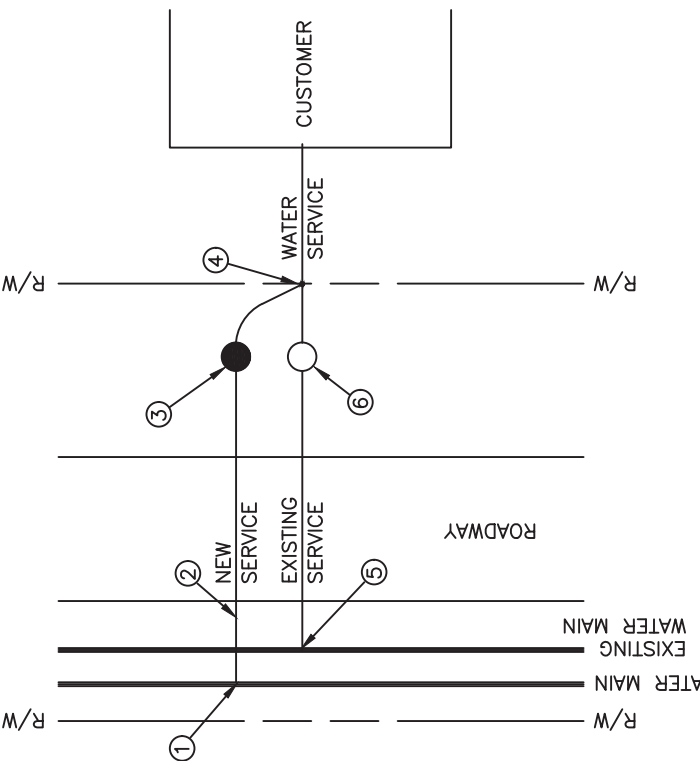
FIRE PROTECTION SERVICE

4" AND LARGER

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3601	SHEET	1 OF 1



CONNECTION TO NEW WATER MAIN



CONNECTION TO EXISTING WATER MAIN

NOTES:

- 1 INSTALL NEW CORPORATION STOP ON MAIN.
- 2 INSTALL NEW SERVICE LINE.
- 3 INSTALL METER, VAULT, FRAME AND LID. CONCRETE METER VAULTS WITH HEAVY FRAME AND COVER SHALL BE INSTALLED IN AREAS OF VEHICULAR TRAFFIC.
- 4 INSTALL TAIL PIECE AND TIE-IN TO CUSTOMER SERVICE LINE. IF EXISTING TAIL PIECE OR CUSTOMER SERVICE LINE IS LEAD OR GALVANIZED IRON THEN FOLLOW CURRENT INSTALLATION PROCEDURES PER THE LOUISVILLE WATER PROJECT MANAGER.

- 5 DISCONTINUE OLD SERVICE AT EXISTING WATER MAIN. DRIVEN FERRULES MUST BE REMOVED AND A TAPPING SADDLE INSTALLED AT TAP IF MAIN WILL REMAIN ACTIVE. (SEE SECT. 10.17)
- 6 ABANDON OLD METER VAULT, RETURN METER AND CAST IRON FRAME & COVER TO ALLMOND AVENUE, BACKFILL METER VAULT (SEE SECT.10.18)

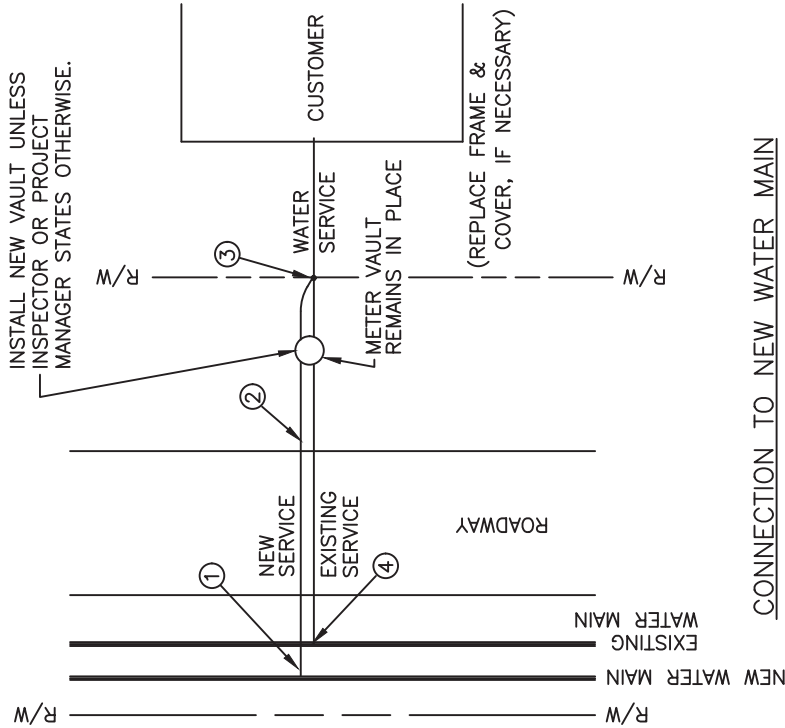
* CONNECTION AS SHOWN IS A "LONG SERVICE" TO MAIN ON OPPOSITE SIDE OF ROAD. "SHORT SERVICE" IS DEFINED AS METER AND MAIN ON THE SAME SIDE OF ROADWAY.

- LEGEND
- = EXISTING METER VAULT
 - = NEW METER VAULT

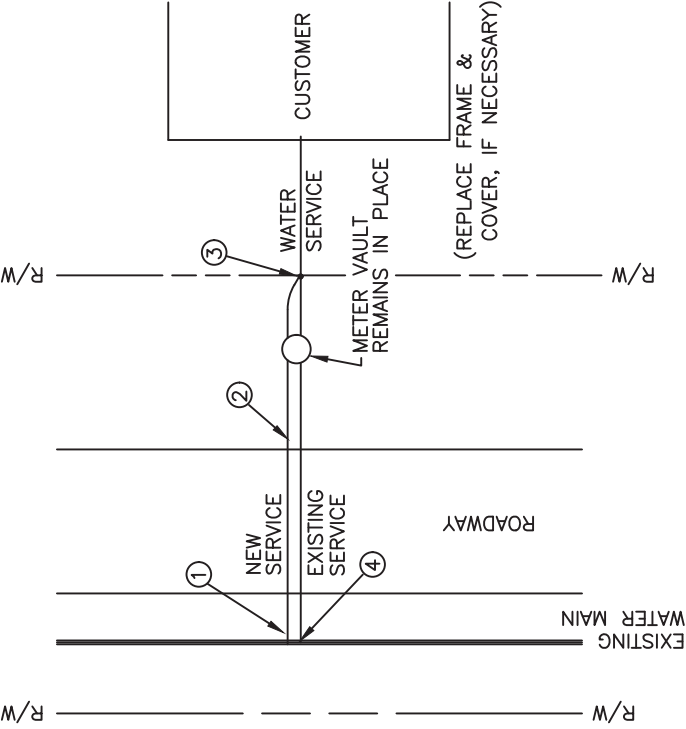
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STANDARD DRAWING
RELOCATE SERVICE

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3440	SHEET	1 OF 1



CONNECTION TO NEW WATER MAIN



CONNECTION TO EXISTING WATER MAIN

LEGEND

○ = EXISTING METER VAULT

NOTES:

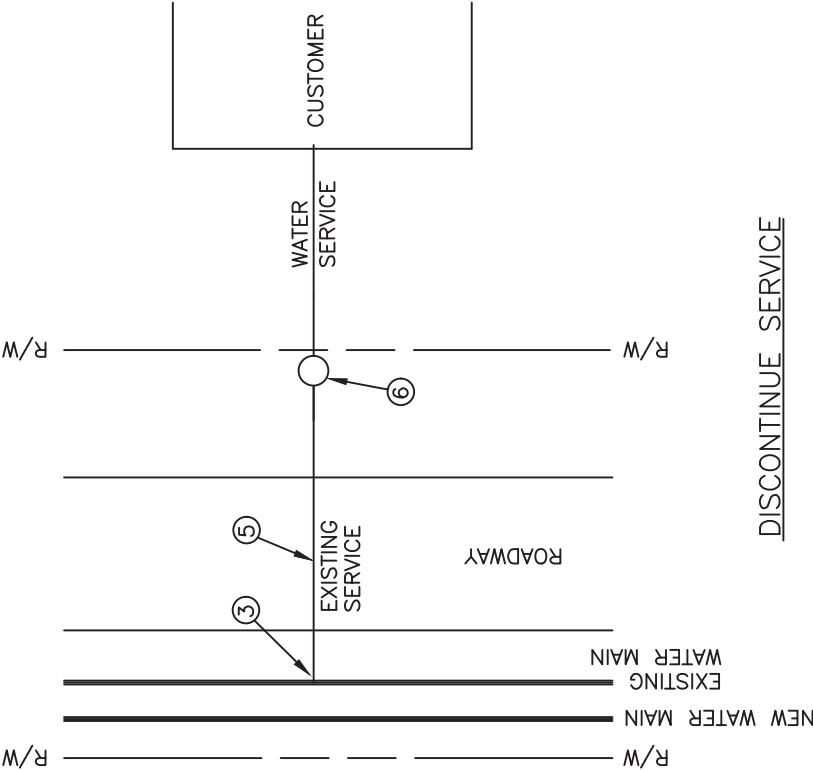
1. INSTALL NEW CORPORATION STOP ON MAIN.
 2. INSTALL NEW SERVICE LINE TO EXISTING METER STOP.
 3. INSTALL TAIL PIECE AND TIE-IN TO CUSTOMER SERVICE LINE. IF EXISTING TAIL PIECE OR CUSTOMER SERVICE LINE IS LEAD OR GALVANIZED IRON THEN INSTALL TAIL PIECE AND TIE-IN TO CUSTOMER SERVICE LINE. IF CUSTOMER SERVICE LINE IS LEAD THEN FOLLOW CURRENT INSTALLATION PROCEDURES PER THE LOUISVILLE WATER PROJECT MANAGER.
 5. DISCONTINUE OLD SERVICE AT EXISTING WATER MAIN. DRIVEN FERRULES MUST BE REMOVED AND REPAIR BAND INSTALLED AT TAP IF MAIN WILL REMAIN ACTIVE. (SEE SECT. 10.17)
 6. REPLACE EXISTING VAULT, FRAME, AND COVER IN SAME LOCATION AS OLD METER VAULT UNLESS THE LOUISVILLE WATER PROJECT MANAGER OR INSPECTOR APPROVES OF LEAVING THE EXISTING VAULT IN PLACE.
- * CONNECTION AS SHOWN IS A "LONG SERVICE" TO MAIN ON OPPOSITE SIDE OF ROAD. "SHORT SERVICE" IS DEFINED AS METER AND MAIN ON THE SAME SIDE OF ROADWAY.

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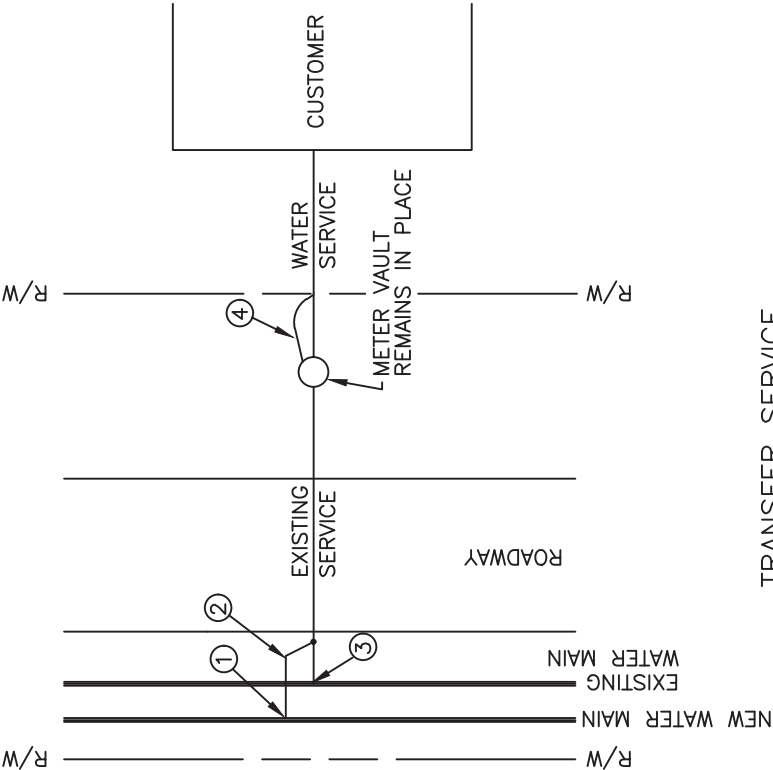
STANDARD DRAWING

RENEW SERVICE

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3441	SHEET	1 OF 1



DISCONTINUE SERVICE



TRANSFER SERVICE

NOTES:

- ① INSTALL NEW CORPORATION STOP ON MAIN.
- ② INSTALL NEW SERVICE LINE FROM NEW MAIN AND TIE-IN TO EXISTING SERVICE LINE. (AS REQUIRED)
- ③ DISCONTINUE OLD SERVICE AT EXISTING WATER MAIN. DRIVEN FERRULES MUST BE REMOVED AND REPAIR BAND INSTALLED AT TAP IF MAIN WILL REMAIN ACTIVE. (SEE SECT. 10.17)
- ④ INSTALL TAIL PIECE AND TIE-IN TO CUSTOMER SERVICE LINE. IF EXISTING TAIL PIECE OR CUSTOMER SERVICE LINE IS LEAD OR GALVANIZED IRON THEN INSTALL TAIL PIECE AND TIE-IN TO CUSTOMER SERVICE LINE. IF CUSTOMER SERVICE LINE IS LEAD THEN FOLLOW CURRENT INSTALLATION PROCEDURES PER THE LOUISVILLE WATER PROJECT MANAGER.

⑤ DISCONNECT AND PLUG SERVICE LINE.

⑥ ABANDON OLD METER VAULT, RETURN METER AND CAST IRON FRAME & COVER TO ALLMOND AVENUE, BACKFILL METER VAULT (SEE SECT.10.18)

LEGEND

○ = EXISTING METER VAULT

* CONNECTION AS SHOWN IS A "LONG SERVICE" TO MAIN ON OPPOSITE SIDE OF ROAD. "SHORT SERVICE" IS DEFINED AS METER AND MAIN ON THE SAME SIDE OF ROADWAY.

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STANDARD DRAWING

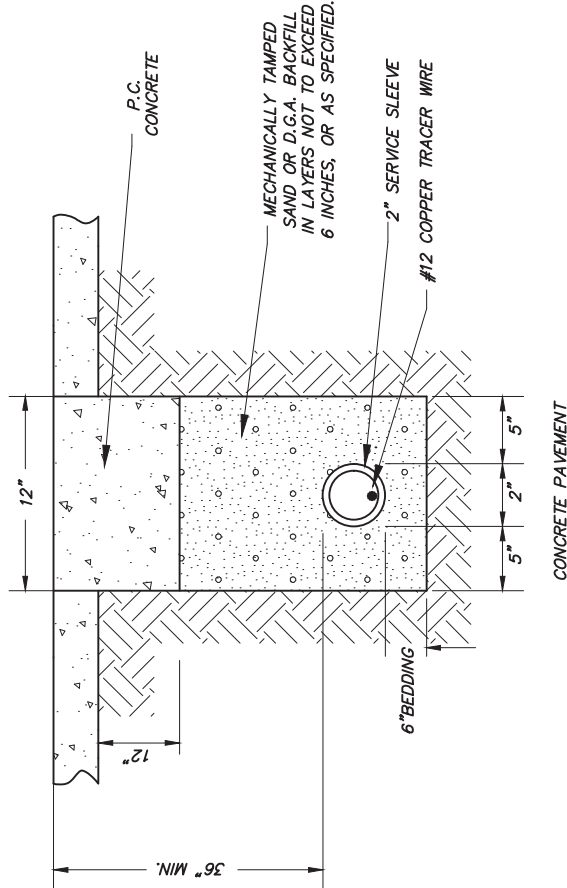
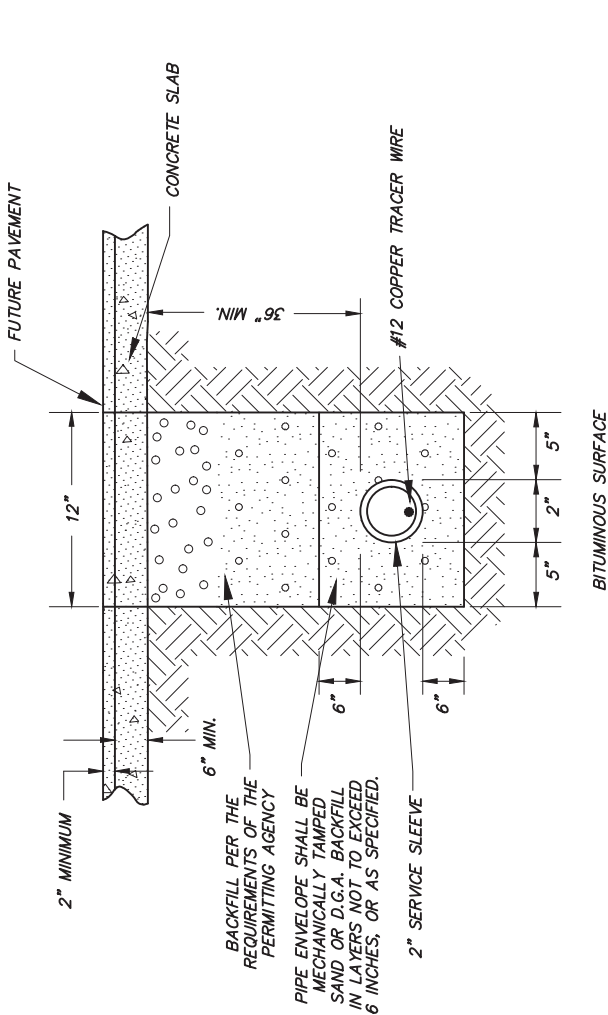
TRANSFER SERVICE
DISCONTINUE SERVICE

DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3442	SHEET	1 of 1

SERVICE SLEEVE INSTALLATIONS

IN ORDER TO AVOID CURB AND PAVEMENT CUTS DURING SERVICE INSTALLATIONS, THE FOLLOWING PROCEDURES HAVE BEEN ESTABLISHED FOR NEW DEVELOPMENT PROJECTS:

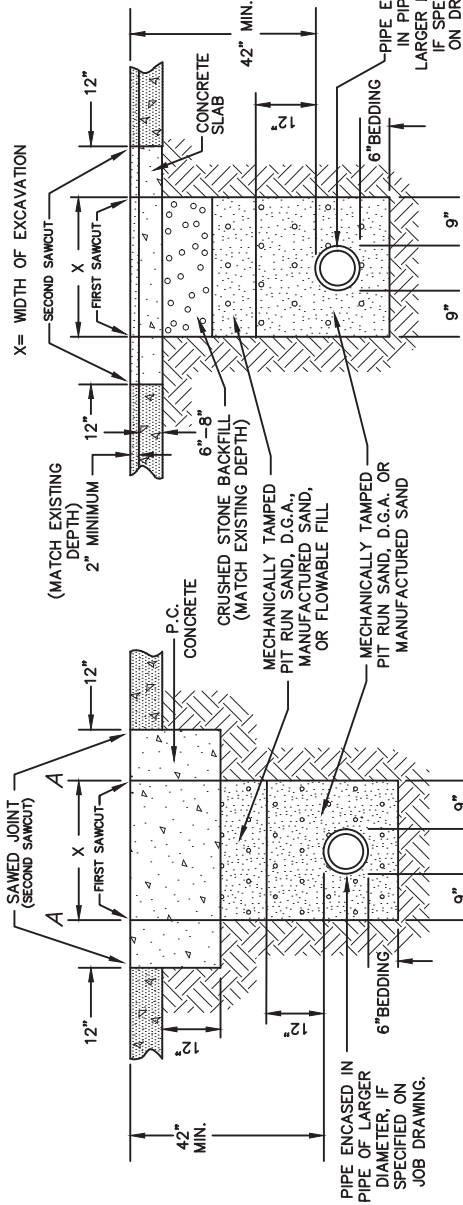
- SERVICE SLEEVES ARE TO BE INSTALLED BY THE DEVELOPER'S WATER MAIN INSTALLATION CONTRACTOR AS SHOWN ON THE PLANS. LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE; THE CONTRACTOR SHALL COORDINATE EXACT SERVICE SLEEVE LOCATIONS WITH THE DEVELOPER OR THEIR REPRESENTATIVE.
- WHEN THE SERVICE SLEEVES ARE SUPPLIED BY THE DEVELOPER, THE COMPANY WILL ADJUST THE DEVELOPER'S PROJECT MATERIAL COSTS TO REFLECT DEVELOPER-DOCUMENTED SLEEVE MATERIAL COST.
- SLEEVES MUST BE INSTALLED AT 36" COVER, AND ALIGNED SO THAT FUTURE INSTALLATION OF SERVICE PIPING CAN BE ACCOMPLISHED WITHOUT PAVEMENT, OR CURB CUTS. SLEEVES MUST BE INSTALLED IN A STRAIGHT LINE WITHOUT ANY BENDS OR OBSTRUCTIONS.
- ALL SERVICE SLEEVES MUST EXTEND AT LEAST 2 FEET BEYOND THE BACK OF CURBS, WITH SEALED END CAPS AND MARKED BY ABOVE-GRADE P.V.C. PIPE THAT SHALL BE PAINTED BLUE ON THE EXPOSED END EXTENDING A MIN. OF 6" ABOVE FINISH GRADE TO EACH END OF THE SERVICE SLEEVE OR OTHER MARKER ACCEPTABLE TO LOUISVILLE WATER.
- ALL SLEEVES MUST HAVE #12 COPPER TRACER WIRE INSTALLED THROUGH EACH SLEEVE AND THE TRACER WIRE MUST BE MADE ACCESSIBLE FOR THE COMPANY'S SERVICE INSTALLER FOR THE PURPOSE OF LOCATING THE SERVICE SLEEVE.



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STANDARD DRAWING			
SERVICE SLEEVE INSTALLATION DETAIL			
DATE	JULY 2021	SCALE	NONE
DRAWING NO.	3805	SHEET	1 OF 1

NOTE: FROM POINTS "A" (CONCRETE PAVEMENT) TO NEAREST JOINT OR BREAK IN PAVEMENT MUST BE SIX(6) FEET OR MORE. IF LESS THAN 6, REMOVE PAVEMENT TO JOINT OR BREAK AND REPLACE ENTIRE SLAB.
CONCRETE SLAB UNDER BITUMINOUS SURFACE TO EXTEND 12 INCHES ON EACH SIDE OF TRENCH.



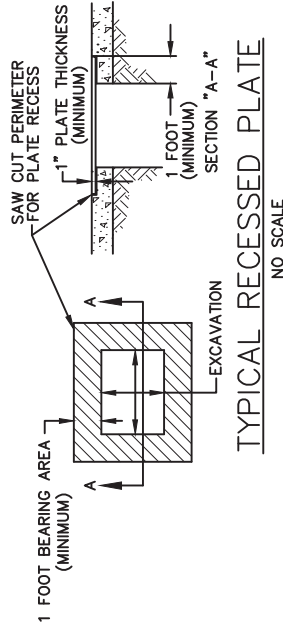
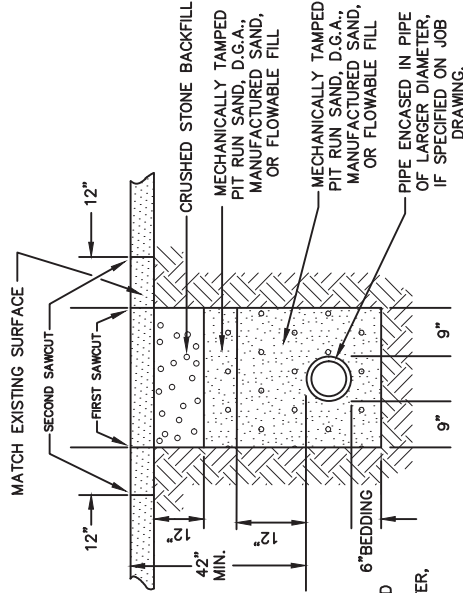
CONCRETE PAVEMENT

BITUMINOUS SURFACE 2" +

(12" CUTBACK IS NOT REQUIRED WHEN FLOWABLE FILL IS USED)

BITUMINOUS SURFACE LESS THAN 2" AND TRAFFIC BOUND MACADAM

(12" CUTBACK IS NOT REQUIRED WHEN FLOWABLE FILL IS USED)



NOTE: REPLACE CONCRETE PAVEMENT WITH NEW PAVEMENT SAME THICKNESS OF EXISTING PAVEMENT + 12".
REPLACE BITUMINOUS PAVEMENT WITH SAME TYPE AND DEPTH AS EXISTING PAVEMENT.

STATE OF KENTUCKY SPECIFICATIONS

1. BEDDING SHALL BE PIT RUN SAND, DENSE-GRADE AGGREGATE, MANUFACTURED SAND MECHANICALLY COMPACTED PER SPECIFICATION SECTION 7.4 AND 7.5.
2. SELECT GRANULAR BACKFILL SHALL COMPLY WITH SPECIFICATION 7.6
3. ANY USE OF NO. 57 STONE FOR BEDDING OR BACKFILL MUST BE APPROVED BY THE DIRECTOR OF ENGINEERING.
4. CONTRACTOR WILL BE HELD RESPONSIBLE DURING THE ENSUING 5 YEARS FOR PROPER BACKFILLING AND REPLACEMENT OF SURFACE DURING THE 5 YEAR PERIOD AFTER THE DATE OF THE FINAL CONTRACT PAYMENT. ANY PAVEMENT SETTLEMENT SHALL BE IMMEDIATELY REPAIRED IN AN APPROVED MANNER AT THE EXPENSE OF THE CONTRACTOR.
5. BACKFILLING UP TO BOTTOM OF SUBBASE ELEVATION SHALL BE COMPLETED PRIOR TO SECOND PAIR OF SAWCUTS AND EXCAVATION FOR THE ADDITIONAL 12" OF CONCRETE ON EACH SIDE OF THE TRENCH.
6. DILUTE SS1H (OR OTHER APPROVED TACK COAT MATERIAL) SHALL BE APPLIED AT THE RATE OF 0.1 GAL. PER SQUARE YARD OVER THE CONCRETE BASE. ALLOW SUFFICIENT TIME FOR IT TO "BREAK" BEFORE THE FINISHED BITUMINOUS CONCRETE IS PLACED, AND SEAL ALL JOINTS SECURELY AFTER PAVING.

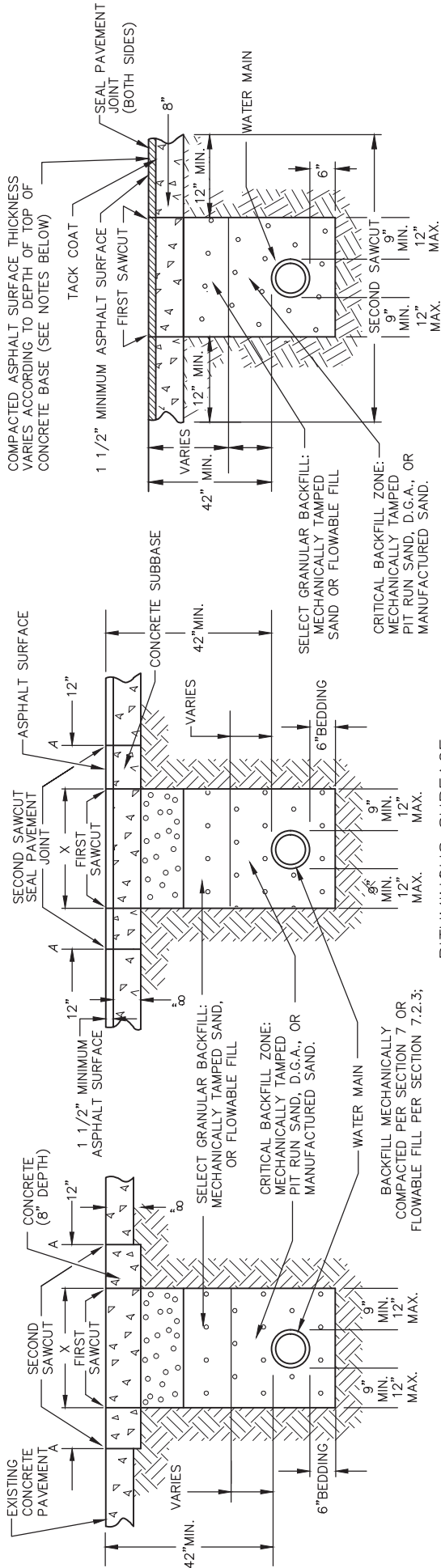
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STANDARD DRAWING

STATE OF KENTUCKY
BACKFILL AND PAVING
RESTORATION

DATE	AUG. 2021	SCALE	NONE
DRAWING NO.	4000	SHEET	1 OF 1

NOTE: FROM POINTS "A" (CONCRETE PAVEMENT) TO NEAREST JOINT OR BREAK IN PAVEMENT MUST BE FOUR (4) FEET OR MORE. IF LESS THAN 4 REMOVE PAVEMENT TO JOINT OR BREAK AND REPLACE ENTIRE SLAB. CONCRETE SLAB UNDER BITUMINOUS SURFACE TO EXTEND 12" ON EACH SIDE OF TRENCH.



CONCRETE PAVEMENT

(12" CUTBACK IS NOT REQUIRED WHEN FLOWABLE FILL IS USED)
SEE KTC SPECIFICATION FOR SPECIAL PROVISIONS SECTION 76 PAGES 1-12 FOR PAVEMENT REPAIRS.

BITUMINOUS SURFACE

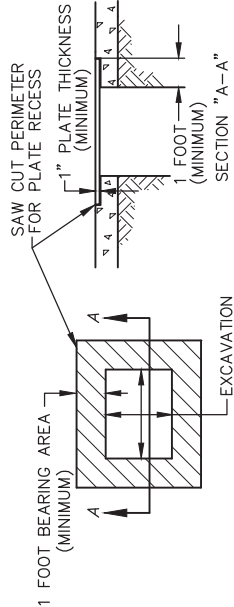
NEW ASPHALT SHALL BE A MINIMUM OF 1 1/2" THICK
(12" CUTBACK IS NOT REQUIRED WHEN FLOWABLE FILL IS USED)
BACKFILL MECHANICALLY COMPACTED PER SECTION 7 OR FLOWABLE FILL PER SECTION 7.2.3;

NOTE: THE CONCRETE BASE SHALL BE FLOAT FINISHED OR BROOMED OR LIGHTLY RAKED AFTER FLOATING TO A UNIFORM GRADE.

BASE OTHER THAN CONCRETE HAVING AN ASPHALT SURFACE

(12" CUTBACK IS NOT REQUIRED WHEN FLOWABLE FILL IS USED)

NOTE: THE CONCRETE BASE SHALL BE FLOAT FINISHED OR BROOMED OR LIGHTLY RAKED AFTER FLOATING TO A UNIFORM GRADE.



TYPICAL RECESSED PLATE

NO SCALE

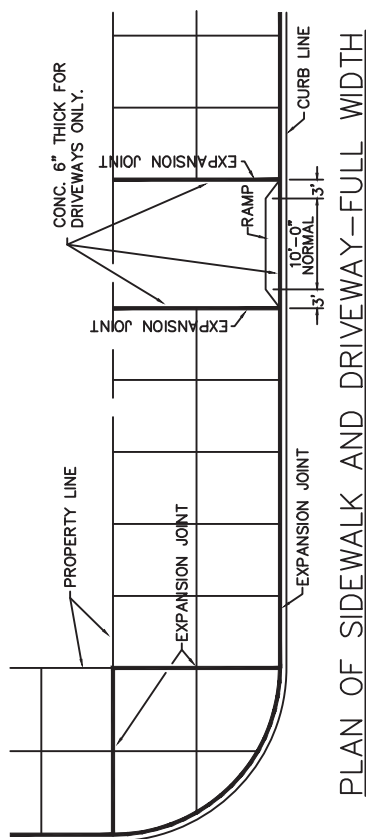
1. CRITICAL BACKFILL ZONE SHALL CONSIST OF MECHANICALLY TAMPED PIT RUN SAND, DENSE-GRADE AGGREGATE, MANUFACTURED SAND PER SPECIFICATION SECTION 7.4 AND 7.5.
2. SELECT GRANULAR BACKFILL SHALL COMPLY WITH SPECIFICATION SECTION 7.6.
3. ANY USE OF NO. 57 STONE FOR BEDDING OR BACKFILL MUST BE APPROVED BY THE DIRECTOR OF ENGINEERING.
4. BACKFILLING UP TO BOTTOM OF SUBBASE ELEVATION SHALL BE COMPLETED PRIOR TO SECOND PAIR OF SAWCUTS AND EXCAVATION FOR THE ADDITIONAL 12" OF CONCRETE ON EACH SIDE OF THE TRENCH, UNLESS FLOWABLE FILL IS USED.
5. PLATES MUST BE SECURED AND/OR RECESSED AT ALL TIMES.
6. CONCRETE CAP MUST BE PLACED UNTIL CONCRETE REACHES STRENGTH REQUIREMENTS (MINIMUM 3500 PSI).
7. DILUTE SS1H (OR OTHER APPROVED TACK COAT MATERIAL) SHALL BE APPLIED AT THE RATE OF 0.1 GAL. PER SQUARE YARD OVER THE CONCRETE BASE. ALLOW SUFFICIENT TIME FOR IT TO "BREAK" BEFORE THE FINISHED BITUMINOUS CONCRETE IS PLACED, AND SEAL ALL JOINTS SECURELY AFTER PAVING.
8. PAVEMENT JOINTS SHALL BE SEALED WITH AN APPROVED JOINT SEALER AFTER PLACEMENT OF THE BITUMINOUS CONCRETE SURFACE. SEE SECTION 11.2 AND 11.3.
9. CONTRACTOR WILL BE HELD RESPONSIBLE DURING THE ENSUING 5 YEARS FOR PROPER BACKFILLING AND REPLACEMENT OF SURFACE. DURING THE 5 YEAR PERIOD AFTER THE DATE OF THE FINAL CONTRACT PAYMENT, ANY PAVEMENT SETTLEMENT SHALL BE IMMEDIATELY REPAIRED IN AN APPROVED MANNER AT THE EXPENSE OF THE CONTRACTOR.

LOUISVILLE WATER COMPANY
550 S. 3RD STREET • LOUISVILLE, KENTUCKY 40202 • (502) 569-3600
SPENCER W. BRUCE, P.E. - PRESIDENT
TIMOTHY KRAUS, P.E. - VICE PRESIDENT / CHIEF ENGINEER

STANDARD DRAWING

METRO LOUISVILLE
BACKFILL AND PAVING
RESTORATION

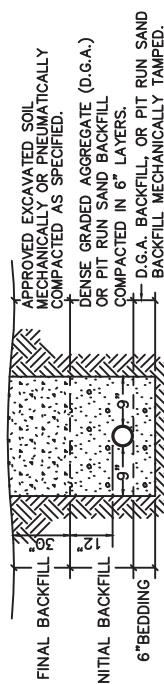
DATE	JULY 2021	SCALE	NONE	SHEET	1	OF	1
DRAWING NO.	4100						



NOTES:

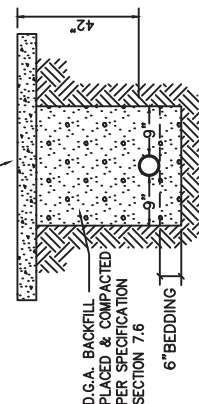
ALL SIDEWALKS SHALL BE 5" THICK. ALL DRIVEWAYS SHALL BE 6" THICK. ALL CONCRETE SHALL BE CLASS "A" (3500 LB. CONCRETE), WOOD FLOAT FINISH FOR ALL WORK. AN APPROVED TYPE OF LIQUID CURING COMPOUND WILL BE PERMITTED. THE EXPANSION JOINTS ACROSS THE LINE OF THE WALK SHALL BE SPACED NOT MORE THAN 50' APART. EXPANSION JOINTS PARALLEL TO THE LINE OF WALK WILL BE REQUIRED AT THE BACK OF CURB FOR FULL WIDTH WALKS. AT DRIVEWAYS, EXPANSION JOINTS SHALL BE USED ON BOTH SIDES AGAINST THE SIDEWALK. OTHER JOINTS DETERMINED BY THIS LOCATION. AT DRIVEWAYS AND ENTRANCE WALKS ACROSS GRASS PLOTS, AN EXPANSION JOINT SHALL BE USED AT BACK OF CURB. ALL EXPANSION JOINTS SHALL BE APPROVED NON-EXTRUDING PREFORMED STRIPS 1/2" THICK. BLOCKS SHALL BE MARKED OR SCORED IN SUITABLE SIZED BLOCKS, BUT NOT LESS THAN 4' OR MORE THAN 6' ON A SIDE. CONTRACTION JOINTS (PLANES OF WEAKNESS) SHALL BE AT EVERY THIRD BLOCK AND SHALL BE CUT AT LEAST 1 1/2" IN DEPTH (IN LIEU OF A SCORE). AT BACK OF WALK, TERRACE SHALL BE HAND TRIMMED OR FINISHED TO A 1 TO 1 SLOPE OR FLATTER.

ALL SIDEWALK AND DRIVEWAY CONSTRUCTION IN THE PUBLIC WAYS OF THE CITY OF LOUISVILLE SHALL CONFORM WITH THE REQUIREMENTS ON THIS SHEET UNLESS OTHERWISE APPROVED IN WRITING BY THE CHIEF ENGINEER. MINIMUM WIDTH OF SIDEWALK SHALL BE 5' EXCEPT WITH PERMISSION OF CHIEF ENGINEER.



BACKFILL NOT UNDER PAVEMENT

CLASS "A" 3500 lb. 7
CONCRETE- 4 1/2"
(6" CONC. FOR DRIVEWAYS)



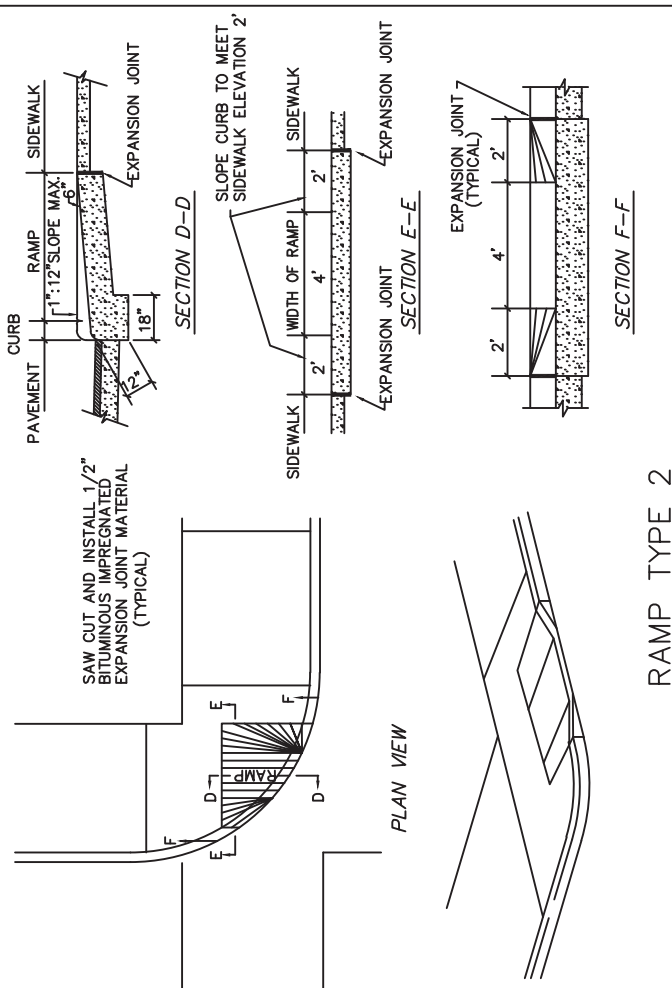
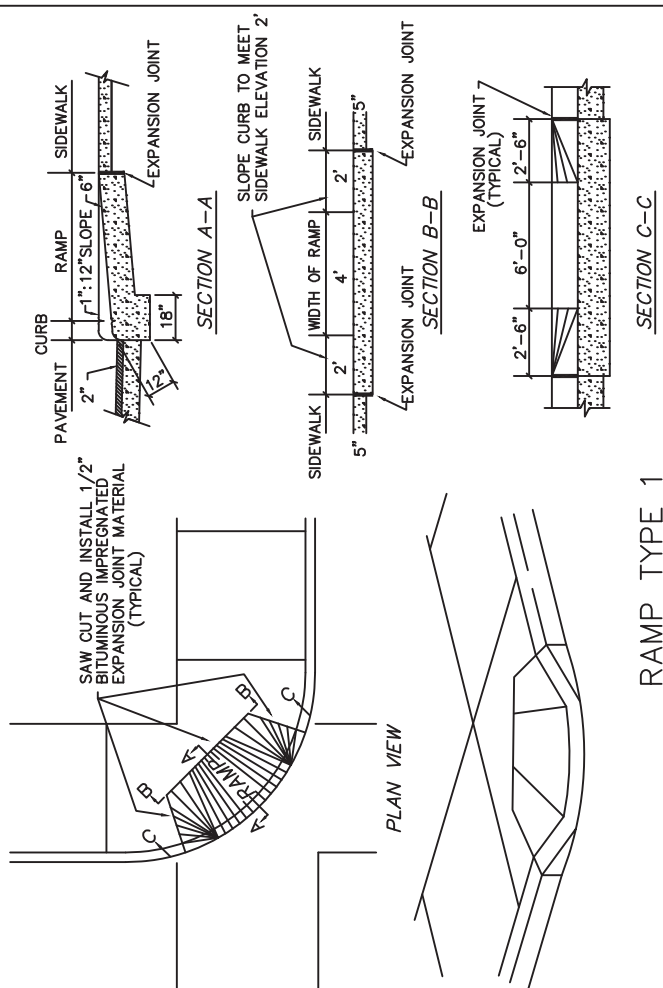
BACKFILL UNDER
SIDEWALK

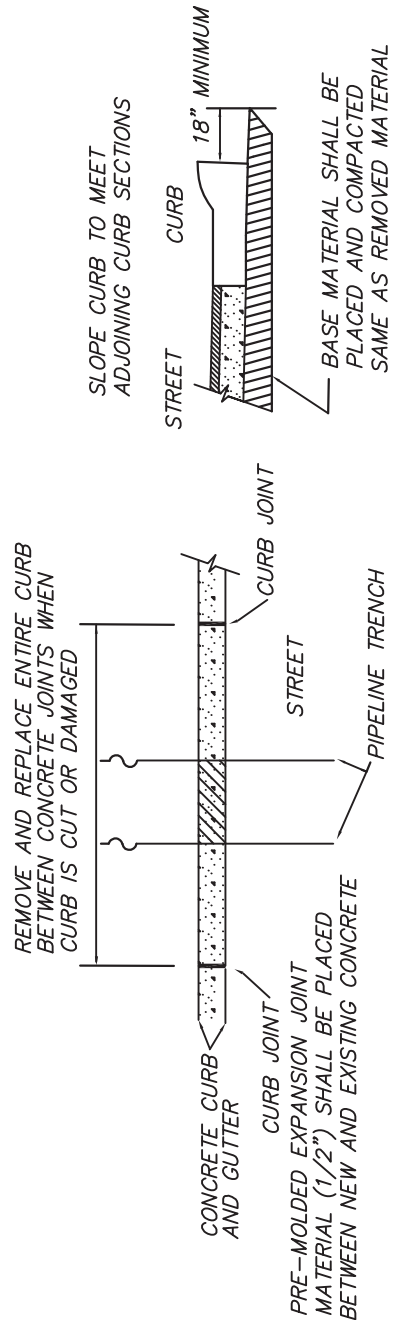
STANDARD DRAWING

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SPENCER W. BRUCE, P.E. - PRESIDENT
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SIDEWALK / BACKFILL DETAIL

DATE	MAY 2021	SCALE	NONE
DRAWING NO.	4400	SHEET	1 OF 1





PLAN VIEW

CURB RESTORATION FOR PIPELINE INSTALLATION

SECTION

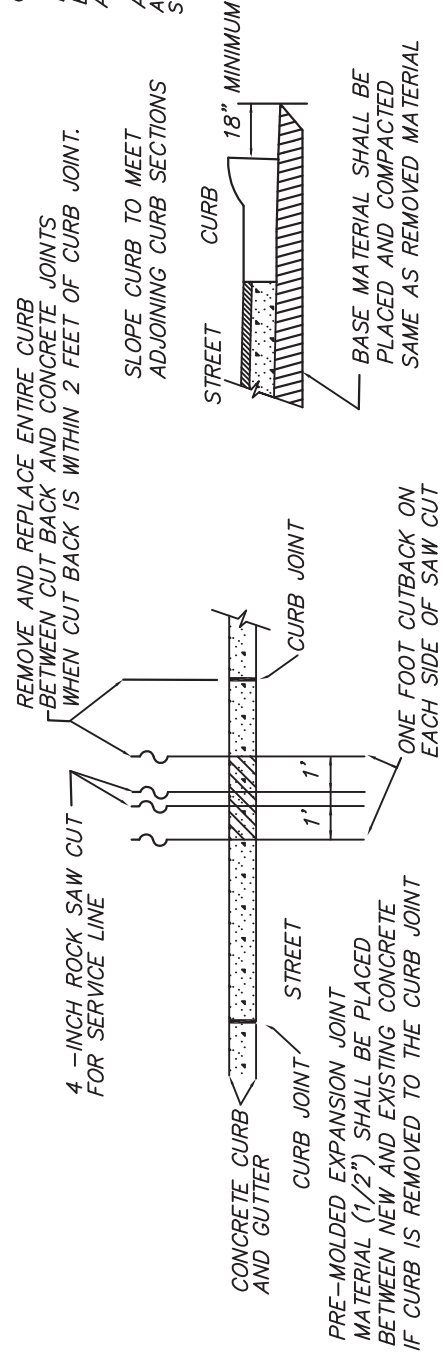
NOTES:

ALL CONCRETE SHALL BE A MINIMUM CLASS "A" (3500 lb. CONCRETE).

AN APPROVED TYPE OF LIQUID CURING COMPOUND WILL BE REQUIRED ON CONCRETE.

EXPANSION JOINT MATERIAL SHALL BE USED BETWEEN CURB JOINTS AND CURBS AND ADJOINING SIDEWALKS.

ALL EXPANSION MATERIAL SHALL BE APPROVED NON-EXTRUDING PREFORMED STRIPS (1/2" THICK).



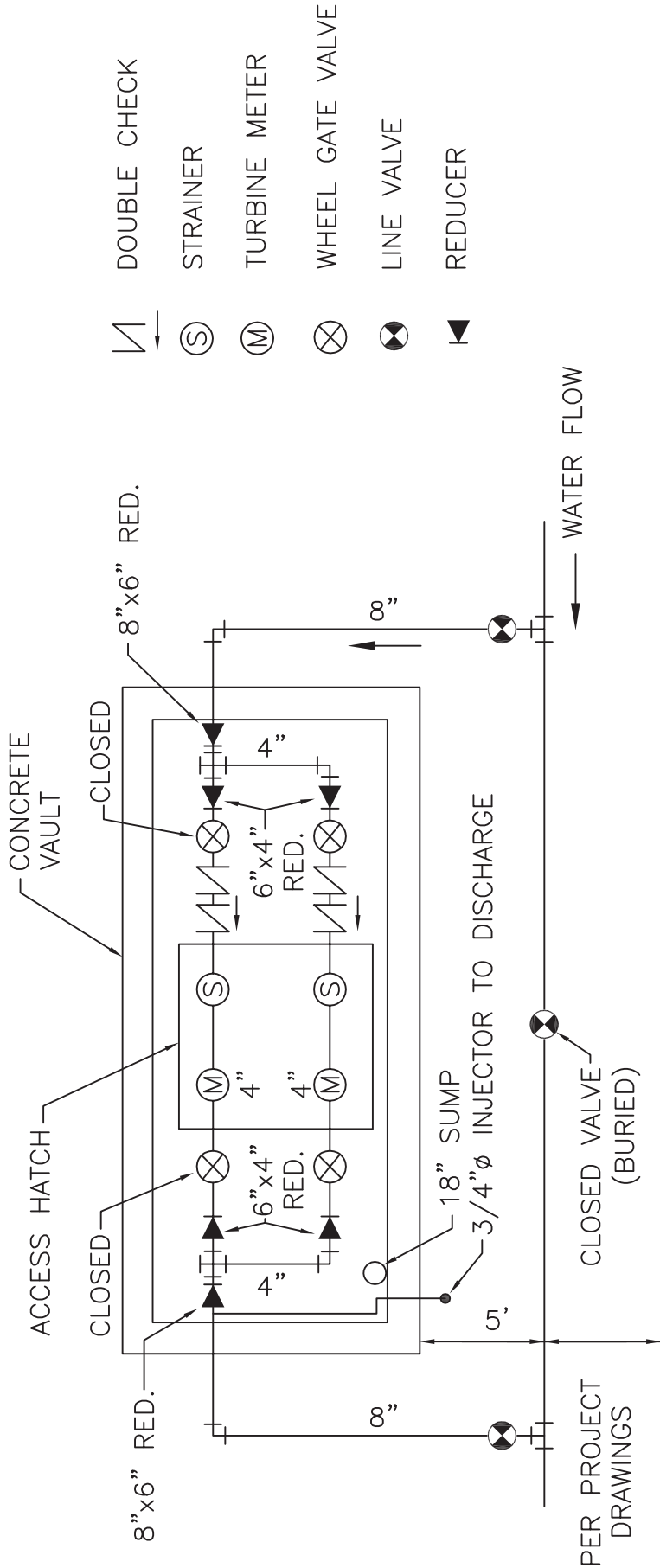
PLAN VIEW

SECTION

CURB RESTORATION FOR SERVICE LINE INSTALLATION

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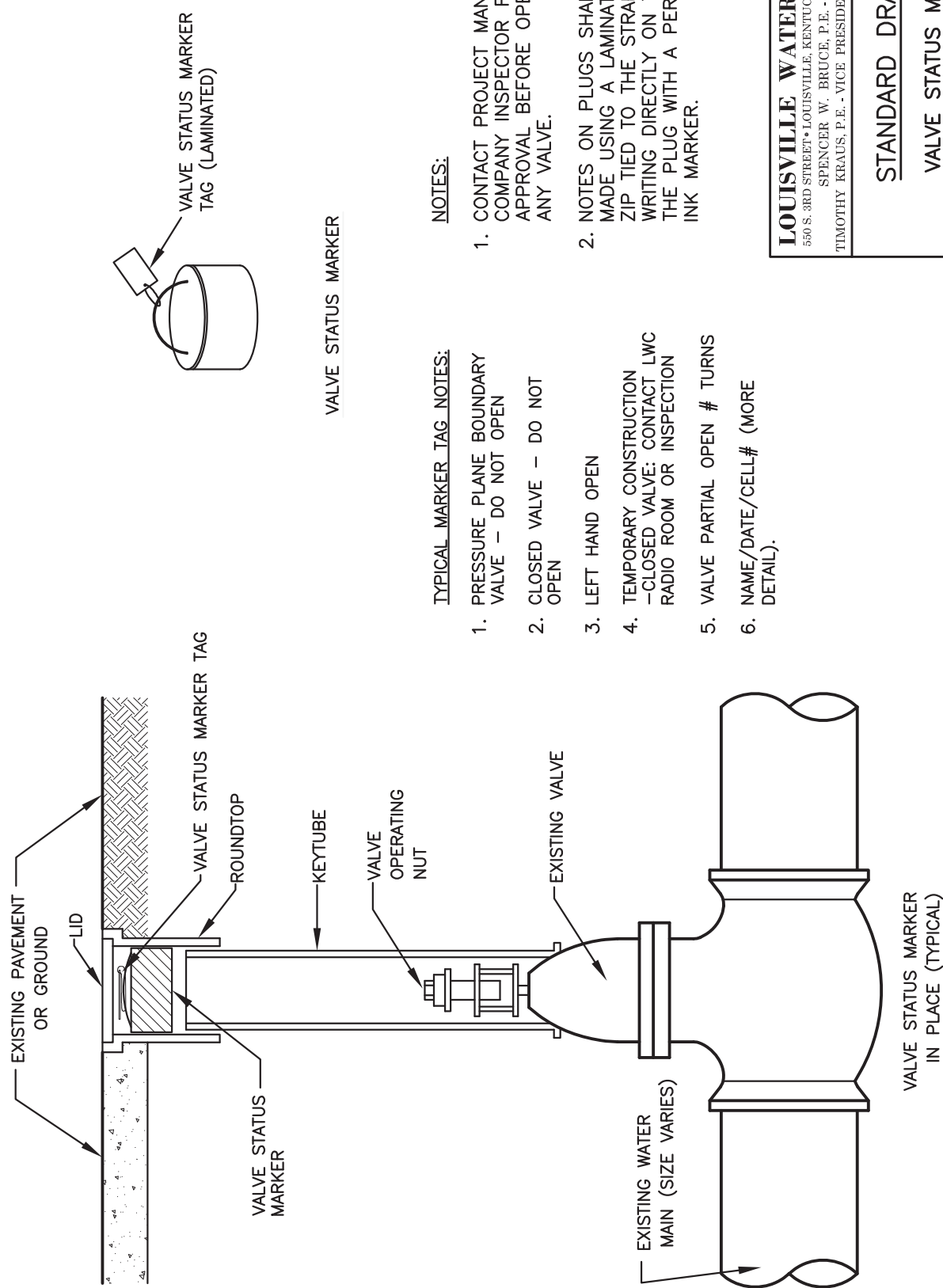
STANDARD DRAWING			
CONCRETE CURB AND GUTTER RESTORATION DETAIL			
DATE	AUGUST 2018	SCALE	NONE
DRAWING NO.	4410	SHEET	1 OF 1



- DOUBLE CHECK
- STRAINER
- TURBINE METER
- WHEEL GATE VALVE
- LINE VALVE
- REDUCER

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STANDARD DRAWING		
TYPICAL MASTER METER DETAIL		
DATE	AUGUST 2018	SCALE NONE
DRAWING NO.	4600	SHEET 1 OF 1



- TYPICAL MARKER TAG NOTES:**
1. PRESSURE PLANE BOUNDARY VALVE – DO NOT OPEN
 2. CLOSED VALVE – DO NOT OPEN
 3. LEFT HAND OPEN
 4. TEMPORARY CONSTRUCTION –CLOSED VALVE: CONTACT LWC RADIO ROOM OR INSPECTION
 5. VALVE PARTIAL OPEN # TURNS
 6. NAME/DATE/CELL# (MORE DETAIL).

- NOTES:**
1. CONTACT PROJECT MANAGER OR COMPANY INSPECTOR FOR APPROVAL BEFORE OPERATING ANY VALVE.
 2. NOTES ON PLUGS SHALL BE MADE USING A LAMINATED TAG ZIP TIED TO THE STRAP OR BY WRITING DIRECTLY ON TOP OF THE PLUG WITH A PERMANENT INK MARKER.

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SPENCER W. BRUCE, P.E. - PRESIDENT
TIMOTHY KRAUS, P.E. - VICE PRESIDENT / CHIEF ENGINEER

STANDARD DRAWING

VALVE STATUS MARKER

DATE	FEBRUARY 2020	SCALE	NONE
DRAWING NO.	5005	SHEET	1 OF 1

SUPPLEMENTARY SPECIFICATIONS

BROWNSBORO ROAD (US 42 & KY 22) & WATERTON EXPRESSWAY (I-264) WATER MAIN RELOCATION PROJECT KYTC Item No. 5-804.00

PROJECT LIMITS

Limits of the referenced project include portions of the **Watertson Expressway (I-264) near the Brownsboro overpass, Brownsboro Road (US 42 & KY 22), Rudy Lane, Merrifield Road, and adjoining streets.** See plans for location.

PROJECT SUMMARY

The referenced project consists of the supply and installation of a total of **6695 +/-** linear feet of water main, including **3905 +/-** linear feet of 12-inch Pressure Class 350 ductile iron water main, **1830 +/-** linear feet of 12-inch Pressure Class 350 restraint joint ductile iron water main, **140 +/-** linear feet of 8-inch Pressure Class 350 ductile iron water main, **260 +/-** linear feet of 8-inch Pressure Class 350 restraint joint ductile iron water main, **400 +/-** linear feet of 6-inch Pressure Class 350 ductile iron water main, and **160 +/-** linear feet of 4-inch Pressure Class 350 ductile iron water main and associated appurtenances. Also, included with the project is the supply and installation of the following: **355 +/-** linear feet of 24-inch steel casing pipe (bore and jack), **135 +/-** linear feet of 24-inch steel casing pipe (open cut), **180 +/-** linear feet of 16-inch steel casing pipe (bore and jack), **8** fire hydrants, and the supply and transfer, renewal, relocation, or discontinue of **40** customer services. Fire hydrant removal, main cut and plugs, and restoration on and along Project Limits as stated above shall be included. The contractor shall install all materials required for the completion of this project.

SALES TAX EXEMPTION

On March 24, 2023, Governor Beshear signed House Bill (HB) 360 into law, introducing a new sales tax exemption for specific water and/or sewer utilities. HB 360 establishes an exemption for materials purchased by a contractor for installation in a water or sewer project for public utilities outlined in Page 58 and 59 of the bill. The sales tax exemption is retroactive and takes effect from January 1, 2023.

A full copy of the HB 360 can be found at:

<https://apps.legislature.ky.gov/recoredocuments/bill/23RS/hb360/bill.pdf>

Louisville Water is a quasi-municipal corporation covered under HB 360, making all materials purchased for this project tax-exempt. The bid price for this project shall include all applicable governmental fees and taxes except Kentucky sales and usage tax. Sales tax for materials purchased for this project shall be exempt from this bid. Louisville Water will issue a letter of validation for tax exemption to the successful bidder to be presented to vendors when purchasing all materials for this project.

SCOPE OF WORK

1. Supply and Install **3905+/-** linear feet of 12-inch Pressure Class 350 ductile iron water main.
2. Supply and Install **1830 +/-** linear feet of 12-inch Pressure Class 350 restraint joint ductile iron water main.
3. Supply and Install **140+/-** linear feet of 8-inch Pressure Class 350 ductile iron water main.
4. Supply and Install **260 +/-** linear feet of 8-inch Pressure Class 350 restraint joint ductile iron water main.
5. Supply and Install **400+/-** linear feet of 6-inch Pressure Class 350 ductile iron water main.
6. Supply and Install **160+/-** linear feet of 4-inch Pressure Class 350 ductile iron water main.
7. Supply and install **355+/-** linear feet of 24-inch steel casing pipe (bore and jack).
8. Supply and install **135+/-** linear feet of 24-inch steel casing pipe (open cut).
9. Supply and install **180+/-** linear feet of 16-inch steel casing pipe (bore and jack).
10. Supply and install materials necessary to safeload and abandon (in place) **230 +/-** linear feet of 8-inch water main under I-264.
11. Complete all tie-ins as shown on the plans.
12. Supply and install gate valves including fittings, restraints, valve boxes and lids, and keytube pipes as shown on the Project Drawings.
13. Supply and install miscellaneous fittings, bends, sleeves, and restraints necessary for tying into existing water mains as shown on the Project Drawings.
14. Supply and install miscellaneous fittings, bends, sleeves, and restraints necessary to avoid conflicts with existing and proposed infrastructure.
15. Remove **8** fire hydrants and Supply and Install **8** fire hydrants.
16. Supply all materials and transfer, renew, relocate and/or discontinue **40 +/-** customer services. See plans for service sizes and work type.

17. **All street asphalt pavement restoration is included in this scope of work.** Immediately after installing pipe in pavement, the Contractor shall compact trench and bring concrete cap flush to surface. Mill and pave as shown on the Project Drawings and in accordance with KYTC and Louisville Metro Standards. All restoration, including but not limited to driveway, sidewalk, yard, etc. shall be completed by the Contractor.
18. Provide traffic control including policing, barricades, signs, warning devices, flaggers, etc.
19. Ground restoration and cleanup work, including seed and straw, straw blanket w/ seed and/or sod in grassy areas shall be performed by a licensed Landscaping Company. See additional information regarding Site Restoration in Restoration section following.
20. Contractor shall supply and install sedimentation and erosion control measures per MSD standards including submittal of erosion control plan and obtaining the necessary permits and approval.
21. Perform all site work, utility relocations, and all other work required to complete the project. Normal work shall be based on KYTC and Louisville Metro permits. In some cases, the permitting authorities restrict work hours from 9am to 3pm. Longer hours may be applied for, upon request, but all work must adhere to the final permitted hours and conditions. No additional payment will be made if the permitting authorities restrict work hours.
22. Contractor shall not mobilize until Pre-construction Meeting has been completed, shop drawings approved, Pre-construction Video completed, and submitted and Contractor has received approval from the Louisville Water Company Project Manager and the KYTC Project Manager that all permits have been approved

GENERAL INFORMATION

23. **The contractor is bound by and shall comply with the provisions of the "Louisville Water Company Technical Specifications and Standard Drawings for Pipeline Construction" (2022 Edition) which shall govern work on this project with the following additions/exceptions:** All materials shall be supplied and installed by the Contractor. Louisville Water Company will not supply any material. Contractor shall disregard any reference in the Louisville Water Company Technical Specification where it says Louisville Water Company shall/will supply materials. Contractor shall comply with: Louisville Water 4" – 20" Pipeline Material Specification. Both specifications can be found and downloaded on the Web at "www.louisvillewater.com" under the "Work With Us" tab.

GENERAL REQUIREMENTS

24. All work performed for the installation and relocation of the water main and related construction must be performed by an Louisville Water Company pre-qualified contractor in the following category:
- Category 1: 4" – 16" Ductile Iron Water Main

MATERIAL TO BE SUPPLIED BY THE CONTRACTOR

25. Unless otherwise approved by the Louisville Water Company Project Manager, all pipe replacement work in this project scope shall be constructed with Contractor-supplied Pressure Class 350 ductile iron pipe in accordance with the plans using traditional trenching techniques. The contractor shall provide Louisville Water Company with material submittals for all materials that the contractor plans to use for Louisville Water Company work including but not limited to pipe, valves, fittings, casing pipe, etc. The submittals shall be reviewed and approved by the Louisville Water Company Project Manager prior to installation of any material. The contractor shall provide alternate materials for any materials that the Louisville Water Company Project Manager rejects until an acceptable material is selected by the contractor as approved by the Louisville Water Company Project Manager. Material submittal review takes approximately two weeks for each submittal.
26. The Contractor shall supply all the materials required for the successful completion of the project, except for the meters and dielectric couplings. The Contractor-supplied material shall be manufactured within the same twelve (12) month period as the delivery to the jobsite and must be installed per the Manufacturer's installation instructions.
27. Submittals/shop drawings and Manufacturer's literature for all supplied materials shall be promptly submitted to the Louisville Water Company Project Manager for approval and shall be submitted before ordering of such material.
28. At the time of delivery to the jobsite, all materials shall be new, clean, and free from dirt and debris. Any damaged or defective material will be rejected and will not be allowed to be installed. Contractor shall be responsible to remove and replace any damaged or defective materials at their own expense.
29. Coordinate submittal with construction schedule and fabrication lead-times.
- a. Provide a list of submittals.
 - b. No extension of Contract Time will be authorized due to failure to transmit submittals in time to permit processing sufficiently in advance of when materials are required in the Work.
 - c. Louisville Water Company Project Manager will not accept submittals from sources other than Contractor.

- d. Digital Submittals are the preferred method and must be in the format of pdf or AutoCad. Paper submittals are also acceptable. Furnish two (2) copies of items submitted for review. One (1) copy will be returned to the Contractor following review, and one (1) copy will be retained by the Louisville Water Company Project Manager.
30. Compliance with specified product requirements remains Contractor's responsibility regardless of Louisville Water Company Project Manager's review.
31. Louisville Water Company Project Manager may respond as follows:
- a. Rejected – Item is wholly rejected. Contractor to resubmit different item.
 - b. Revise & Resubmit – Item substantially meets criteria, however, additional information, materials, clarity, administrative numbering, or other requires the submittal to be resubmitted for clarification to Louisville Water Company Project Manager, Contractor, and/or Supplier.
 - c. No Markings – Contractor to furnish the item with all notes made by Louisville Water Company Project Manager on submittal. Resubmittal not necessary.
 - d. No Exceptions Taken – Acceptable submittal. Resubmittal not necessary.

TRAFFIC CONTROL

32. This project will be bid and constructed in conjunction with the Kentucky Transportation Cabinet's (KYTC) 5-804 Brownsboro Road (Us 42 & Ky 22) & Waterson Expressway (I-264) Road Improvements project; therefore, no KYTC permits will be required for work within their right-of-way. Louisville Metro permits will be required for all side Metro Street work. The contractor shall obtain all permits through KYTC and follow their procedures as specified.

VIDEO RECORDING

33. Please refer to Section 1.6 of the LWC Technical Specifications 2022 for Video Recording. In addition, video recording shall be provided in digital format on a USB flash drive prior to start of construction.

SITE WORK

34. Field modifications to the proposed pipeline alignment may be necessary to avoid or minimize the effects of potential conflicts. To avoid potential conflicts with existing utilities located perpendicular and/or parallel to the proposed main, the Contractor should anticipate the need to use offsets, bends and fittings when

installing the new main, and for large service connections at no additional cost to Louisville Water Company or KYTC.

35. Utility locations are shown on the plans from available information and are approximate. The contractor is responsible for locating all existing utilities including water line facilities prior to start of construction. The contractor is responsible for relocating any existing utility that is in conflict with the proposed construction at no additional cost to Louisville Water Company or KYTC.

RETURN OF USED HYDRANTS

36. Fire hydrants that are discontinued, abandoned or replaced shall be removed and returned with caps to the Louisville Water Company Allmond Avenue Warehouse. The contractor shall also complete the "RETURN OF USED FIRE HYDRANTS" form, sign and submit the form to the Louisville Water Company Inspector for record keeping and proper accounting. Any removed hydrant that is not returned to the Louisville Water Company warehouse will be invoiced to the contractor in the amount of \$75 per hydrant.
37. Fire Hydrant Extension Kits shall not be used for any fire hydrant installation on this project. Contractor shall adjust the depth of the water main at the location where a hydrant will be installed to accommodate the height of a standard fire hydrant.

EXCAVATION

38. Excavation on this project shall be unclassified.
39. Rock shall be removed using mechanical methods (backhoe, hoe ram, or rock trenching machine). Blasting shall not be permitted.

CUSTOMER SERVICES

40. Prior to beginning any work that requires a shut-down of the main or individual services, the Contractor shall make a thorough evaluation of each service connection and meter vault within the limits of the shut-down. Discrepancies between the field conditions and the Project Drawings shall be discussed with the Louisville Water Construction Inspector. Contractor is responsible for obtaining all plumbing permits required for any service work.
41. All existing 5/8" services shall be renewed with a 3/4" service line.
42. All double setter meters shall be relocated. Each service shall be renewed and installed with its own meter vault. Each service shall be reconnected to the existing private customer service at the property line if possible. In some cases, it may not be practical to connect to the private service line at the property line. The

Contractor shall anticipate the requirement of additional service line and shall install new service line by digging on the private side until the service line is located at no additional cost to Louisville Water. All work on private property and for additional service line shall be completed by a licensed plumber at no additional cost to Louisville Water.

43. Contractor shall not use couplings while installing service lines under paved areas. Full length of service line shall be installed under paved surfaces.
44. The renewal/relocation of customer services after the main is placed in service shall require the contractor to excavate and locate the property service connection, which is usually a few feet away from the meter vault. If the property service connection is not found, the Contractor shall seek permission from the property owner to excavate on private property. The Contractor shall continue to excavate up to 10 feet beyond the property line onto private property to find the connection and determine the customer's private service line material.

Louisville Water Construction Inspector will verify the service line material on the customer side of the property line connection.

If the material on the customer side is not lead, the Contractor shall renew/relocate the entire public side service line from the main to the customer's connection.

If the material on the private customer's side is lead or galvanized, then the Inspector will contact the customer to make them aware of the replacement work to be completed by the contractor and the existence of lead/galvanized on the customer's side of the service line. The Inspector shall also inquire if the customer is willing to have their private service line replaced at no charge to the customer.

- a. If the customer is willing to have their private lead service line replaced, the inspector will obtain a Work Authorization Form (WAF) from the property owner. The Contractor shall submit a change order to replace the private service line from the property service connection up to and including the interior shut off valve, utilizing a licensed plumber. The licensed plumber is responsible for obtaining the plumbing permit.
- b. If the customer is not willing to replace their lead/galvanized service line, the Contractor will replace the entire Louisville Water service line from the main to the customer's connection and install a dielectric between the end of the new Louisville Water service tail piece and the customer's lead service line. The dielectric will be composed of a 24" section of like diameter Schedule 80 PVC pipe and a plastic universal transition coupling (supplied by Louisville Water). If the customer's service line is less than 10 feet in length as measured from the building to the dielectric connection, Louisville Water will retain a licensed electrician to install an appropriate grounding system before service is relocated.

- c. If the property owner is not home during the attempt by the Inspector to notify them of the lead/galvanized service, the Inspector shall leave a door hanger with information about their private service line, Louisville Water's desire to replace the service line and a Work Authorization Form. The Owner has five (5) days to respond to the WAF request. Should the owner not respond during this five (5) day period, it shall be assumed that the owner does not want their private service line replaced. The Contractor must wait until this five (5) day period expires before renewing the public side of the service line and installing a dielectric coupling. If the service is renewed with no response, the inspector will leave the water turned off and leave a "Major Disturbance" notification with the "need for flushing" box checked.
 - d. If the property owner does not want their galvanized service line replaced, the contractor shall tie into non-deteriorated material with the service tailpiece and dielectric coupling. If the Contractor encounters a customer's service line whose material is corroded galvanized and it is found to be difficult to make the connection, the Contractor shall seek permission from the property owner to excavate onto the private property. The Contractor shall continue to excavate up to 10 feet beyond the property line location on the private property to find non-deteriorated line to tie into the tailpiece. All work on private property and for additional service line that does not replace the entire private service line, shall be completed at no additional cost to Louisville Water.
- 45. All service lines within the limits of the project, either shown or not shown on the Project Drawings, must be protected. The Contractor using a licensed plumber must repair all damaged service lines at no addition cost to Louisville Water.
 - 46. During service renewals, meter vault frames and covers that have the old-style locking mechanisms shall be replaced with new frames and covers (supplied by the Contractor). Additionally, where covers are broken or inoperable, the covers and frames shall be replaced. The existing meter vault shall be reused for the renewed service provided the vault is in proper working condition. Vaults that are crushed or broken, or improperly sized, shall be removed and replaced with new vaults (supplied by the contractor).
 - 47. The Contractor shall note any large and/or critical customer services located within the limits of this project. Planned water outages affecting these services may require extensive coordination with the affected customers. The Contractor shall provide to the LWC Construction Inspector, a minimum two-week prior notice of planned water outages that affect large services (2-inch or larger) or critical customer services connected to medical facilities, schools, day cares, or similar facilities. The Contractor shall anticipate the need to schedule service work and tie-ins requiring planned water outages around the needs of these facilities.

48. Prior to discontinuing a service, the site shall be thoroughly investigated by the Louisville Water Construction Inspector. If the service requires reconnection (transfer or renewal), then the Contractor shall make the appropriate connection. The Contractor shall be compensated in accordance with the Supplementary Unit prices included with the Bidders Proposal.

Services shall be discontinued in accordance with Section 10.17 of the Technical Specifications, except that the discontinuation of services at the main will not be required for a main that is scheduled for abandonment as part of this project.

At some locations, meters and meter vaults have already been removed and/or abandoned, but the service lines and taps may still be in place and live. The Contractor shall exercise caution in the vicinity of these services to reduce the risk of “pulling” a live corporation.

FLUSHING OF LEAD SERVICES

49. The Contractor shall be responsible for proper disposal of the flushed water to make sure the water is directed to drainage line. Contractor shall use caution not to flood the customer’s yard

INSTALLATION, HANDLING AND STORAGE

50. Forklifts’ forks or other material handling equipment shall not be inserted into the barrels of pipe, valves or other fittings to lift or move them or for any other construction activity.
51. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.
52. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
53. Pipe shall not be stored on-site for periods greater than 3 months or as approved by the Louisville Water Company Inspector and Louisville Water Company Project Manager.
54. Pipe shall be stored and stacked per the pipe supplier’s guidelines and as approved by the Louisville Water Company Inspector and Louisville Water Company Project Manager.

BACKFILLING PROCEDURES AND TAMPING

55. When under the *pavement in state right-of-way*, the final backfill material shall be selected, placed and compacted in accordance with section 7 of the Louisville Water Company Technical Specifications and Standard Drawing No. 4000 – State of Kentucky Backfill and Paving Restoration.
56. When under *pavement other than state right-of-way*, (side streets, driveways, and entrances), the final backfill material shall be selected, placed and compacted in accordance with section 7 of the Louisville Water Company Technical Specifications and Standard Drawing No. 4100 – Louisville and Jefferson County Metro Backfill and Paving Restoration.
57. If septic system / lateral field is encountered, contractor shall put 6 inches of compacted DGA on all sides of pipe for a distance of 5 feet on each side of line encountered.

PLACING WATER MAIN IN SERVICE

58. All new ductile iron and PVC pipe installations longer than 50 feet shall be pig cleaned. Ductile iron and PVC pipe sections shorter than 50 feet in length may require pig cleaning at the direction of the Louisville Water Company Inspector. Pigs shall be used one time and discarded.
59. A chlorine injection system shall be used to fill the new main. The Louisville Water Company Inspector will provide the equipment needed to inject the chlorine-based solution into the main. The Contractor shall assist the Louisville Water Company Inspector with the connection of hoses and the operation of valves.

WORK SCHEDULE

60. LWC observes designated holidays. No work shall be performed during the holiday periods. All equipment, personnel, and materials shall be removed from the work area. All excavations shall be backfilled and restored. All street cuts shall be paved or patched.
61. A 'Staging 'Plan' for how the work is to proceed is to be presented by the contractor at the Preconstruction meeting. Staging of the work should try to minimize the time between installing the new main and working on or removing the existing water main so that the time between the restorations of the two events is minimized.
62. Normal work hours shall be limited to work hours approved by KYTC. All other work hour requests must be submitted by the contractor to the approving agency for approval after standard applications have been made and approved.

63. The Contractor shall anticipate the need to work after-hours and on weekends to accommodate all critical customer needs as directed by the Louisville Water Company Project Manager. In addition, after-hour or weekend work may be needed to shut down transmission mains or to connect to a tank. All such work will be considered incidental to the project and no additional compensation will be provided. This after-hour work must be pre-approved by the Louisville Water Company Project Manager.
64. In the case of an emergency, the Contractor shall immediately notify the Louisville Water Company Inspector. If the contractor cannot reach the inspector, then they shall immediately notify the Radio Room or Louisville Water Company Project Manager. Prior to the actual shut-off, an attempt shall also be made to contact each customer (door-to-door) to alert customers of the emergency situation and the need to shut-off the main.

EROSION CONTROL MEASURES

65. An erosion control plan is required for this project. An erosion control plan shall be prepared by the contractor and submitted to Louisville Water Company for review. The erosion control plan shall be submitted by the contractor to the respective agencies upon request of Louisville Water Company. The contractor is responsible for maintaining all erosion control measures within the project limits in accordance with the latest MSD, Louisville Metro and Louisville Water Company specifications. The contractor is responsible for making all erosion control modifications within the project limits required by MSD, Louisville Metro, Louisville Water Company, or any other permitting authority at no additional cost to Louisville Water Company. The contractor is responsible to rectify any disputes that may arise due to inadequate erosion control measures as determined by MSD, Louisville Metro, Louisville Water Company, or any other permitting authority.
66. As a minimum, erosion control features shall be provided at catch basins, headwalls and in small ditches where associated construction procedures may cause the transport of sediment into the storm drainage system. When soil is disturbed within grassy areas, erosion control protection shall also be provided at yard drains. Care will be required to minimize stockpiling or placing backfill or excavated materials on roadways.

PIPELINE CONSTRUCTION

67. Prior to the start of any work at the site (including saw-cutting), the Contractor and Louisville Water Company Inspector shall review the proposed pipeline alignment with respect to the utility locations marked by the local utility locate company, trees, and other existing site improvements.

68. Standard burial depth for new water mains is 42 inches, as measured from the top of ground to the top of the newly installed pipe. While the Contractor is expected to adhere to this standard burial depth requirement at all times, it is understood that revisions to the burial depth will be necessary when the installation of mains and large services conflict with existing utilities and other site improvements. Prior approval from the Louisville Water Company Project Manager is required for these deviations.
69. The type, size and condition of the existing pipe shall be verified prior to completing tie-ins. When the existing pipe is other than indicated on the Project Plans, the Louisville Water Company Inspector or Louisville Water Company Project Manager shall be contacted immediately to assess the need for revising the tie-in location. The Contractor shall be compensated in accordance with the supplementary unit prices for any additional pipeline installed to revise the tie-in location.
70. All tree root systems that require boring shall be bored a minimum of 30 feet; 15 feet either side of the tree trunk. The bore shall be located a minimum of 4 feet below the ground surface and a minimum of 5 feet from the center of the tree.

RESTORATION

71. Areas that have landscaping shall be replaced with like materials (mulch, plants, flowers, lawn sod, etc.). The Contractor shall contact each customer with landscaping to be disturbed to give them the option of removing it prior to construction and replacing it. If the customer does not choose this option, the Contractor shall remove it for them or replace it with like materials following construction.
72. For ground restoration of all disturbed areas; including both landscaping and restoration of grassy areas within; lawns, easements and right-of ways, the contractor shall hire a licensed landscaper to perform the work. Landscaping Company's information must be provided to the LWC Project Manager for approval. The contractor shall not use its own forces to perform final ground restoration. Ground restoration shall be warranted for two years from time of acceptance of installation.
73. For all disturbed areas including lawns, the Contractor shall hire a licensed landscaper to perform the yard restoration. Landscaping Company's information must be provided to the LWC Project Manager for approval. The Contractor shall not use its own forces to perform the restoration. Ground restoration of disturbed grassy areas shall consist of installing, seed and straw, straw blanket with seed, or installation of sod then rolled. The Contractor shall agree to install either, at a customer's request when agreed by LWC Project Manager. Sod is to be placed on lawns that have been sodded within the last 2 years. Sod may be approved for select areas where a homeowner has recently

installed sod or in special cases where the lawn is in pristine condition. The type of grass seed or sod used shall match the existing grass. Erosion control blanket containing seed (min. 6' wide) shall be placed/pinned along centerline of roadside swales/vegetative ditches or sloped yard areas subject to erosion. Prior to placing seed, straw, blanket or sod, the area shall be leveled to conform with existing grade, graded to prevent ponding and rocks removed. Place and till 4" of topsoil, rake and feather edges to match existing grade.

74. When fences are disturbed, the Contractor shall contact the customer with the fence to be disturbed to give them the option of removing it prior to construction and replacing it. If the customer does not choose this option, the Contractor shall remove it for them or replace it with like materials following construction.
75. Private Irrigation Lines, when encountered, shall be protected during construction. If these lines are damaged, the Contractor shall hire a qualified licensed plumber to repair the damaged lines at no additional cost to Louisville Water.
76. All concrete driveways shall be restored per plans.
77. All asphalt driveways shall be restored per plans.

POST CONSTRUCTION

78. All in-line and service valves installed and/or operated during the completion of this project shall be inspected after construction to verify that all valves used by the Contractor are left in the proper operating position. Unless otherwise noted, or directed, all gates shall be left open.

PAVEMENT RESTORATION

79. Trench backfill and compaction shall be completed in accordance with one of the methods in the following chart:

Trench Backfill and Compaction Requirements Beneath Pavements

Category	Maximum Loose Lift Thickness (inches)				Maximum Number of Passes ²	Example Models ³
	Manufactured Sand	Pit Run Sand	Dense Graded Aggregate	No. 57 Stone		
I Lightweight Vibratory Plate Compactors (100 - 200lbs) ¹	8	8	6	8	3	Wacker-Neuson WP 1540; MBW GP18
II Medium Weight Vibratory Plate Compactors (220 - 660lbs) ¹	12	12	9	12	3	MultiQuip MWH206GH; MBW GPR77H
III Heavyweight Vibratory Plate Compactors (>660lbs) ^{1,4}	18	18	12	18	3	Wacker-Neuson BPU 4045A; MBW GPR135H
IV Smooth Drum Vibratory Rollers ⁴	12	12	9	12	3	Wacker-Neuson RTLx with Smooth Drum Attachment
V Equipment Mounted Compactors ⁴	24	24	24	24	3	Allied 1000B; Caterpillar CVP 110

¹Weight range provided is the operating weight of the equipment during compaction.

²The minimum number of passes shall be applied across the full trench width. For example, a 30-inch wide trench compacted with a 22-inch wide lightweight plate compactor will require 6 total passes per lift.

³Example models listed are not inclusive. Each manufacturer has multiple models that meet the requirements for each weight category, any of which the contractor may utilize.

⁴For categories III, IV and V, the manufacturers of both the compactors and the pipe should be consulted to determine the minimum amount of cover required over the pipe to prevent damage.

80. All pavement cuts shall be made flush with existing pavement grade as soon as possible, but not more than four (4) days from when the utility cut is made.

All trench cuts made in pavement shall be backfilled and compacted with DGA. Pavement cuts shall include 1-foot cutbacks that are a minimum 10-inch deep. Cutbacks shall be made after the trench is backfilled with DGA. The Contractor is responsible for maintaining the DGA trench with cold patch for smooth rideability if it is opened to traffic. Concrete restoration shall occur within 14 days of the utility cut.

A minimum 10-inch concrete cap shall be placed over the backfill material, keyed into the cutback and made flush with existing pavement grade. Concrete shall be screeded, floated and broom finished to match pre-existing grade, without dips and shall have smooth rideability. The Contractor will be permitted to leave 4-foot DGA with cold patch gaps at service locations for longer than 14 days, or recessed plates. The Contractor is responsible for maintaining these gaps for smooth rideability.

81. Restored paved areas shall be milled and paved from edge of pavement to edge of pavement, this includes asphalt paved driving lanes, parking lanes, and shoulders. The road shall be milled minimum 1.5 inches, or per permit required depth, and paved per Louisville Metro Specifications for Metro roads and per KYTC Specifications for State roads. All other non-paved or concrete paved areas inside of public right of way, i.e. stone shoulders, etc. shall be restored by the Contractor.

WARRANTY

82. The Contractor warrants to the Company that materials and equipment furnished by the Contractor under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Company, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.
83. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of the Contractor's obligation to perform the work in accordance with the Contract Documents:
 1. Observations by the Louisville Water Company Project Manager;
 2. Payment by the Company;
 3. Issuance of a certificate of Substantial Completion;
 4. Use or occupancy of any part of the Work by the Company;
 5. Review of Shop Drawings or other Submittals;
 6. Any inspection, test, or approval by others; or
 7. Any correction of defective Work by the Company.
84. Failure on the part of the Company to insist on strict performance by the Contractor of any provision of this Contract is not a waiver of any of the Company's rights and/or remedies, nor shall it relieve the Contractor from

performing any subsequent obligations strictly in accordance with the terms of this Contract.

85. The Company may, at its option, waive compliance with any particular Contract requirement. No waiver shall be effective unless in writing and signed by both the Company and the Contractor. Written waivers shall be limited to the specified provisions of this Contract specifically referred to herein, and shall not be deemed a waiver of any other provision. The written waiver shall not constitute a continuing waiver unless it states otherwise.
86. All work shall be warranted for two (2) years from the date of Final Completion unless specified otherwise. Paved surfaces and restoration of structures will be warranted for five (5) years. Contractor-furnished iron pipe materials shall be warranted for five (5) years after the iron pipeline is placed in service. Satisfactory performance of the iron water main and appurtenances, as they relate to installation, shall be warranted for two (2) years after the iron pipeline is placed in service. The Company reserves the right to require Contractor's presence at scheduled Warranty inspections held within the 12-month period following acceptance of the Project.
87. Contractor shall assign to the Company all manufacturers' warranties. All such warranties shall be directly enforceable by the Company. Such assignment shall in no way affect the Contractor's responsibilities and duties during the warranty period.

N O T I C E

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS 404
NATIONWIDE 14 PERMIT AUTHORIZATION

10-15-2024

PROJECT: Jefferson County, Item No. 05-804
U.S. 42 Interchange Improvements

The Section 404 activities for this project have been previously permitted under the authority of the Department of the Army Nationwide Permit No. 14 “Linear Transportation Projects”. In order for these authorizations to be valid, the attached conditions must be followed. The contractor shall post a copy of this Nationwide Permit & WQC in a conspicuous location at the project site for the duration of construction and comply with the general conditions as required.

STA 50+40	Extend the 7'x4' RCBC 30 feet, install a headwall then 85 feet of 20' Flat bottom ditch
STA 85+70	Extend the 5'x4' RCBC 22 feet, install a headwall and grade 33 feet 4 foot special ditch
STA 5142+50	Extend the 6'x4' RCBC 35 feet, install a headwall and grade 176 feet 8 foot flat bottom special ditch

This project involves work near and/or within Jurisdictional Waters of the United States as defined by the United States Army Corps of Engineers and therefore requires a Nationwide 14 General 404 Permit. The Division of Water certified this General Permit with several conditions (See attached). One that should be brought to your attention is regarding the use of heavy equipment in the stream channel. If there is need to cross the stream channel with heavy equipment or conduct work from within the stream channel a working platform or temporary crossing is authorized. This should be constructed with clean rock and sufficient pipe to allow stream flow to continue unimpeded (see attached typical drawing).

In order for this authorization to be valid, the attached conditions must be followed. The contractor shall post a copy of this Nationwide Approval in a conspicuous location at the project site for the duration of construction and comply with the general conditions as required.

To more readily expedite construction, the contractor may elect to alter the design or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the contractor shall obtain **written** permission from the Division of Construction and the Division of Environmental Analysis. If such changes

necessitate further permitting then the contractor will be responsible for applying to the Army Corps of Engineers and the Kentucky Division of Water (KDOW). A copy of any request to the Corps of Engineers or the KDOW to alter this proposal and subsequent responses shall be forwarded to the Division of Environmental Analysis, DA Permit Coordinator, for office records and for informational purposes.



ANDY BESHEAR
GOVERNOR

REBECCA W. GOODMAN
SECRETARY

**ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION**

ANTHONY R. HATTON
COMMISSIONER

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601

General Certification--Nationwide Permit # 14 Linear Transportation Projects

This General Certification is issued **December 18, 2020**, in conformity with the requirements of Section 401 of the Clean Water Act of 1977, as amended (33 U.S.C. §1341), as well as Kentucky Statute KRS 224.16-050.

For this General Certification and all General Certifications of Nationwide Permits (NWP), the term 'surface water' is defined pursuant to 401 KAR Chapter 10, Section 1(72): Surface Waters means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the Commonwealth.

As required by 40 CFR Part 121 – State Certification of Activities Requiring a Federal License or Permit, all conditions include a statement explaining why the condition is necessary to assure that any discharge authorized under the general permit will comply with water quality requirements and a citation to federal, state, or tribal law that authorizes the condition. The statements and citations are included with each condition. The statements are written entirely at the end of the certification under the section *Statements of Necessity*.

Agricultural operations, as defined by KRS 224.71-100(1) conducting activities pursuant to KRS 224.71-100 (3), (4), (5), (6), or 10 are deemed to have certification if they are implementing an Agriculture Water Quality Plan pursuant to KRS 224.71-145.

For all other operations, the Commonwealth of Kentucky hereby certifies under Section 401 of the Clean Water Act (CWA) that it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 306 and 307 of the CWA, will not be violated for the activity covered under NATIONWIDE PERMIT 14, namely Linear Transportation Projects, provided that the conditions in this certification are met. Activities that do not meet the conditions of this General Certification require an Individual Section 401 Water Quality Certification.

General Certification--Nationwide Permit # 14
Linear Transportation Projects
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1. Activities occurring within surface waters assessed by the Kentucky Division of Water as designated Outstanding State Resource Waters, National Resource Waters, Cold Water Aquatic Habitat, Exceptional Waters, or identified as candidate Outstanding State Resource Waters or candidate Exceptional Waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(1), Section 1(2), & Section 1(3); and 401 KAR 10:031, Section 4(2) & Section 8]
2. Activities impacting surface waters assessed by the Kentucky Division of Water as impaired for warm water or cold water aquatic habitat where the parameter or source is related to habitat* are not authorized under this General Certification and require an Individual Certification. [Statement B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]

*These include waters impaired by the parameter 'habitat assessment', 'combined biota/habitat bioassessment' or any parameter from the parameter group 'habitat alterations, and/or waters where the parameter identified as a cause of impairment has a source from the source group 'habitat impacts'.
3. Activities impacting surface waters assessed by the Kentucky Division of Water as full support for warm water or cold water aquatic habitat are not authorized under this General Certification and require an Individual Certification. [Statements A and B and citations KRS 224.70-110 and 401 KAR 10:031, Section 2 & Section 4]
4. The activity will not occur within surface waters identified as perpetually-protected mitigation sites (e.g., deed restriction or conservation easement). [Statement C and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3); and 40 C.F.R. 230.97]
5. Activities with cumulative temporary and permanent impacts greater than 1/2 acre of wetland or 300 linear feet of surface waters are not authorized under this General Certification and require an Individual Certification. This General Certification shall not apply to projects where multiple Nationwide Permits are issued for individual crossings which are part of a single, larger transportation projects. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
6. For complete linear transportation projects, all impacts shall not exceed a cumulative length of 500 linear feet within each Hydrologic Unit Code (HUC) 14. [401 KAR 10:030 and 401 KAR 10:031]
7. Stream realignment greater than 100 feet is not authorized under this General Certification and require and Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

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8. Surface water impacts covered under this General Certification and undertaken by those persons defined as an agricultural operation under the Agricultural Water Quality Act must be completed in compliance with the Kentucky Agricultural Water Quality Plan (KAWQP). [Statements A and F and citations KRS 224.71-145(1), 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
9. Any crossings must be constructed in a manner that does not impede natural water flow. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
10. The use of creek rock for bank stabilization; grouted rip-rap; unformed, poured grout; unformed, poured concrete; poured asphalt; or asphalt pieces is not authorized under this General Certification and requires an Individual Certification. Poured concrete or grout will be authorized under this General Certification when contained by tightly sealed forms or cells. Equipment shall not discharge waste washwater into surface waters at any time without adequate wastewater treatments. [Statement A and citations 401 KAR 10:030, Section 1(3)(b) & 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
11. New stormwater detention/ retention basins constructed in surface waters or modifications to stormwater detention/ retention basins resulting in the reduction in reach or that cause impairment of flow of surface waters are not authorized under this General Certification and require an Individual Certification. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
12. Erosion and sedimentation pollution control plans and Best Management Practices (BMPs) must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
13. Sediment and erosion control measures, such as check-dams constructed of any material, silt fencing, hay bales, etc., shall not be placed within surface waters, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, design and placement of temporary erosion control measures shall not be conducted in such a manner that may result in instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control devices shall be removed and the natural grade restored within the completion timeline of the activities. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

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14. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering surface waters. [Statements A and D and citations. [KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
15. Removal of riparian vegetation shall be limited to that necessary for equipment access. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
16. To the maximum extent practicable, all in-stream work under this certification shall be performed under low-flow conditions [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
17. Heavy equipment (e.g., bulldozers, backhoes, and draglines), if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
18. Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
19. If domestic water supply intakes are located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done prior to construction. [Statement E and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
20. Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling (800) 928-2380. [Statement A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
21. The Kentucky Division of Water requires submission of a formal application for any federal applicant that is not required to submit a Preconstruction Notification that would typically be required of any non-federal applicant. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

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22. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project that has been determined to likely have a significant adverse effect upon water quality or degrade surface waters so that existing uses of the water body or downstream waters are precluded. [Statement A and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]
23. If the final issued General Permit for Nationwide Permit 14 Linear Transportation Projects changes significantly, the Division of Water may opt to deny certification for this permit. [Statements A and D and citations KRS 224.70-110, 401 KAR 10:030, Section 1(3)(b) & Section 1(4)(b); and 401 KAR 10:031, Section 2 & Section 4]

Statements of Necessity:

- A. This condition is necessary to protect waters categorized under the anti-degradation policy to protect the designated and existing uses and to maintain the associated water quality criteria necessary to protect these water resources.
- B. This condition is necessary to protect existing uses and the level of water quality necessary to protect those existing uses shall be assured in impaired water.
- C. This condition is necessary for long-term protection of compensatory mitigation sites.
- D. This condition is necessary to provide for the prevention, abatement, and control of all water pollution and to conserve water resources for legitimate uses, safeguard from pollution the uncontaminated waters, prevent the creation of any new pollution, and abate any existing pollution.
- E. This condition is necessary to protect domestic water supply use.
- F. This condition is necessary to evaluate, develop, and improve best-management practices in conservation plans, compliance plans, and forest stewardship management plans; establish statewide and regional agriculture water quality plans; and otherwise promote soil and water conservation activities that protect surface waters from the adverse impacts of agriculture operations within the Commonwealth.

Violation of Kentucky state water quality standards may result in civil penalties and remediation actions.

For assistance contact the Kentucky Division of Water, Water Quality Certification Section by email (401WQC@ky.gov) or by phone (502)-564-3410.



2021 Nationwide Permit Summary

US Army Corps
of Engineers
Louisville District ®

Issued: February 25, 2022
Expires: March 14, 2026

No. 14. Linear Transportation Projects

(NWP Final Rule, 86 FR 73522)

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).

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).

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United

States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other

fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Structures and Fills. Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct

management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of "effects of the action" for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding "activities that are reasonably certain to occur" and "consequences caused by the proposed action."

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate

documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7

consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district

engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The

district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential

to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must

include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands

adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more

than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district

engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWP, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure

timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in

the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not

authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an

NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) *Timing.* Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the

permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification:* The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed activity;
- (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
- (4) (i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and 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 for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many

wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) *Form of Pre-Construction Notification:* The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) *Agency Coordination:* (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the

NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not

practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no

work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

F. Nationwide Permit Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term “discharge” means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of

water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not

a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWP, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For

the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of

the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal

interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a “water of the United States.” If a wetland is adjacent to a waterbody determined to be a water of the United

States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

2021 KENTUCKY REGIONAL GENERAL CONDITIONS

These regional conditions are in addition to, but do not supersede, the requirements in the Federal Register (See volume 86, date January 13, 2021, pp 2867-2874 for the text of Section C, General Conditions).

Notifications for all Nationwide Permits (NWP) shall be in accordance with General Condition No. 32.

1. For activities that would result in a loss of Outstanding State or National Resource Waters (OSNRWs), Exceptional Waters (EWs), Coldwater Aquatic Habitat Waters (CAHs) and waters with Designated Critical Habitat (DCH) under the Endangered Species Act for the NWP listed below, a Pre-Construction Notification (PCN) will be required to the Corps. The Corps will coordinate with the appropriate resource agencies (see attached list) on these NWP for impacts to these waters.

NWP 3 (Maintenance)

NWP 4 (Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities)

NWP 5 (Scientific Measurement Devices)

NWP 6 (Survey Activities)

NWP 12 (Oil or Natural Gas Pipeline Activities)

NWP 13 (Bank Stabilization)

NWP 14 (Linear Transportation Projects)

NWP 15 (U.S. Coast Guard Approved Bridges)

NWP 16 (Return Water from Upland Contained Disposal Areas)

NWP 17 (Hydropower Projects)

NWP 18 (Minor Discharges)

NWP 19 (Minor Dredging)

NWP 20 (Response Operations for Oil or Hazardous Substances)

NWP 22 (Removal of Vessels)

NWP 23 (Approved Categorical Exclusions)

NWP 25 (Structural Discharges)

NWP 30 (Moist Soil Management for Wildlife)

NWP 32 (Completed Enforcement Actions)

NWP 33 (Temporary Construction, Access, and Dewatering)

NWP 36 (Boat Ramps)

NWP 41 (Reshaping Existing Drainage Ditches)

NWP 51 (Land-Based Renewable Energy Generation Facilities)

NWP 57 (Electric Utility Line and Telecommunications Activities)

NWP 58 (Utility Line Activities for Water and Other Substances)

2. In addition to the notification and agency coordination requirements in the NWP, for impacts greater than 0.25 acres in all “waters of the U.S.” for the NWP listed below, a PCN will be required to the Corps. The Corps will coordinate with the appropriate resource agencies (see attached list) on these NWP:

NWP 3 (Maintenance)
NWP 14 (Linear Transportation Projects)

3. Nationwide Permit No. 14 – Linear Transportation Projects.

- (a) New road alignments or realignments are limited to a permanent loss of 500 linear feet of intermittent or perennial stream length or the stream bed acreages listed in the table below at each crossing. Road crossings with permanent losses greater than 500 linear feet of intermittent or perennial stream or the stream bed acreages listed in the table below associated with new alignments or realignments will be evaluated as an individual permit (i.e., a Letter of Permission or Standard Permit).

Table of Acreages at Varying Stream Widths for 500 Linear Feet of Impact	
Stream Width (Feet)	Acres of Stream at Varying Widths for 500 Linear Feet of Stream
1	0.011
2	0.023
3	0.034
4	0.046
5	0.057
6	0.069
7	0.080
8	0.092
9	0.103
10	0.115

- (b) In addition to the notification requirements contained in NWP 14, the permittee must submit a PCN to the district engineer prior to commencing the activity for the permanent loss of greater than 300 linear feet of stream bed or the stream bed acreages listed in the table below. (See General Condition 32 and the definition of "loss of waters of the United States" in the Nationwide Permits for further information.)

Table of Acreages at Varying Stream Widths for 300 Linear Feet of Impact	
Stream Width (Feet)	Acres of Stream at Varying Widths for 300 Linear Feet of Stream
1	0.007
2	0.014
3	0.021
4	0.028
5	0.034
6	0.041
7	0.048
8	0.055
9	0.062
10	0.069

4. Notification in accordance with General Condition 32 is required to the Corps for all activities located in the following Section 10 waterways, to include the portion of their tributaries below the Ordinary High Water Mark or navigation pool, or otherwise subject to inundation, by the Section 10 waterway:

- Mississippi River
- Ohio River
- Licking River
- Kentucky River
- Salt River
- Green River
- Cumberland River
- Tennessee River
- Big Sandy River (from mouth to Louisa, KY)

5. All applications and requests should be submitted electronically. To submit applications or other requests electronically, all documents should be saved as a PDF document, and then submitted as an attachment in an email to the following email address:

CELRL.Door.To.The.Corps@usace.army.mil

Your email should include the following:

- a) Subject Line with the name of the applicant, type of request, and location (County and State). Example: RE: Doe, John, DA Permit Application, Jefferson County, KY
- b) Brief description of the request and contact information (phone number, mailing address, and email address) for the applicant and/or their agent.

c) Project Location: Address and Latitude/Longitude in decimal degrees (e.g. 42.927883, -88.362576).

All forms that require signature must be digitally signed or signed manually, scanned and then sent electronically.

Electronic documents must have sufficient resolution to show project details. In order to have the highest quality documents, the original digital documents should be converted to PDF rather than providing scanned copies of original documents.

The electronic application and attached documents must not exceed 10 megabytes (10MB).

6. For all activities, the applicant shall review the U.S. Fish and Wildlife Service's IPaC website: <http://ecos.fws.gov/ipac> to determine if the activity might affect threatened and/or endangered species or designated critical habitat. If federally-listed species or designated critical habitat are identified, a PCN in accordance with General Condition 18 and 32 would be triggered and the official species list generated from the IPaC website must be submitted with the PCN.

Further information:

Outstanding State or National Resource Water (OSNRWs), Exceptional Waters (EWs), and Coldwater Aquatic Habitat Waters (CAHs) are waters designated by the Commonwealth of Kentucky, Natural Resources and Environmental Protection Cabinet. The list can be found at the following link: <http://eppcapp.ky.gov/spwaters/>

Designated Critical Habitat (DCH) under the Endangered Species Act is determined within the Commonwealth of Kentucky by the U.S. Fish and Wildlife Service. The current list of Kentucky's Threatened, Endangered, and Federal Candidate Species can be found at the following link: <http://www.fws.gov/frankfort/EndangeredSpecies.html>

Information on Pre-Construction Notification (PCN) can be found at NWP General Condition No. 32 in the Federal Register (See volume 86, date January 13, 2021, pp 2867-2874 for the text of Section C, General Conditions).

COORDINATING RESOURCE AGENCIES

Chief, Wetlands Regulatory Section
U.S. Environmental Protection Agency
Region IV
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303

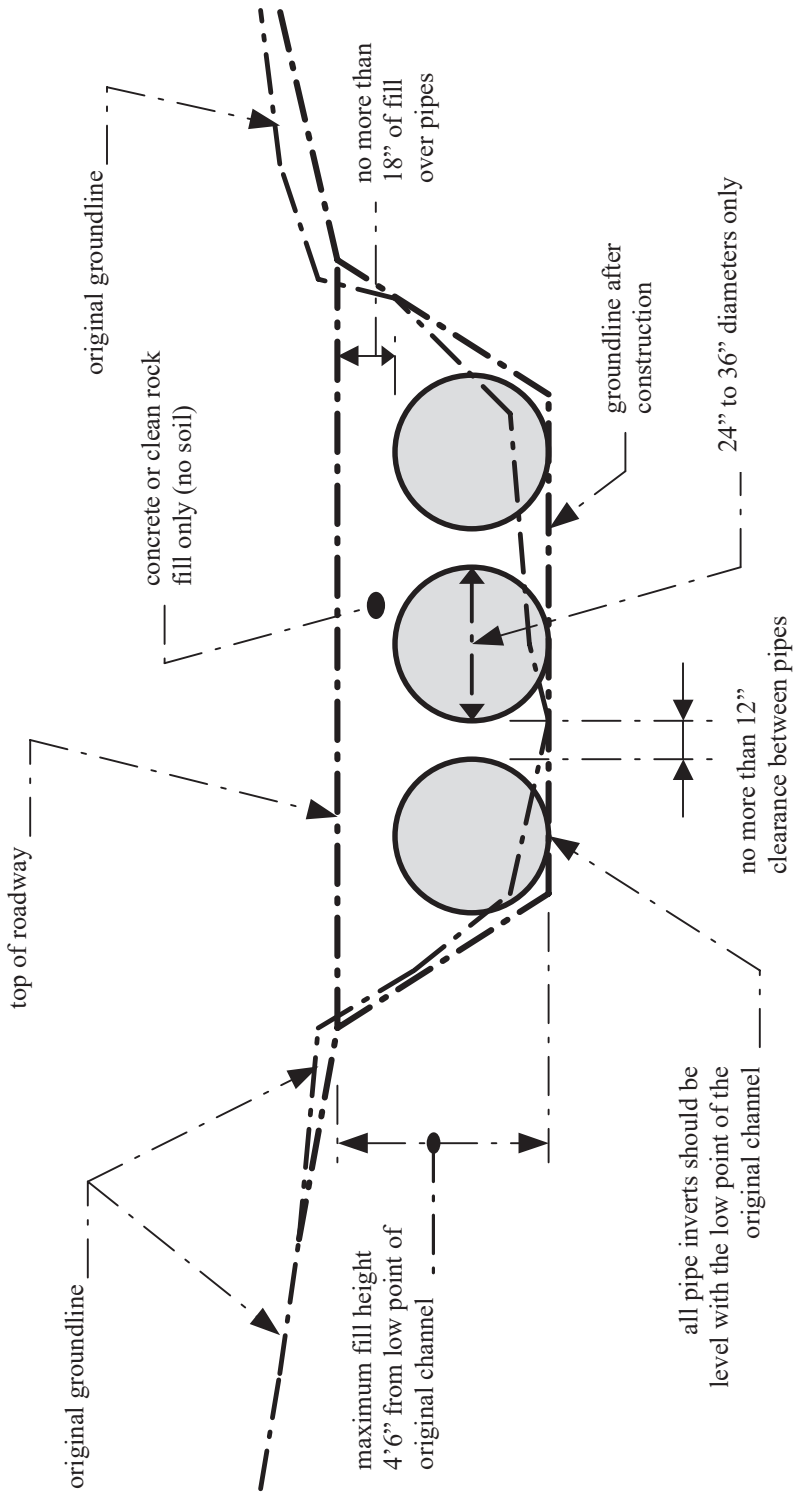
Supervisor
U.S. Fish & Wildlife Service
JC Watts Federal Building, Room 265
330 West Broadway
Frankfort, Kentucky 40601

Supervisor
401 Water Quality Certification
Kentucky Division of Water
300 Sower Boulevard, 3rd Floor
Frankfort, KY 40601

Commissioner
Department of Fish and Wildlife Resources
#1 Sportsman's Lane
Frankfort, KY 40601

Executive Director and State Historic Preservation Officer
Kentucky Heritage Council
410 High Street
Frankfort, KY 40601

ATTACHMENT 1



NOTES:

1. This is a conceptual drawing. The number and size of pipes and other details will vary depending on specific site conditions.
2. The pipes and backfill must be contained within the stream channel as shown above. During the construction of the approaches and access roadway across the floodplain, unstable and unconsolidated materials unsuitable for roadways may be excavated and replaced with riprap, crushed stone, or other stable road construction materials. This may only be done, however, with the following provisions: (1) the disposal of excess, unconsolidated materials thus excavated must be outside of the floodplain and (2) the finished surface of the completed road may be no more than three inches (3") above the pre-construction surface of the floodplain at any point beyond the top of banks.

LOW-WATER CROSSING

STANDARD DRAWING
Not to Scale

KYTC BMP Plan for Project PCN 5-804.00



Kentucky Transportation Cabinet

Highway District __ (1)

And

_____ (2), Construction

Kentucky Pollutant Discharge Elimination System

Permit KYR10

Best Management Practices (BMP) plan

Groundwater protection plan

For Highway Construction Activities

For

[Project Description](1)

Project: PCN 5 – 804.00

KYTC BMP Plan for Project PCN 5-804.00

Project information

Note – (1) = Design (2) = Construction (3) = Contractor

1. Owner – Kentucky Transportation Cabinet, District 5 (1)
2. Resident Engineer: (2)
3. Contractor name: (2)
Address: (2)

Phone number: (2)
Contact: (2)
Contractors agent responsible for compliance with the KPDES permit requirements (3):
4. Project Control Number (2)
5. Route (Address): (1) **Louisville, KY Jefferson County @ US 42 / I-264 Interchange**
6. Latitude/Longitude (project mid-point) dd/mm/ss, dd/mm/ss (1)
Lat: 38 16 48 N
Long: 85 38 11 W
7. County (project mid-point) (1) **Jefferson**
8. Project start date (date work will begin): (2)
9. Projected completion date: (2)

A. Site description:

1. Nature of Construction Activity (from letting project description) (1)
RECONSTRUCT/WIDEN I-264 (WATTERSON EXPRESSWAY) FROM WESTPORT ROAD (KY-1447) TO I-71, INCLUDING THE US-42 INTERCHANGE AS A SPUI.

KYTC BMP Plan for Project PCN 5-804.00

2. Order of major soil disturbing activities (2) and (3)
3. Projected volume of material to be moved (1) **183,650 CU YD**
4. Estimate of total project area (acres) (1) **71.0.**
5. Estimate of area to be disturbed (acres) (1) **57.9.**
6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.(1)
7. Data describing existing soil condition (1) & (2)

The project is located within the Jeffersonville Quadrangle, East Bound exit ramp for I-264 and US 42 interchange. Geologic mapping indicates bedrock is part of the Beechwood Limestone Member of the Sellersburg Limestone Formation. There were no sinkholes or other karst features found during a field review; however the Beechwood Limestone Member is susceptible to solution, creating shallow sinkholes and caves along fractures. If sinkholes are encountered during construction, please contact this office for mitigation procedures.

Bedrock was encountered below the cut slope. Therefore, select rock quantities were not required and no rock will be available from roadway excavation for construction purposes.

Cut stability analyses were performed at station 511+50 using the maximum slope steepness of 2H:1V. The analyses did not identify any expected stability problems and the required factors of safety for roadway cuts in soil were met.

8. Data describing existing discharge water quality (if any) (1) & (2) **BNR**
9. Receiving water name (1)
10. TMDLs and Pollutants of Concern in Receiving Waters: (1 **DEA**) **BNR**
11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each

KYTC BMP Plan for Project PCN 5-804.00

discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.

12. Potential sources of pollutants:

The primary source of pollutants is solids that are mobilized during storm events. Other sources of pollutants include oil/fuel/grease from servicing and operating construction equipment, concrete washout water, sanitary wastes and trash/debris. (3)

B. Sediment and Erosion Control Measures:

1. Plans for highway construction projects will include erosion control sheets that depict Disturbed Drainage Areas (DDAs) and related information. These plan sheets will show the existing project conditions with areas delineated by DDA within the right of way limits, the discharge points and the areas that drain to each discharge point. Project managers and designers will analyze the DDAs and identify Best Management Practices (BMPs) that are site specific. The balance of the BMPs for the project will be listed in the bid documents for selection and use by the contractor on the project with approval by the resident engineer.

Projects that do not have DDAs annotated on the erosion control sheets will employ the same concepts for development and managing BMP plans.

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as "Do Not Disturb" until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP's shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA's as the work progresses. All DDA's will have adequate BMP's in place before being disturbed.

KYTC BMP Plan for Project PCN 5-804.00

3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:
- Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
 - At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.
 - Clearing and Grubbing – The following BMP's will be considered and used where appropriate.
 - Leaving areas undisturbed when possible.
 - Silt basins to provide silt volume for large areas.
 - Silt Traps Type A for small areas.
 - Silt Traps Type C in front of existing and drop inlets which are to be saved
 - Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
 - Brush and/or other barriers to slow and/or divert runoff.
 - Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
 - Temporary Mulch for areas which are not feasible for the fore mentioned types of protections.
 - Non-standard or innovative methods.
 - Cut & Fill and placement of drainage structures - The BMP Plan will be modified to show additional BMP's such as:
 - Silt Traps Type B in ditches and/or drainways as they are completed
 - Silt Traps Type C in front of pipes after they are placed
 - Channel Lining
 - Erosion Control Blanket
 - Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
 - Non-standard or innovative methods
 - Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
 - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.

KYTC BMP Plan for Project PCN 5-804.00

- Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
- Additional Channel Lining and/or Erosion Control Blanket.
- Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
- Special BMP's such as Karst Policy
- Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probably changes include:
 - Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.
 - Permanent Seeding and Protection
 - Placing Sod
 - Planting trees and/or shrubs where they are included in the project
- BMP's including Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are: **(1) The Erosion Control sheets are include in the Highway Plan set.**

C. Other Control Measures

1. No solid materials, including building materials, shall be discharged to waters of the commonwealth, except as authorized by a Section 404 permit.
2. Waste Materials

All waste materials that may leach pollutants (paint and paint containers, caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) will be collected and stored in appropriate covered waste containers. Waste containers shall be removed from the project site on a sufficiently frequent basis as to not allow wastes to become a source of pollution. All personnel will be instructed regarding the correct procedure for waste disposal. Wastes will be disposed in accordance with appropriate regulations. Notices stating these practices will be posted in the office.

3. Hazardous Waste

All hazardous waste materials will be managed and disposed of in the manner specified by local or state regulation. The contractor shall notify the Resident Engineer if there any hazardous wastes being generated at the

KYTC BMP Plan for Project PCN 5-804.00

project site and how these wastes are being managed. Site personnel will be instructed with regard to proper storage and handling of hazardous wastes when required. The Transportation Cabinet will file for generator, registration when appropriate, with the Division of Waste Management and advise the contractor regarding waste management requirements.

4. Spill Prevention

The following material management practices will be used to reduce the risk of spills or other exposure of materials and substances to the weather and/or runoff.

➤ **Good Housekeeping:**

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough product required to do the job
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer
- Whenever possible, all of the product will be used up before disposing of the container
- Manufacturers' recommendations for proper use and disposal will be followed
- The site contractor will inspect daily to ensure proper use and disposal of materials onsite

➤ **Hazardous Products:**

These practices will be used to reduce the risks associated with any and all hazardous materials.

- Products will be kept in original containers unless they are not resealable
- Original labels and material safety data sheets (MSDS) will be reviewed and retained
- Contractor will follow procedures recommended by the manufacturer when handling hazardous materials
- If surplus product must be disposed of, manufacturers' or state/local recommended methods for proper disposal will be followed

KYTC BMP Plan for Project PCN 5-804.00

The following product-specific practices will be followed onsite:

➤ Petroleum Products:

Vehicles and equipment that are fueled and maintained on site will be monitored for leaks, and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products onsite will be stored in tightly sealed containers, which are clearly labeled and will be protected from exposure to weather.

The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.

This project (will / will not) (3) have over 1,320 gallons of petroleum products with a total capacity, sum of all containers 55 gallon capacity and larger.

➤ Fertilizers:

Fertilizers will be applied at rates prescribed by the contract, standard specifications or as directed by the resident engineer. Once applied, fertilizer will be covered with mulch or blankets or worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

➤ Paints:

All containers will be tightly sealed and stored indoors or under roof when not being used. Excess paint or paint wash water will not be discharged to the drainage or storm sewer system but will be properly disposed of according to manufacturers' instructions or state and local regulations.

➤ Concrete Truck Washout:

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within 75 feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, excess concrete and wash water will be discharged to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, a shallow earthen wash basin will be excavated away from ditches to receive the wash water

➤ Spill Control Practices

KYTC BMP Plan for Project PCN 5-804.00

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous material will be reported to the appropriate state/local agency as required by KRS 224 and applicable federal law.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- Spills of products will be cleaned up promptly. Wastes from spill clean up will be disposed in accordance with appropriate regulations.

D. Other State and Local Plans

This BMP plan shall include any requirements specified in sediment and erosion control plans, storm water management plans or permits that have been approved by other state or local officials. Upon submittal of the NOI, other requirements for surface water protection are incorporated by reference into and are enforceable under this permit (even if they are not specifically included in this BMP plan). This provision does not apply to master or comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit issued for the construction site by state or local officials. **(1) – None specified in plan set**

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.
- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.
 - Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the

KYTC BMP Plan for Project PCN 5-804.00

cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance. **(1) – None specified in plan set**

F. Inspections

Inspection and maintenance practices that will be used to maintain erosion and sediment controls:

- All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Inspections will be conducted by individuals that have received KyTC Grade Level II training or other qualification as prescribed by the cabinet that includes instruction concerning sediment and erosion control.
- Inspection reports will be written, signed, dated, and kept on file.
- Areas at final grade will be seeded and mulched within 14 days.
- Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stock piles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported.
- Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 70 percent of the design capacity and at the end of the job.
- Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected

KYTC BMP Plan for Project PCN 5-804.00

weekly for conditions that represent a release or possible release of pollutants to the environment.

G. Non – Storm Water discharges

It is expected that non-storm water discharges may occur from the site during the construction period. Examples of non-storm water discharges include:

- Water from water line flushings.
- Water form cleaning concrete trucks and equipment.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Uncontaminated groundwater and rain water (from dewatering during excavation).

All non-storm water discharges will be directed to the sediment basin or to a filter fence enclosure in a flat vegetated infiltration area or be filtered via another approved commercial product.

H. Groundwater Protection Plan (3)

This plan serves as the groundwater protection plan as required by 401 KAR 5:037.

- Contractors statement: (3)

The following activities, as enumerated by 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan, will or may be may be conducted as part of this construction project:

- _____ 2. (e) land treatment or land disposal of a pollutant;
- _____ 2. (f) Storing, ..., or related handling of hazardous waste, solid waste or special waste, ..., in tanks, drums, or other containers, or in piles, (This does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site);
- _____ 2. (g) Handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant;

KYTC BMP Plan for Project PCN 5-804.00

_____ 2. (j) Storing or related handling of road oils, dust suppressants,, at a central location;

_____ 2. (k) Application or related handling of road oils, dust suppressants or deicing materials, (does not include use of chloride-based deicing materials applied to roads or parking lots);

_____ 2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes, (this does not include bore holes for the purpose of explosive demolition);

Or, check the following only if there are no qualifying activities

_____ There are no activities for this project as listed in 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan.

The contractor is responsible for the preparation of a plan that addresses the

401 KAR 5:037 Section 3. (3) Elements of site specific groundwater protection plan:

- (a) General information about this project is covered in the Project information;
- (b) Activities that require a groundwater protection plan have been identified above;
- (c) Practices that will protect groundwater from pollution are addressed in section C. Other control measures.
- (d) Implementation schedule – all practices required to prevent pollution of groundwater are to be in place prior to conducting the activity;
- (e) Training is required as a part of the ground water protection plan. All employees of the contractor, sub-contractor and resident engineer personnel will be trained to understand the nature and requirements of this plan as they pertain to their job function(s). Training will be accomplished within one week of employment and annually thereafter. A record of training will be maintained by the contractor with a copy provide to the resident engineer.
- (f) Areas of the project and groundwater plan activities will be inspected as part of the weekly sediment and erosion control inspections
- (g) Certification (see signature page.)

Contractor and Resident Engineer Plan certification

The following certification applies to all parties that are signatory to this BMP plan:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, this plan complies with the requirements of 401 KAR 5:037. By this certification, the undersigned state that the individuals signing the plan have reviewed the terms of the plan and will implement its provisions as they pertain to ground water protection.

Resident Engineer and Contractor Certification:

(2) Resident Engineer signature

Signed _____ title _____,
Typed or printed name² signature

(3) Signed _____ title _____, _____
 Typed or printed name¹ _____ signature

1. Contractors Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

2. KyTC note: to be signed by the Chief District Engineer or a person designated to have the authority to sign reports by such a person (usually the resident engineer) in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601 Reference the Project Control Number (PCN) and KPDES number when one has been issued.

KYTC BMP Plan for Project PCN 5-804.00

Sub-Contractor Certification

The following sub-contractor shall be made aware of the BMP plan and responsible for implementation of BMPs identified in this plan as follows:

Subcontractor

Name:
Address:
Address:

Phone:

The part of BMP plan this subcontractor is responsible to implement is:

I certify under penalty of law that I understand the terms and conditions of the general Kentucky Pollutant Discharge Elimination System permit that authorizes the storm water discharges, the BMP plan that has been developed to manage the quality of water to be discharged as a result of storm events associated with the construction site activity and management of non-storm water pollutant sources identified as part of this certification.

Signed _____title_____, _____
Typed or printed name¹signature

1. Sub Contractor Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.



Andy Beshear
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

300 Sower Boulevard
Frankfort, Kentucky 40601
Phone: (502) 564-2150
Fax: 502-564-4245

Rebecca W. Goodman
SECRETARY

Anthony R. Hatton
COMMISSIONER

January 31, 2025

Matthew Bullock
KYTC District 5
8310 Westport Rd
Louisville, KY 402423042

Re: KYR10 Coverage Acknowledgment
KPDES No.: KYR10T124
US 42 / I-264 - Project 5-804.00
Permit Type: Construction Stormwater
AI ID: 109969
Jefferson County, Kentucky

Dear Matthew Bullock:

The discharges associated with the Notice of Intent you submitted have been approved for coverage under the 2025 "Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Storm Water Discharges Associated with Construction Activities (KYR100000)" master general permit. Your coverage becomes effective on the date of this letter. This coverage automatically terminates two years from the effective date of your coverage unless an extension is requested prior to the termination date, or the Division of Water revokes coverage, whichever comes first. During this period of coverage all discharges shall comply with the conditions of the KYR100000 master general permit. This permit and links to the eNOI (and permit coverage extension) and eNOT forms can be found on our website:

<https://eec.ky.gov/Environmental-Protection/Water/PermitCert/KPDES/Documents/KYR10PermitPage.pdf>.

Any person aggrieved by the issuance of a permit final decision may demand a hearing pursuant to KRS 224.10-420(2) within thirty (30) days from the date of the issuance of this letter. Any demand for a hearing on the permit shall be filed in accordance with the procedures specified in KRS 224.10-420, 224.10-440, 224.10-470, and the regulations promulgated thereto. The request for hearing should be submitted in writing to the Energy and Environment Cabinet, Office of Administrative Hearings, 211 Sower Boulevard, Frankfort, Kentucky 40601 and the Commonwealth of Kentucky, Energy and Environment Cabinet, Division of Water, 300 Sower Boulevard, Frankfort, Kentucky 40601. For your record keeping purposes, it is recommended that these requests be sent by certified mail. The written request must conform to the appropriate statutes referenced above.

Any questions concerning the general permit and its requirements should be directed to me at [502-782-6944](tel:502-782-6944) or email me at Barry.Elmore@ky.gov

Construction Site GPS Coordinates: 38.28, -85.636389

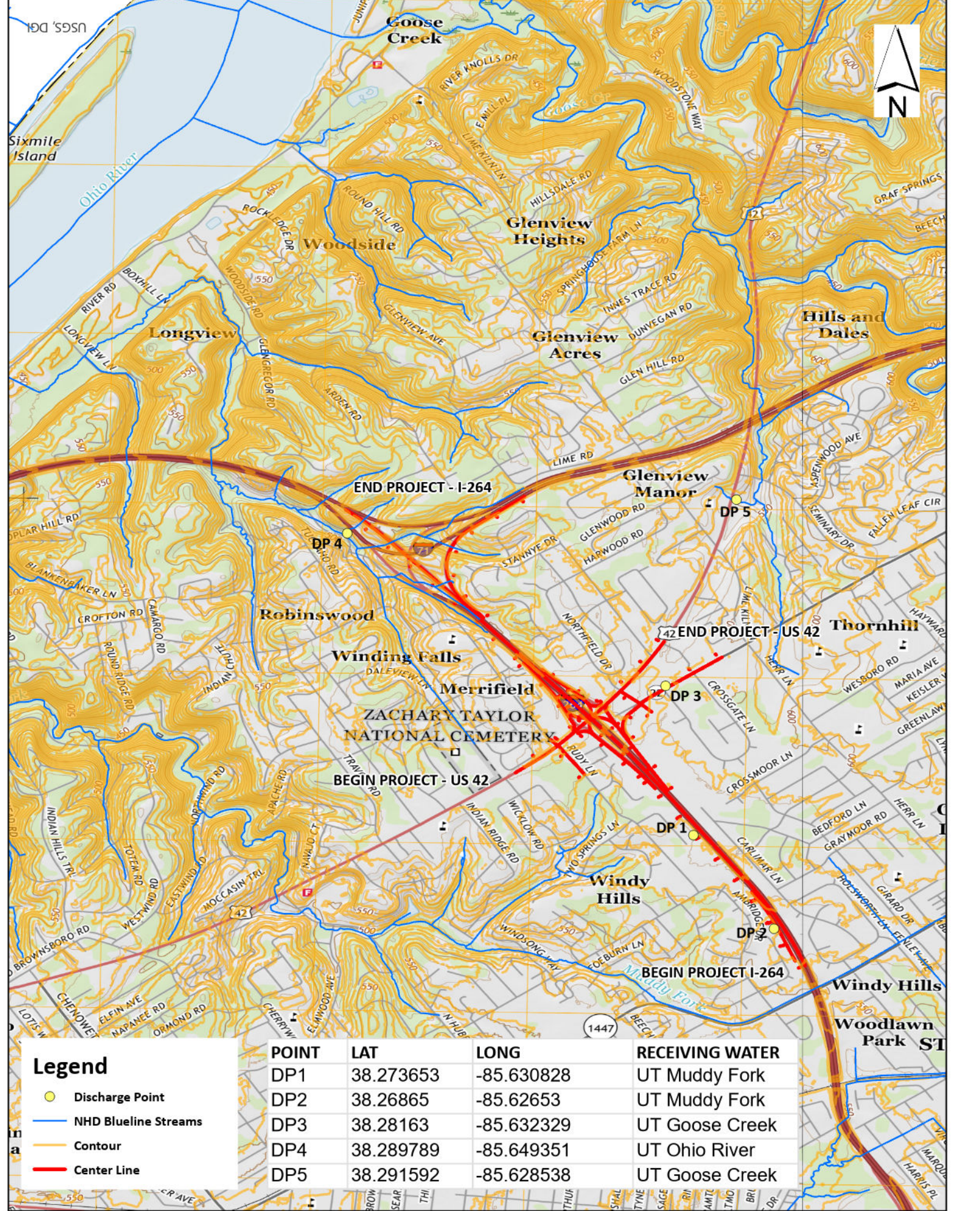
Receiving Water: Unnamed Tributary to Muddy Fork, Unnamed Tributary to Goose Creek, and Unnamed Tributary to Ohio River

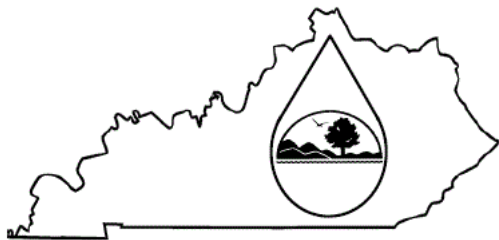
Sincerely,

A handwritten signature in black ink that reads "Barry Elmore".

Barry Elmore
Surface Water Permits Branch
Division of Water

cc: Anthony Downs, eNOI Preparer
Todd Giles, Louisville Regional Office
Lori Rafferty, MSD MS4 Coordinator





KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)

Notice of Intent (NOI) for coverage of Storm Water Discharge
Associated with Construction Activities Under the KPDES Storm
Water General Permit KYR100000

[Click here for Instructions
\(Controls/KPDES_FormKYR10_Instructions.htm\)](#)

[Click here to obtain information and a copy of the KPDES General Permit.
\(https://eec.ky.gov/Environmental-
Protection/Water/PermitCert/KPDES/Documents/KYR10PermitPage.pdf\)](https://eec.ky.gov/Environmental-Protection/Water/PermitCert/KPDES/Documents/KYR10PermitPage.pdf)

(*) indicates a required field; (✓) indicates a field may be required based on user input or is an optionally required field

Reason for Submittal:(*) Response to Notice of Deficiency ▼	Agency Interest ID: 109967	Permit Number:(✓) KPDES Permit Number	
If change to existing permit coverage is requested, describe the changes for which modification of coverage is being sought:(✓) 			
ELIGIBILITY: Stormwater discharges associated with construction activities disturbing individually one (1) acre or more, including, in the case of a common plan of development, contiguous construction activities that cumulatively equal one (1) acre or more of disturbance.			
EXCLUSIONS: The following are excluded from coverage under this general permit: 1) Are conducted at or on properties that have obtained an individual KPDES permit for the discharge of other wastewaters which requires the development and implementation of a Best Management Practices (BMP) plan; 2) Any operation that the DOW determines an individual permit would better address the discharges from that operation; 3) Any project that discharges to an Impaired Water listed in the most recent Integrated Report, §305(b) as impaired for sediment and for which an approved TMDL has been developed.			
SECTION I -- FACILITY OPERATOR INFORMATION (PERMITTEE)			
Company Name:(✓) KYTC District 5	First Name:(✓) Matt	M.I.: A	Last Name:(✓) Bullock
Mailing Address:(*) 8310 Westport Road	City:(*) Louisville	State:(*) Kentucky ▼	Zip:(*) 40242
eMail Address:(*) matt.bullock@ky.gov	Business Phone:(*) 502-210-5400	Alternate Phone: Phone	
SECTION II -- GENERAL SITE LOCATION INFORMATION			
Project Name:(*) US 42 / I-264 - Project 5-804.00	Status of Owner/Operator(*) State Government ▼	SIC Code(*) 1622 Bridge, Tunnel, and Elevat ▼	
Company Name:(✓) KYTC District 5	First Name:(✓) Matt	M.I.: A	Last Name:(✓) Bullock
Site Physical Address:(*) US 42 at I-264 Interchange			
City:(*) Louisville	State:(*) Kentucky ▼	Zip:(*) 40222	
County:(*) Jefferson ▼	Latitude(decimal degrees)(*)DMS to DD Converter (https://www.fcc.gov/media/radio/dms-decimal) 38.280000	Longitude(decimal degrees)(*) -85.636389	
SECTION III -- SPECIFIC SITE ACTIVITY INFORMATION ?			
Project Description:(*) RECONSTRUCT/WIDEN I-264 (WATERSON EXPRESSWAY) FROM WESTPORT ROAD (KY-1447) TO I-71, INCLUDING THE US-42 INTERCHANGE AS A SPUI.			
a. For single projects provide the following information			

Total Number of Acres in Project:(✓) <div>71.0</div>	Total Number of Acres Disturbed:(✓) <div>57.9</div>																																										
Anticipated Start Date:(✓) <div>3/20/2025</div>	Anticipated Completion Date:(✓) <div>6/30/2027</div>																																										
b. For common plans of development provide the following information																																											
Total Number of Acres in Project:(✓) <div># Acre(s)</div>	Total Number of Acres Disturbed:(✓) <div># Acre(s)</div>																																										
Number of individual lots in development, if applicable:(✓) <div># lot(s)</div>	Number of lots in development:(✓) <div># lot(s)</div>																																										
Total acreage of lots intended to be developed:(✓) <div>Project Acres</div>	Number of acres intended to be disturbed at any one time:(✓) <div>Disturbed Acres</div>																																										
Anticipated Start Date:(✓) <div></div>	Anticipated Completion Date:(✓) <div></div>																																										
List Building Contractor(s) at the time of Application:(*) <div><div>+ Company Name</div><div></div></div>																																											
SECTION IV -- IF THE PERMITTED SITE DISCHARGES TO A WATER BODY THE FOLLOWING INFORMATION IS REQUIRED ?																																											
Discharge Point(s): <table><tr><td></td><td>Unnamed Tributary?</td><td>Latitude</td><td>Longitude</td><td>Receiving Water Name</td><td></td></tr><tr><td>1</td><td>Yes</td><td>38.26865</td><td>-85.62653</td><td>Muddy Fork</td><td>Delete</td></tr><tr><td>2</td><td>Yes</td><td>38.29159</td><td>-85.62854</td><td>Goose Creek</td><td>Delete</td></tr><tr><td>3</td><td>Yes</td><td>38.27365</td><td>-85.63082</td><td>Muddy Fork</td><td>Delete</td></tr><tr><td>4</td><td>Yes</td><td>38.28163</td><td>-85.63232</td><td>Goose Creek</td><td>Delete</td></tr><tr><td>5</td><td>Yes</td><td>38.28979</td><td>-85.64935</td><td>Ohio River</td><td>Delete</td></tr><tr><td colspan="6">+</td></tr></table>			Unnamed Tributary?	Latitude	Longitude	Receiving Water Name		1	Yes	38.26865	-85.62653	Muddy Fork	Delete	2	Yes	38.29159	-85.62854	Goose Creek	Delete	3	Yes	38.27365	-85.63082	Muddy Fork	Delete	4	Yes	38.28163	-85.63232	Goose Creek	Delete	5	Yes	38.28979	-85.64935	Ohio River	Delete	+					
	Unnamed Tributary?	Latitude	Longitude	Receiving Water Name																																							
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4	Yes	38.28163	-85.63232	Goose Creek	Delete																																						
5	Yes	38.28979	-85.64935	Ohio River	Delete																																						
+																																											
SECTION V -- IF THE PERMITTED SITE DISCHARGES TO A MS4 THE FOLLOWING INFORMATION IS REQUIRED ?																																											
Name of MS4: <div>MSD-MSD</div>																																											
Date of application/notification to the MS4 for construction site permit coverage: <div>1/30/2025</div>	Discharge Point(s):(*) <table><tr><td></td><td>Latitude</td><td>Longitude</td><td></td></tr><tr><td>1</td><td>38.26865</td><td>-85.62653</td><td>Delete</td></tr><tr><td>2</td><td>38.27365</td><td>-85.63082</td><td>Delete</td></tr><tr><td>3</td><td>38.28163</td><td>-85.63232</td><td>Delete</td></tr><tr><td>4</td><td>38.28979</td><td>-85.64935</td><td>Delete</td></tr><tr><td>5</td><td>38.29159</td><td>-85.62854</td><td>Delete</td></tr><tr><td colspan="4">+</td></tr></table>		Latitude	Longitude		1	38.26865	-85.62653	Delete	2	38.27365	-85.63082	Delete	3	38.28163	-85.63232	Delete	4	38.28979	-85.64935	Delete	5	38.29159	-85.62854	Delete	+																	
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SECTION VI -- WILL THE PROJECT REQUIRE CONSTRUCTION ACTIVITIES IN A WATER BODY OR THE RIPARIAN ZONE?																																											
Will the project require construction activities in a water body or the riparian zone?: (*)	<div>No</div>																																										
If Yes, describe scope of activity: (✓)	<div>describe scope of activity</div>																																										
Is a Clean Water Act 404 permit required?:(*)	<div>Yes</div>																																										

Is a Clean Water Act 401 Water Quality Certification required?:(*)			Yes	
SECTION VII -- NOI PREPARER INFORMATION				
First Name:(*) Anthony		M.I.: K	Last Name:(*) Downs	
		Company Name:(*) KYTC District 5		
Mailing Address:(*) 8310 Westport Road		City:(*) Louisville		State:(*) Kentucky
				Zip:(*) 40242
eMail Address:(*) keith.downs@ky.gov		Business Phone:(*) 502-764-0515		Alternate Phone: Phone
SECTION VIII -- ATTACHMENTS				
Facility Location Map:(*)		Upload file		
Supplemental Information:		Upload file		
SECTION IX -- CERTIFICATION				
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.				
Signature:(*) Matt Bullock			Title:(*) Chief District Engineer	
First Name:(*) Matt		M.I.: A	Last Name:(*) Bullock	
eMail Address:(*) Matt.Bullock@ky.gov		Business Phone:(*) 502-210-5400		Alternate Phone: Phone
				Signature Date:(*) 1/30/2025
<div>Click to Save Values for Future Retrieval</div> <div>Click to Submit to EEC</div>				

KENTUCKY TRANSPORTATION CABINET
COMMUNICATING ALL PROMISES (CAP)

Item No. 5 - 804

County: Jefferson

Route: 264

Project Manager: KEITH DOWNS

1/9/25

CAP #	Date of Promise	Promise made to:	Location of Promise:	CAP Description
1	1/9/25	Robert K. and Rebecca D. Kinderman	P 107	<ul style="list-style-type: none">• Our design consultant has reviewed your request and concludes that a pipe could discharge at the proposed ditch elevation. There wouldn't be much cover over the pipe near the outlet headwall and the top of the outlet headwall would likely stick up above the ground some. This determination is based on the installation of a circular pipe, however, and equivalent elliptical pipe would allow for more cover over the new pipe install.• And our design consultant has further emphasized that we are already proposing to lower the I-264 roadside ditch in the plans, which will help the overall drainage situation at this site. Lowering the ditch more as suggested by MSD will cause more right-of-way impacts in this area, which we are trying to avoid.• MSD and/or the property owner will be responsible for all costs to design and install the pipe from Carlimar Drive to the I-264 roadside ditch.
2	1/9/25	Robert K. and Rebecca D. Kinderman	P 108	<ul style="list-style-type: none">• Our design consultant has reviewed your request and concludes that a pipe could discharge at the proposed ditch elevation. There wouldn't be much cover over the pipe near the outlet headwall and the top of the outlet headwall would likely stick up above the ground some. This determination is based on the installation of a circular pipe, however, and equivalent elliptical pipe would allow for more cover over the new pipe install.• And our design consultant has further emphasized that we are already proposing to lower the I-264 roadside ditch in the plans, which will help the overall drainage situation at this site. Lowering the ditch more as suggested by MSD will cause more right-of-way impacts in this area, which we are trying to avoid.• MSD and/or the property owner will be responsible for all costs to design and install the pipe from Carlimar Drive to the I-264 roadside ditch.
3	1/9/25	Hoffman-Hoffman-Fee-Hoffman	P 110	<ul style="list-style-type: none">• If the property owner's fence is disturbed or damaged during the utility relocation phase or during construction, then the property owner needs to be notified immediately because of the liability of the pool, and then compensated for the damages.
4	1/9/25	Holiday Manor Associates, LTD	P 207	<ul style="list-style-type: none">• The road contractor will notify the property owner, Holiday Manor Associates, LLC, 30 days prior to the start of construction on or along their property. Contact Mark Blieden, Manager of Holiday Manor Associates, LLC, at 502-939-1999. KYTC cannot require utility companies to provide any notice.
5	1/9/25	William A., Jr. and Janis B. Fowler	P 209	<ul style="list-style-type: none">• Owner (attorney) wishes to be contacted 2 weeks prior to the beginning of utility and road construction, if at all possible. Attorney: Cliff Travis: 502-744-3708.
6	1/9/25	Harold F. and Suzette Govoni	P 213	<ul style="list-style-type: none">• The road contractor agrees to do a pre-blast and post-blast survey of the in-ground pool on the property.

MATERIAL SUMMARY

CONTRACT ID: 251007

NH 2641 (176)

DE05602642507

I-264 ASPHALT RESURFACING ON I-264 FROM MP 20.590 TO MP 21.280 EB. & MP. 20.560 TO MP 21.020 WB & MP. 22.590 TO MP 22.890 WB ASPHALT RESURFACING, A DISTANCE OF 2.33 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0005	00100	ASPHALT SEAL AGGREGATE	45.00	TON
0010	00103	ASPHALT SEAL COAT	5.00	TON
0015	00194	LEVELING & WEDGING PG76-22	288.00	TON
0020	00210	CL4 ASPH BASE 1.50D PG76-22	7,656.00	TON
0025	00342	CL4 ASPH SURF 0.38A PG76-22	5,772.00	TON
0030	02677	ASPHALT PAVE MILLING & TEXTURING	13,428.00	TON
0035	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	49.00	TON
0040	02585	EDGE KEY	38.00	LF
0045	02650	MAINTAIN & CONTROL TRAFFIC	1.00	LS
0050	02676	MOBILIZATION FOR MILL & TEXT	1.00	LS
0055	02726	STAKING	1.00	LS
0060	06511	PAVE STRIPING-TEMP PAINT-6 IN	10,000.00	LF
0065	06542	PAVE STRIPING-THERMO-6 IN W	4,977.00	LF
0070	06543	PAVE STRIPING-THERMO-6 IN Y	11,034.00	LF
0075	06546	PAVE STRIPING-THERMO-12 IN W	4,502.00	LF
0080	06565	PAVE MARKING-THERMO X-WALK-6 IN	584.00	LF
0085	06568	PAVE MARKING-THERMO STOP BAR-24IN	116.00	LF
0090	06574	PAVE MARKING-THERMO CURV ARROW	30.00	EACH
0095	06575	PAVE MARKING-THERMO COMB ARROW	4.00	EACH
0100	06575	PAVE MARKING-THERMO COMB ARROW	2.00	EACH
0105	06600	REMOVE PAVEMENT MARKER TYPE V	370.00	EACH
0110	06613	INLAID PAVEMENT MARKER-B W/R	326.00	EACH
0115	06614	INLAID PAVEMENT MARKER-B Y/R	44.00	EACH
0120	20071EC	JOINT ADHESIVE	35,800.00	LF
0125	22520EN	PAVE MARKING-THERMO YIELD BAR-36 IN	62.00	LF
0130	23261EC	PAVE MARK-THERMO-X-WALK-24 IN	100.00	LF
0135	23607EC	PAVE MARK THERMO-LANE REDUCTION ARROW	5.00	EACH
0140	24679ED	PAVE MARK THERMO CHEVRON	900.00	SQFT
0145	24689EC	PAVE MARK THERMO-WRONG WAY ARROW	7.00	EACH
0150	24899EC	PAVE MARKING-THERMO ELONG ROUTE SHIELD	8.00	EACH
0155	26146ES717	PAVE MARK TY 1 TAPE LANE REDUCTION ARROW	1.00	EACH
0160	26240EC	PAVE STRIPE-WET REF CONT TAPE-6 IN W	1,424.00	LF
0165	26241EC	PAVE STRIPE-WET REF CONT TAPE-6 IN Y	712.00	LF
0170	03299	ARMORED EDGE FOR CONCRETE	256.00	LF
0175	08472	EXPANSION DAM-4 IN NEOPRENE	256.00	LF
0180	02568	MOBILIZATION	1.00	LS

CONTRACT ID: 251007

NH 2641 (176)

DE05602642508

I-264 / US-42 INTERCHANGE RECONSTRUCT/WIDEN I-264(WATTERSON EXPRESSWAY) FROM WESTPORT ROAD (KY-1447) TO I-71 INCLUDING THE US-42 INTERCHANGE AS A SPUI GRADE DRAIN & SURFACE WITH BRIDGE, A DISTANCE OF 3.65 MILES.

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0185	00003	CRUSHED STONE BASE	67,098.00	TON
0190	00018	DRAINAGE BLANKET-TYPE II-ASPH	21,166.00	TON
0195	00100	ASPHALT SEAL AGGREGATE	243.00	TON
0200	00103	ASPHALT SEAL COAT	29.00	TON
0205	00190	LEVELING & WEDGING PG64-22	16,035.00	TON
0210	00212	CL2 ASPH BASE 1.00D PG64-22	1,462.00	TON
0215	00214	CL3 ASPH BASE 1.00D PG64-22	6,563.00	TON
0220	00216	CL3 ASPH BASE 1.00D PG76-22	2,971.00	TON
0225	00217	CL4 ASPH BASE 1.00D PG64-22	41,716.00	TON
0230	00219	CL4 ASPH BASE 1.00D PG76-22	15,602.00	TON
0235	00296	ASPHALT PRIME COAT	67.00	TON
0240	00301	CL2 ASPH SURF 0.38D PG64-22	768.00	TON
0245	00336	CL3 ASPH SURF 0.38A PG76-22	2,099.00	TON
0250	00342	CL4 ASPH SURF 0.38A PG76-22	14,456.00	TON
0255	02084	JPC PAVEMENT-8 IN	102.00	SQYD
0260	02101	CEM CONC ENT PAVEMENT-8 IN	68.00	SQYD
0265	02677	ASPHALT PAVE MILLING & TEXTURING	1,618.00	TON
0270	22906ES403	CL3 ASPH SURF 0.38A PG64-22	896.00	TON
0275	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	101.00	TON
0280	00078	CRUSHED AGGREGATE SIZE NO 2	5,782.00	TON
0285	01314	PLUG PIPE	12.00	EACH
0290	01584	CAP DROP BOX INLET	3.00	EACH
0295	01691	FLUME INLET TYPE 2	2.00	EACH
0300	01717	FILL AND CAP INLET	12.00	EACH
0305	01786	FILL AND CAP MANHOLE	1.00	EACH
0310	01791	ADJUST MANHOLE FRAME TO GRADE	2.00	EACH
0315	01792	ADJUST MANHOLE	2.00	EACH
0320	01810	STANDARD CURB AND GUTTER	2,365.00	LF
0325	01811	STANDARD CURB AND GUTTER MOD	5,018.00	LF
0330	01875	STANDARD HEADER CURB	703.00	LF
0335	01917	STANDARD BARRIER MEDIAN TYPE 2	984.00	SQYD
0340	01921	STANDARD BARRIER MEDIAN TYPE 4	126.00	SQYD
0345	01978	CONC MEDIAN BARRIER TYPE A TL5 56 IN	5,529.00	LF
0350	01982	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	78.00	EACH
0355	01983	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	129.00	EACH
0360	02003	RELOCATE TEMP CONC BARRIER	19,527.00	LF
0365	02014	BARRICADE-TYPE III	138.00	EACH
0370	02155	PAVED DITCH TYPE 1 MOD	424.00	SQYD
0375	02159	TEMP DITCH	15,175.00	LF
0380	02160	CLEAN TEMP DITCH	7,588.00	LF
0385	02200	ROADWAY EXCAVATION	183,650.00	CUYD
0390	02242	WATER	3,275.00	MGAL
0395	02262	FENCE-WOVEN WIRE TYPE 1	4,254.00	LF
0400	02367	GUARDRAIL END TREATMENT TYPE 1	8.00	EACH
0405	02369	GUARDRAIL END TREATMENT TYPE 2A	13.00	EACH
0410	02381	REMOVE GUARDRAIL	13,956.00	LF
0415	02391	GUARDRAIL END TREATMENT TYPE 4A	4.00	EACH
0420	02429	RIGHT-OF-WAY MONUMENT TYPE 1	25.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0425	02430	RIGHT-OF-WAY MONUMENT TYPE 1A	7.00	EACH
0430	02432	WITNESS POST	3.00	EACH
0435	02483	CHANNEL LINING CLASS II	6,220.00	TON
0440	02484	CHANNEL LINING CLASS III	2,187.00	TON
0445	02545	CLEARING AND GRUBBING - 57.9 ACRES	1.00	LS
0450	02555	CONCRETE-CLASS B	75.25	CUYD
0455	02562	TEMPORARY SIGNS	3,950.00	SQFT
0460	02585	EDGE KEY	540.00	LF
0465	02602	FABRIC-GEOTEXTILE CLASS 1	19,174.00	SQYD
0470	02604	FABRIC-GEOTEXTILE CLASS 1A	7,500.00	SQYD
0475	02650	MAINTAIN & CONTROL TRAFFIC	1.00	LS
0480	02671	PORTABLE CHANGEABLE MESSAGE SIGN	8.00	EACH
0485	02676	MOBILIZATION FOR MILL & TEXT	1.00	LS
0490	02690	SAFELOADING	168.00	CUYD
0495	02701	TEMP SILT FENCE	15,175.00	LF
0500	02703	SILT TRAP TYPE A	101.00	EACH
0505	02704	SILT TRAP TYPE B	101.00	EACH
0510	02705	SILT TRAP TYPE C	101.00	EACH
0515	02706	CLEAN SILT TRAP TYPE A	101.00	EACH
0520	02707	CLEAN SILT TRAP TYPE B	101.00	EACH
0525	02708	CLEAN SILT TRAP TYPE C	101.00	EACH
0530	02720	SIDEWALK-4 IN CONCRETE	1,860.00	SQYD
0535	02723	SIDEWALK-6 IN CONCRETE	2,381.00	SQYD
0540	02726	STAKING	1.00	LS
0545	02731	REMOVE STRUCTURE - REMOVAL OF EXISTING I-71 RAMP BRIDGE	1.00	LS
0550	02731	REMOVE STRUCTURE - REMOVAL OF EXISTING US 42 BRIDGE OVER 1-264	1.00	LS
0555	02775	ARROW PANEL	19.00	EACH
0560	02898	RELOCATE CRASH CUSHION	4.00	EACH
0565	03171	CONC BARRIER WALL TYPE 9T	24,045.00	LF
0570	05950	EROSION CONTROL BLANKET	41,167.00	SQYD
0575	05952	TEMP MULCH	332,440.00	SQYD
0580	05953	TEMP SEEDING AND PROTECTION	254,120.00	SQYD
0585	05963	INITIAL FERTILIZER	12.75	TON
0590	05964	MAINTENANCE FERTILIZER	17.25	TON
0595	05985	SEEDING AND PROTECTION	201,932.00	SQYD
0600	05990	SODDING	2,370.00	SQYD
0605	05992	AGRICULTURAL LIMESTONE	258.00	TON
0610	06401	FLEXIBLE DELINEATOR POST-M/W	91.00	EACH
0615	06404	FLEXIBLE DELINEATOR POST-M/Y	99.00	EACH
0620	06510	PAVE STRIPING-TEMP PAINT-4 IN	179,051.00	LF
0625	06511	PAVE STRIPING-TEMP PAINT-6 IN	133,056.00	LF
0630	06513	PAVE STRIPING-TEMP PAINT-12 IN	12,000.00	LF
0635	06515	PAVE STRIPING-PERM PAINT-6 IN	3,675.00	LF
0640	06542	PAVE STRIPING-THERMO-6 IN W	54,707.00	LF
0645	06543	PAVE STRIPING-THERMO-6 IN Y	34,717.00	LF
0650	06546	PAVE STRIPING-THERMO-12 IN W	12,676.00	LF
0655	06547	PAVE STRIPING-THERMO-12 IN Y	231.00	LF
0660	06550	PAVE STRIPING-TEMP REM TAPE-W	900.00	LF
0665	06551	PAVE STRIPING-TEMP REM TAPE-Y	900.00	LF

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0670	06556	PAVE STRIPING-DUR TY 1-6 IN W	462.00	LF
0675	06557	PAVE STRIPING-DUR TY 1-6 IN Y	440.00	LF
0680	06565	PAVE MARKING-THERMO X-WALK-6 IN	2,067.00	LF
0685	06568	PAVE MARKING-THERMO STOP BAR-24IN	689.00	LF
0690	06569	PAVE MARKING-THERMO CROSS-HATCH	455.00	SQFT
0695	06570	PAVE MARKING-PAINT CROSS-HATCH	115.00	SQFT
0700	06573	PAVE MARKING-THERMO STR ARROW	12.00	EACH
0705	06574	PAVE MARKING-THERMO CURV ARROW	138.00	EACH
0710	06575	PAVE MARKING-THERMO COMB ARROW	14.00	EACH
0715	06576	PAVE MARKING-THERMO ONLY	5.00	EACH
0720	06598	PAVEMENT MARKING REMOVAL	790.00	SQFT
0725	06600	REMOVE PAVEMENT MARKER TYPE V	1,259.00	EACH
0730	06610	INLAID PAVEMENT MARKER-MW	150.00	EACH
0735	06612	INLAID PAVEMENT MARKER-BY	131.00	EACH
0740	06613	INLAID PAVEMENT MARKER-B W/R	1,355.00	EACH
0745	06614	INLAID PAVEMENT MARKER-B Y/R	118.00	EACH
0750	08903	CRASH CUSHION TY VI CLASS BT TL3	11.00	EACH
0755	10020NS	FUEL ADJUSTMENT	249,183.00	DOLL
0760	10030NS	ASPHALT ADJUSTMENT	402,720.00	DOLL
0765	15094	S MANHOLE ADJUST TO GRADE	5.00	EACH
0770	20071EC	JOINT ADHESIVE	77,428.00	LF
0775	20166ES810	TEMPORARY PIPE	1,000.00	LF
0780	20191ED	OBJECT MARKER TY 3	12.00	EACH
0785	20432ES112	REMOVE CRASH CUSHION	2.00	EACH
0790	20550ND	SAWCUT PAVEMENT	52,499.00	LF
0795	21289ED	LONGITUDINAL EDGE KEY	46,706.00	LF
0800	21417ES717	PAVE MARK THERMO CONE CAP-SOLID YELLOW	22.00	SQFT
0805	21802EN	G/R STEEL W BEAM-S FACE (7 FT POST)	11,378.50	LF
0810	22520EN	PAVE MARKING-THERMO YIELD BAR-36 IN	60.00	LF
0815	22664EN	WATER BLASTING EXISTING STRIPE	316,200.00	LF
0820	22692NS714	PAVEMENT MARKING-THERMO LETTERS	10.00	EACH
0825	22880ED	BARRIER WALL TRANSITION	50.00	LF
0830	22880ED	BARRIER WALL TRANSITION	25.00	LF
0835	23158ES505	DETECTABLE WARNINGS	795.00	SQFT
0840	23251ES717	PAVE MARK TY 1 TAPE X-WALK-6 IN	263.00	LF
0845	23261EC	PAVE MARK-THERMO-X-WALK-24 IN	250.00	LF
0850	23265ES717	PAVE MARK TY 1 TAPE STOP BAR-24 IN	25.00	LF
0855	23270ES717	PAVE MARK TY 1 TAPE-CURV ARROW	2.00	EACH
0860	23314EC	CONCRETE TRENCH	1,612.00	LF
0865	23607EC	PAVE MARK THERMO-LANE REDUCTION ARROW	16.00	EACH
0870	23871EC	PAVE STRIPE-WET REF TAPE-6 IN Y	161.00	LF
0875	23872EC	PAVE STRIPE-WET REF TAPE-6 IN W	399.00	LF
0880	24280EC	PAVE MARK THERMO CHEVRON-48 IN	3,492.00	LF
0885	24544EC	REMOVE - REMOVE BARRIER WALL AND RAILING SYSTEM AND SOUND WALL	4,049.00	LF
0890	24596EN	GRANULAR BACKFILL	2,820.00	CUYD
0895	24640ED	OBJECT MARKER TYPE 1	11.00	EACH
0900	24679ED	PAVE MARK THERMO CHEVRON	379.00	SQFT
0905	24683ED	PAVE MARKING-THERMO DOTTED LANE EXTEN	294.00	LF
0910	24689EC	PAVE MARK THERMO-WRONG WAY ARROW	7.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0915	24744ED	GUARDRAIL CONN TO CONC MED BARR MOD-CR	1.00	EACH
0920	24899EC	PAVE MARKING-THERMO ELONG ROUTE SHIELD	10.00	EACH
0925	25028ED	RAIL SYSTEM SINGLE SLOPE - 40 IN - PRICE INCLUDES MOMENT SLAB FOR BARRIER	8,545.00	LF
0930	25078ED	THRIE BEAM GUARDRAIL TRANSITION TL-3	10.00	EACH
0935	25079ED	THRIE BEAM GUARDRAIL TRANSITION TL-2	4.00	EACH
0940	26155EC	PAVE MARK-THERMO POLY MOD LANE USE ARROW	8.00	EACH
0945	26156EC	PAVE MARK-THERMO POLY MOD LANE COMBO ARR	8.00	EACH
0950	26164ES717	PAVE MARK TY 1 TAPE X-WALK-24 IN	350.00	LF
0955	00462	CULVERT PIPE-18 IN	45.00	LF
0960	00464	CULVERT PIPE-24 IN	93.00	LF
0965	00466	CULVERT PIPE-30 IN	79.00	LF
0970	00468	CULVERT PIPE-36 IN	14.00	LF
0975	00470	CULVERT PIPE-48 IN	19.00	LF
0980	00521	STORM SEWER PIPE-15 IN	3,575.00	LF
0985	00522	STORM SEWER PIPE-18 IN	5,490.00	LF
0990	00524	STORM SEWER PIPE-24 IN	1,083.00	LF
0995	00526	STORM SEWER PIPE-30 IN	199.00	LF
1000	00528	STORM SEWER PIPE-36 IN	1,072.00	LF
1005	00529	STORM SEWER PIPE-42 IN	1,390.00	LF
1010	00530	STORM SEWER PIPE-48 IN	1,485.00	LF
1015	00551	STORM SEWER PIPE-15 IN EQUIV	30.00	LF
1020	01001	PERFORATED PIPE-6 IN	20,363.00	LF
1025	01011	NON-PERFORATED PIPE-6 IN	8,122.00	LF
1030	01015	INSPECT & CERTIFY EDGE DRAIN SYSTEM	1.00	LS
1035	01025	PERF PIPE HEADWALL TY 2-6 IN	12.00	EACH
1040	01029	PERF PIPE HEADWALL TY 3-6 IN	12.00	EACH
1045	01033	PERF PIPE HEADWALL TY 4-6 IN	8.00	EACH
1050	01202	PIPE CULVERT HEADWALL-15 IN	20.00	EACH
1055	01204	PIPE CULVERT HEADWALL-18 IN	20.00	EACH
1060	01208	PIPE CULVERT HEADWALL-24 IN	3.00	EACH
1065	01210	PIPE CULVERT HEADWALL-30 IN	1.00	EACH
1070	01212	PIPE CULVERT HEADWALL-36 IN	4.00	EACH
1075	01441	SLOPED BOX INLET-OUTLET TYPE 2	2.00	EACH
1080	01451	S & F BOX INLET-OUTLET-24 IN	1.00	EACH
1085	01456	CURB BOX INLET TYPE A	19.00	EACH
1090	01459	CURB BOX INLET TYPE A MOD	8.00	EACH
1095	01480	CURB BOX INLET TYPE B	5.00	EACH
1100	01484	CURB BOX INLET TYPE B-T	1.00	EACH
1105	01490	DROP BOX INLET TYPE 1	8.00	EACH
1110	01491	DROP BOX INLET TYPE 1 MOD	4.00	EACH
1115	01494	DROP BOX INLET TYPE 2 MOD	2.00	EACH
1120	01496	DROP BOX INLET TYPE 3	1.00	EACH
1125	01502	DROP BOX INLET TYPE 5A	4.00	EACH
1130	01542	DROP BOX INLET TYPE 10 MOD	4.00	EACH
1135	01544	DROP BOX INLET TYPE 11	2.00	EACH
1140	01559	DROP BOX INLET TYPE 13G	9.00	EACH
1145	01568	DROP BOX INLET TYPE 13S	4.00	EACH
1150	01577	DROP BOX INLET TYPE 14	1.00	EACH
1155	01580	DROP BOX INLET TYPE 15	2.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1160	01587	DROP BOX INLET TYPE 16S	1.00	EACH
1165	01597	CONC MED BARR BOX INLET TY A1	3.00	EACH
1170	01598	CONC MED BARR BOX INLET TY B1	51.00	EACH
1175	01623	CONC MED BARR BOX INLET TY B1 TL5 56	8.00	EACH
1180	01624	CONC MED BARR BOX INLET TY B2 TL5 56	24.00	EACH
1185	01626	CONC MED BARR BOX INLET TY A2 TL5 56	1.00	EACH
1190	01650	JUNCTION BOX	21.00	EACH
1195	01720	RECONSTRUCT INLET	2.00	EACH
1200	01741	CORED HOLE DRAINAGE BOX CON-6 IN	104.00	EACH
1205	01756	MANHOLE TYPE A	4.00	EACH
1210	01768	MANHOLE TYPE C MOD	1.00	EACH
1215	02478	CAP INLET	8.00	SQYD
1220	02607	FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	19,992.00	SQYD
1225	08100	CONCRETE-CLASS A	31.00	CUYD
1230	20571ES710	DROP BOX INLET TY 16G(MOD)	4.00	EACH
1235	21541NN	CORED HOLE DRAINAGE BOX CON- 18 IN	7.00	EACH
1240	23074NN	ADJUST DRAINAGE STRUCTURE	3.00	EACH
1245	23610NC	CORED HOLE DRAINAGE BOX CON	1.00	EACH
1250	23952EC	DRAINAGE JUNCTION BOX TY B	3.00	EACH
1255	24186EC	BORE AND JACK PIPE-36 IN	155.00	LF
1260	24814EC	PIPELINE INSPECTION	14,148.00	LF
1265	02403	REMOVE CONCRETE MASONRY	13.00	CUYD
1270	08003	FOUNDATION PREPARATION	1.00	LS
1275	08100	CONCRETE-CLASS A	25.30	CUYD
1280	08150	STEEL REINFORCEMENT	2,523.00	LB
1285	02403	REMOVE CONCRETE MASONRY	12.00	CUYD
1290	08003	FOUNDATION PREPARATION	1.00	LS
1295	08100	CONCRETE-CLASS A	26.40	CUYD
1300	08150	STEEL REINFORCEMENT	2,095.00	LB
1305	23929EC	LIGHTWEIGHT AGGREGATE FILL	156.00	CUYD
1310	23931EC	EPS FOAM BLOCK	2,524.00	CUFT
1315	26145EC	4 IN CONCRETE LOAD DISTRIBUTOR	94.00	SQYD
1320	02223	GRANULAR EMBANKMENT	70.00	CUYD
1325	08003	FOUNDATION PREPARATION	1.00	LS
1330	08100	CONCRETE-CLASS A	50.10	CUYD
1335	08150	STEEL REINFORCEMENT	4,590.00	LB
1340	02223	GRANULAR EMBANKMENT	146.00	CUYD
1345	08003	FOUNDATION PREPARATION	1.00	LS
1350	08100	CONCRETE-CLASS A	38.10	CUYD
1355	08150	STEEL REINFORCEMENT	4,580.00	LB
1360	23931EC	EPS FOAM BLOCK	36,830.00	CUFT
1365	02231	STRUCTURE GRANULAR BACKFILL	1,000.00	CUYD
1370	03299	ARMORED EDGE FOR CONCRETE	137.40	LF
1375	08002	STRUCTURE EXCAV-SOLID ROCK	395.00	CUYD
1380	08003	FOUNDATION PREPARATION	1.00	LS
1385	08100	CONCRETE-CLASS A	201.00	CUYD
1390	08104	CONCRETE-CLASS AA	589.90	CUYD
1395	08130	MECHANICAL REINF COUPLER #5	24.00	EACH
1400	08134	MECHANICAL REINF COUPLER #9	32.00	EACH
1405	08140	MECHANICAL REINF COUPLER #5 EPOXY COATED	588.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1410	08150	STEEL REINFORCEMENT	37,740.00	LB
1415	08151	STEEL REINFORCEMENT-EPOXY COATED	85,760.00	LB
1420	08160	STRUCTURAL STEEL - 782,400 LBS	1.00	LS
1425	08170	SHEAR CONNECTORS - 3720 EACH	1.00	LS
1430	20745ED	ROCK SOUNDINGS	128.00	LF
1435	20746ED	ROCK CORINGS	302.00	LF
1440	23378EC	CONCRETE SEALING	23,320.00	SQFT
1445	25028ED	RAIL SYSTEM SINGLE SLOPE - 40 IN	394.80	LF
1450	26172EC	DRILLED SHAFT-36 IN SOLID ROCK	112.00	LF
1455	26173EC	DRILLED SHAFT-42 IN COMMON	80.00	LF
1460	02231	STRUCTURE GRANULAR BACKFILL	11,000.00	CUYD
1465	02998	MASONRY COATING	2,808.00	SQYD
1470	03299	ARMORED EDGE FOR CONCRETE	2,120.00	LF
1475	08002	STRUCTURE EXCAV-SOLID ROCK	127.00	CUYD
1480	08003	FOUNDATION PREPARATION	1.00	LS
1485	08100	CONCRETE-CLASS A	1,709.70	CUYD
1490	08104	CONCRETE-CLASS AA	1,064.30	CUYD
1495	08140	MECHANICAL REINF COUPLER #5 EPOXY COATED	86.00	EACH
1500	08141	MECHANICAL REINF COUPLER #6 EPOXY COATED	86.00	EACH
1505	08151	STEEL REINFORCEMENT-EPOXY COATED	790,687.00	LB
1510	08160	STRUCTURAL STEEL - 29,904 LBS	1.00	LS
1515	08170	SHEAR CONNECTORS - 804 EACH	1.00	LS
1520	08500	APPROACH SLAB	1,392.00	SQYD
1525	08672	PRECAST PC BOX BEAM SB42	2,192.00	LF
1530	08711	BRIDGE CHAIN LINK FENCE-6 FT	216.00	LF
1535	20745ED	ROCK SOUNDINGS	174.00	LF
1540	20746ED	ROCK CORINGS	1,705.00	LF
1545	23000EX	DRILLED SHAFT-66 IN (ROCK)	682.00	LF
1550	23158ES505	DETECTABLE WARNINGS	204.00	SQFT
1555	23249EC	DRILLED SHAFT-72 IN COMMON	70.00	LF
1560	23378EC	CONCRETE SEALING	26,613.00	SQFT
1565	24405EC	MECHANICAL REINF COUPLER #8-EPOXY COATED	3.00	EACH
1570	25027ED	RAIL SYSTEM SINGLE SLOPE - 36 IN	356.00	LF
1575	25029ED	STEEL HANDRAIL	356.00	LF
1580	25121EC	MECHANICAL REINF COUPLER #10-EPOXY COAT	52.00	EACH
1585	21590EN	SOUND BARRIER WALL	258,478.00	SQFT
1590	23583EC	DRILLED SHAFT-48 IN-COMMON	10.00	LF
1595	23584EC	DRILLED SHAFT-42 IN-ROCK	6.00	LF
1600	26172EC	DRILLED SHAFT-36 IN SOLID ROCK	2,268.00	LF
1605	26173EC	DRILLED SHAFT-42 IN COMMON	3,401.00	LF
1610	01986	DELINEATOR FOR BARRIER WALL-B/Y	50.00	EACH
1615	04886	MESSENGER-15400 LB	210.00	LF
1620	04932	INSTALL STEEL STRAIN POLE	4.00	EACH
1625	06405	SBM ALUMINUM PANEL SIGNS	11,360.00	SQFT
1630	06406	SBM ALUM SHEET SIGNS .080 IN	184.00	SQFT
1635	06407	SBM ALUM SHEET SIGNS .125 IN	1,614.00	SQFT
1640	06410	STEEL POST TYPE 1	1,065.00	LF
1645	06411	STEEL POST TYPE 2	2,640.00	LF
1650	06412	STEEL POST MILE MARKERS	12.00	EACH
1655	06448	SIGN BRIDGE ATTACHMENT BRACKET	4.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1660	06449	REM OVERHEAD SIGN SUPPORT STR	8.00	EACH
1665	06450	REM OVERHEAD STRUC CONC BASE	16.00	EACH
1670	06451	REMOVE SIGN SUPPORT BEAM	105.00	EACH
1675	06472	INSTALL SPAN MOUNTED SIGN	3.00	EACH
1680	06478	OSS GALV STEEL 75 FT TRUSS	1.00	EACH
1685	06480	OSS GALV STEEL 85 FT TRUSS	4.00	EACH
1690	06481	OSS GALV STEEL 90 FT TRUSS	4.00	EACH
1695	06482	OSS GALV STEEL 95 FT TRUSS	1.00	EACH
1700	06490	CLASS A CONCRETE FOR SIGNS	650.00	CUYD
1705	06491	STEEL REINFORCEMENT FOR SIGNS	15,000.00	LB
1710	06495	OSS GALV STEEL 125 FT TRUSS	1.00	EACH
1715	06498	OSS GALV STEEL 140 FT TRUSS	1.00	EACH
1720	06499	OSS GALV STEEL 160 FT TRUSS	1.00	EACH
1725	20419ND	ROADWAY CROSS SECTION	15.00	EACH
1730	23157EN	TRAFFIC SIGNAL POLE BASE	16.00	CUYD
1735	23639ED	REM SIGN BRIDGE MOUNT ATTACHMENT	1.00	EACH
1740	24631EC	BARCODE SIGN INVENTORY	182.00	EACH
1745	04793	CONDUIT-1 1/4 IN	80.00	LF
1750	04795	CONDUIT-2 IN	40.00	LF
1755	04811	ELECTRICAL JUNCTION BOX TYPE B	6.00	EACH
1760	04820	TRENCHING AND BACKFILLING	596.00	LF
1765	04820	TRENCHING AND BACKFILLING	120.00	LF
1770	04829	PIEZOELECTRIC SENSOR	40.00	EACH
1775	04830	LOOP WIRE	8,392.00	LF
1780	04845	CABLE-NO. 14/7C	11,743.00	LF
1785	04886	MESSENGER-15400 LB	3,882.00	LF
1790	04895	LOOP SAW SLOT AND FILL	2,626.00	LF
1795	04932	INSTALL STEEL STRAIN POLE	16.00	EACH
1800	04953	TEMP RELOCATION OF SIGNAL HEAD	85.00	EACH
1805	04960	REMOVE AND REPLACE SIDEWALK	10.00	SQYD
1810	06406	SBM ALUM SHEET SIGNS .080 IN	77.00	SQFT
1815	06472	INSTALL SPAN MOUNTED SIGN	20.00	EACH
1820	20093NS835	INSTALL PEDESTRIAN HEAD-LED	28.00	EACH
1825	20188NS835	INSTALL LED SIGNAL-3 SECTION	37.00	EACH
1830	20189NS835	INSTALL LED SIGNAL-5 SECTION	3.00	EACH
1835	20266ES835	INSTALL LED SIGNAL- 4 SECTION	9.00	EACH
1840	20359NN	GALVANIZED STEEL CABINET	6.00	EACH
1845	20360ES818	WOOD POST	12.00	EACH
1850	20390NS835	INSTALL COORDINATING UNIT	4.00	EACH
1855	20391NS835	ELECTRICAL JUNCTION BOX TYPE A	7.00	EACH
1860	21743NN	INSTALL PEDESTRIAN DETECTOR	28.00	EACH
1865	23157EN	TRAFFIC SIGNAL POLE BASE	71.00	CUYD
1870	23222EC	INSTALL SIGNAL PEDESTAL	20.00	EACH
1875	23235EC	INSTALL PEDESTAL POST	1.00	EACH
1880	24900EC	PVC CONDUIT-1 1/4 IN-SCHEDULE 80	276.00	LF
1885	24901EC	PVC CONDUIT-2 IN-SCHEDULE 80	635.00	LF
1890	24908EC	INSTALL SIGNAL CONTROLLER-TY ATC	4.00	EACH
1895	24955ED	REMOVE SIGNAL EQUIPMENT	5.00	EACH
1900	26119EC	INSTALL RADAR PRESENCE DETECTOR TYPE A	15.00	EACH
1905	26120EC	INSTALL RADAR ADVANCE DETECTOR TYPE B	1.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1910	04700	POLE 30 FT MTG HT	12.00	EACH
1915	04701	POLE 40 FT MTG HT	64.00	EACH
1920	04721	BRACKET 6 FT	1.00	EACH
1925	04722	BRACKET 8 FT	9.00	EACH
1930	04723	BRACKET 10 FT	6.00	EACH
1935	04724	BRACKET 12 FT	15.00	EACH
1940	04725	BRACKET 15 FT	13.00	EACH
1945	04740	POLE BASE	42.00	EACH
1950	04741	POLE BASE IN MEDIAN WALL	34.00	EACH
1955	04750	TRANSFORMER BASE	42.00	EACH
1960	04780	FUSED CONNECTOR KIT	168.00	EACH
1965	04795	CONDUIT-2 IN	1,800.00	LF
1970	04820	TRENCHING AND BACKFILLING	7,800.00	LF
1975	04832	WIRE-NO. 12	10,500.00	LF
1980	04833	WIRE-NO. 8	26,700.00	LF
1985	04834	WIRE-NO. 6	26,200.00	LF
1990	04835	WIRE-NO. 4	4,600.00	LF
1995	04940	REMOVE LIGHTING	1.00	LS
2000	20391NS835	ELECTRICAL JUNCTION BOX TYPE A	17.00	EACH
2005	20392NS835	ELECTRICAL JUNCTION BOX TYPE C	4.00	EACH
2010	20410ED	MAINTAIN LIGHTING	1.00	LS
2015	21543EN	BORE AND JACK CONDUIT	1,300.00	LF
2020	24589ED	LED LUMINAIRE	107.00	EACH
2025	24900EC	PVC CONDUIT-1 1/4 IN-SCHEDULE 80	7,000.00	LF
2030	24901EC	PVC CONDUIT-2 IN-SCHEDULE 80	1,400.00	LF
2035	24902EC	PVC CONDUIT-3 IN-SCHEDULE 80	100.00	LF
2040	00003	CRUSHED STONE BASE	35.00	TON
2045	00100	ASPHALT SEAL AGGREGATE	.09	TON
2050	00103	ASPHALT SEAL COAT	.02	TON
2055	00212	CL2 ASPH BASE 1.00D PG64-22	17.00	TON
2060	00301	CL2 ASPH SURF 0.38D PG64-22	19.00	TON
2065	02091	REMOVE PAVEMENT	309.00	SQYD
2070	02223	GRANULAR EMBANKMENT	510.00	CUYD
2075	02585	EDGE KEY	40.00	LF
2080	02602	FABRIC-GEOTEXTILE CLASS 1	625.00	SQYD
2085	02676	MOBILIZATION FOR MILL & TEXT	1.00	LS
2090	02677	ASPHALT PAVE MILLING & TEXTURING	10.00	TON
2095	02690	SAFELOADING	5.00	CUYD
2100	02701	TEMP SILT FENCE	2,700.00	LF
2105	02704	SILT TRAP TYPE B	10.00	EACH
2110	02705	SILT TRAP TYPE C	5.00	EACH
2115	02707	CLEAN SILT TRAP TYPE B	10.00	EACH
2120	02708	CLEAN SILT TRAP TYPE C	5.00	EACH
2125	02720	SIDEWALK-4 IN CONCRETE	10.00	SQYD
2130	02721	REMOVE CONCRETE SIDEWALK	10.00	SQYD
2135	05952	TEMP MULCH	2,750.00	SQYD
2140	05953	TEMP SEEDING AND PROTECTION	2,750.00	SQYD
2145	05985	SEEDING AND PROTECTION	6,350.00	SQYD
2150	05990	SODDING	2,158.00	SQYD
2155	08100	CONCRETE-CLASS A	2.50	CUYD

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
2160	14009	W ENCASEMENT STEEL BORED RANGE 4	180.00	LF
2165	14010	W ENCASEMENT STEEL BORED RANGE 5	355.00	LF
2170	14016	W ENCASEMENT STEEL OPEN CUT RANGE 5	135.00	LF
2175	14019	W FIRE HYDRANT ASSEMBLY	8.00	EACH
2180	14025	W METER 1 INCH	7.00	EACH
2185	14026	W METER 1-1/2 INCH	2.00	EACH
2190	14027	W METER 2 INCH	1.00	EACH
2195	14028	W METER 3/4 INCH	9.00	EACH
2200	14035	W PIPE DUCTILE IRON 04 INCH	160.00	LF
2205	14036	W PIPE DUCTILE IRON 06 INCH	400.00	LF
2210	14037	W PIPE DUCTILE IRON 08 INCH	140.00	LF
2215	14039	W PIPE DUCTILE IRON 12 INCH	3,905.00	LF
2220	14048	W PIPE DCTL IRON RSTRND JOINT 08 IN	260.00	LF
2225	14050	W PIPE DCTL IRON RSTRND JOINT 12 IN	1,830.00	LF
2230	14074	W PLUG EXISTING MAIN	29.00	EACH
2235	14077	W SERV PE/PLST LONG SIDE 1 IN	1.00	EACH
2240	14078	W SERV PE/PLST LONG SIDE 1-1/2 IN	1.00	EACH
2245	14080	W SERV PE/PLST LONG SIDE 3/4 IN	6.00	EACH
2250	14082	W SERV PE/PLST SHORT SIDE 1 IN	6.00	EACH
2255	14083	W SERV PE/PLST SHORT SIDE 1-1/2 IN	1.00	EACH
2260	14084	W SERV PE/PLST SHORT SIDE 2 IN	1.00	EACH
2265	14085	W SERV PE/PLST SHORT SIDE 3/4 IN	3.00	EACH
2270	14086	W SERVICE SPECIAL	21.00	EACH
2275	14094	W TIE-IN 06 INCH	6.00	EACH
2280	14095	W TIE-IN 08 INCH	4.00	EACH
2285	14097	W TIE-IN 12 INCH	9.00	EACH
2290	14104	W VALVE 04 INCH	1.00	EACH
2295	14105	W VALVE 06 INCH	3.00	EACH
2300	14106	W VALVE 08 INCH	6.00	EACH
2305	14108	W VALVE 12 INCH	28.00	EACH
2310	14182	W METER 5/8 INCH	14.00	EACH
2315	20550ND	SAWCUT PAVEMENT	139.00	LF
2320	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	.09	TON
2325	02742	TRAINEE PAYMENT REIMBURSEMENT - GROUP 2, 3, 4 OPERATOR	1,400.00	HOUR
2330	02742	TRAINEE PAYMENT REIMBURSEMENT - GROUP 2, 3, 4 OPERATOR	1,400.00	HOUR
2335	02568	MOBILIZATION	1.00	LS
2340	02569	DEMOBILIZATION	1.00	LS

Contract Id: _____ Contractor: _____

Section Engineer: _____ District & County: _____

DESCRIPTION	UNIT	QTY LEAVING PROJECT	QTY RECEIVED@BB YARD
GUARDRAIL (Includes End treatments & crash cushions)	LF	_____	_____
STEEL POSTS	EACH	_____	_____
STEEL BLOCKS	EACH	_____	_____
WOOD OFFSET BLOCKS	EACH	_____	_____
BACK UP PLATES	EACH	_____	_____
CRASH CUSHION	EACH	_____	_____
NUTS, BOLTS, WASHERS	BAG/BCKT	_____	_____
DAMAGED RAIL TO MAINT. FACILITY	LF	_____	_____
DAMAGED POSTS TO MAINT. FACILITY	EACH	_____	_____

***Required Signatures before Leaving Project Site**

Printed Section Engineer’s Representative_____ & Date_____

Signature Section Engineer’s Representative_____ & Date_____

Printed Contractor’s Representative_____ & Date_____

Signature Contractor’s Representative_____ & Date_____

***Required Signatures after Arrival at Bailey Bridge Yard (All material on truck must be counted & the quantity received column completed before signatures)**

Printed Bailey Bridge Yard Representative_____ & Date_____

Signature Bailey Bridge Yard Representative_____ & Date_____

Printed Contractor’s Representative_____ & Date_____

Signature Contractor’s Representative_____ & Date_____

**Payment for the bid item remove guardrail will be based upon the quantities shown in the Bailey Bridge Yard received column. Payment will not be made for guardrail removal until the guardrail verification sheets are electronically submitted to the Section Engineer by the Bailey Bridge Yard Representative.

PART II

SPECIFICATIONS AND STANDARD DRAWINGS

STANDARD SPECIFICATIONS

Any reference in the plans or proposal to previous editions of the *Standard Specifications for Road and Bridge Construction* and *Standard Drawings* are superseded by *Standard Specifications for Road and Bridge Construction, Edition of 2019* and *Standard Drawings, Edition of 2020*.

SUPPLEMENTAL SPECIFICATIONS

The contractor shall use the Supplemental Specifications that are effective at the time of letting. The Supplemental Specifications can be found at the following link:
<http://transportation.ky.gov/Construction/Pages/Kentucky-Standard-Specifications.aspx>

SPECIAL NOTE FOR PORTABLE CHANGEABLE MESSAGE SIGNS

This Special Note will apply when indicated on the plans or in the proposal.

1.0 DESCRIPTION. Furnish, install, operate, and maintain variable message signs at the locations shown on the plans or designated by the Engineer. Remove and retain possession of variable message signs when they are no longer needed on the project.

2.0 MATERIALS.

2.1 General. Use LED Variable Message Signs Class I, II, or III, as appropriate, from the Department's List of Approved Materials.

Unclassified signs may be submitted for approval by the Engineer. The Engineer may require a daytime and nighttime demonstration. The Engineer will make a final decision within 30 days after all required information is received.

2.2 Sign and Controls. All signs must:

- 1) Provide 3-line messages with each line being 8 characters long and at least 18 inches tall. Each character comprises 35 pixels.
- 2) Provide at least 40 preprogrammed messages available for use at any time. Provide for quick and easy change of the displayed message; editing of the message; and additions of new messages.
- 3) Provide a controller consisting of:
 - a) Keyboard or keypad.
 - b) Readout that mimics the actual sign display. (When LCD or LCD type readout is used, include backlighting and heating or otherwise arrange for viewing in cold temperatures.)
 - c) Non-volatile memory or suitable memory with battery backup for storing pre-programmed messages.
 - d) Logic circuitry to control the sequence of messages and flash rate.
- 4) Provide a serial interface that is capable of supporting complete remote control ability through land line and cellular telephone operation. Include communication software capable of immediately updating the message, providing complete sign status, and allowing message library queries and updates.
- 5) Allow a single person easily to raise the sign to a satisfactory height above the pavement during use, and lower the sign during travel.
- 6) Be Highway Orange on all exterior surfaces of the trailer, supports, and controller cabinet.
- 7) Provide operation in ambient temperatures from -30 to + 120 degrees Fahrenheit during snow, rain and other inclement weather.
- 8) Provide the driver board as part of a module. All modules are interchangeable, and have plug and socket arrangements for disconnection and reconnection. Printed circuit boards associated with driver boards have a conformable coating to protect against moisture.
- 9) Provide a sign case sealed against rain, snow, dust, insects, etc. The lens is UV stabilized clear plastic (polycarbonate, acrylic, or other approved material) angled to prevent glare.
- 10) Provide a flat black UV protected coating on the sign hardware, character PCB, and appropriate lens areas.
- 11) Provide a photocell control to provide automatic dimming.

- 12) Allow an on-off flashing sequence at an adjustable rate.
- 13) Provide a sight to aim the message.
- 14) Provide a LED display color of approximately 590 nm amber.
- 15) Provide a controller that is password protected.
- 16) Provide a security device that prevents unauthorized individuals from accessing the controller.
- 17) Provide the following 3-line messages preprogrammed and available for use when the sign unit begins operation:

/KEEP/RIGHT/⇒⇒⇒/	/MIN/SPEED/**MPH/
/KEEP/LEFT/⇐⇐⇐/	/ICY/BRIDGE/AHEAD/ /ONE
/LOOSE/GRAVEL/AHEAD/	LANE/BRIDGE/AHEAD/
/RD WORK/NEXT/**MILES/	/ROUGH/ROAD/AHEAD/
/TWO WAY/TRAFFIC/AHEAD/	/MERGING/TRAFFIC/AHEAD/
/PAINT/CREW/AHEAD/	/NEXT/***/MILES/
/REDUCE/SPEED/**MPH/	/HEAVY/TRAFFIC/AHEAD/
/BRIDGE/WORK/***() FT/	/SPEED/LIMIT/**MPH/
/MAX/SPEED/**MPH/	/BUMP/AHEAD/
/SURVEY/PARTY/AHEAD/	/TWO/WAY/TRAFFIC/

*Insert numerals as directed by the Engineer.
Add other messages during the project when required by the Engineer.

2.3 Power.

- 1) Design solar panels to yield 10 percent or greater additional charge than sign consumption. Provide direct wiring for operation of the sign or arrow board from an external power source to provide energy backup for 21 days without sunlight and an on-board system charger with the ability to recharge completely discharged batteries in 24 hours.

3.0 CONSTRUCTION. Furnish and operate the variable message signs as designated on the plans or by the Engineer. Ensure the bottom of the message panel is a minimum of 7 feet above the roadway in urban areas and 5 feet above in rural areas when operating. Use Class I, II, or III signs on roads with a speed limit less than 55 mph. Use Class I or II signs on roads with speed limits 55 mph or greater.

Maintain the sign in proper working order, including repair of any damage done by others, until completion of the project. When the sign becomes inoperative, immediately repair or replace the sign. Repetitive problems with the same unit will be cause for rejection and replacement.

Use only project related messages and messages directed by the Engineer, unnecessary messages lessen the impact of the sign. Ensure the message is displayed in either one or 2 phases with each phase having no more than 3 lines of text. When no message is needed, but it is necessary to know if the sign is operable, flash only a pixel.

When the sign is not needed, move it outside the clear zone or where the Engineer directs. Variable Message Signs are the property of the Contractor and shall be removed from the project when no longer needed. The Department will not assume ownership of these signs.

4.0 MEASUREMENT. The final quantity of Variable Message Sign will be

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the actual number of individual signs acceptably furnished and operated during the project. The Department will not measure signs replaced due to damage or rejection.

5.0 PAYMENT. The Department will pay for the Variable Message Signs at the unit price each. The Department will not pay for signs replaced due to damage or rejection. Payment is full compensation for furnishing all materials, labor, equipment, and service necessary to, operate, move, repair, and maintain or replace the variable message signs. The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
02671	Portable Changeable Message Sign	Each

Effective June 15, 2012

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SPECIAL NOTE FOR ROADBED STABILIZATION AT BRIDGE ENDS

This Special Note will apply where indicated on the plans or in the proposal. Section references herein are to the Department’s Standard Specifications for Road and Bridge Construction, current edition.

1.0 DESCRIPTION. Due to the wet and yielding embankments commonly encountered at bridge ends, undercut the existing roadbed within the limits the Contract specifies and backfill.

2.0 MATERIALS.

2.1 Geotextile Fabric. Furnish Type III fabric conforming to Section 843.

3.0 CONSTRUCTION. After removing the existing pavement and base, undercut the existing roadbed under the traffic lanes and shoulders as the Engineer directs. The minimum undercut shall be one foot, except undercut depth may be reduced where rock embankment constructed principally of limestone is encountered. Place geotextile fabric in the bottom and against the sides and ends of the undercut. The Department will not require a minimum lap between adjacent sheets of geotextile fabric for the longitudinal joint under the pavement centerline. Backfill the undercut with one or more of the following materials;

- 1) Crushed limestone size No. 1, 2, 23, or 57; or
- 2) Layered composition of several limestone sizes, with larger sizes on the bottom.

Use Dense Graded Aggregate (DGA), Crushed Stone Base (CSB), or Stabilized Aggregate Base (SAB) in the top 4 inches, and only in the top 4 inches, of the backfill.

Place geotextile fabric between the coarse backfill material and the 4-inch upper layer.

Compact the backfill material by “walking down” with equipment, or other methods the Engineer approves. See attached drawing for details of backfill placement and drainage.

Waste all removed materials, not used for purposes the Contract or Engineer specifies or permits, off the right-of-way at no expense to the Department.

4.0 MEASUREMENT.

4.1 Removing Pavement. The Department will measure the quantity in square yards. The Department will consider the pavement to include existing pavement, existing asphalt patching, and existing DGA base.

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4.2 Roadway Excavation. The Department will measure the quantity in cubic yards.

4.3 Backfilling Undercut. The Department will measure the quantity in cubic yards. The Department will not measure coarse aggregate for payment and will consider it incidental to this item of work.

4.4 Perforated Pipe. The Department will measure the quantity in linear feet.

4.5 Non-Perforated Pipe. The Department will measure the quantity in linear feet.

4.6 Geotextile Fabric, Type III. The Department will measure the quantity in square yards.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

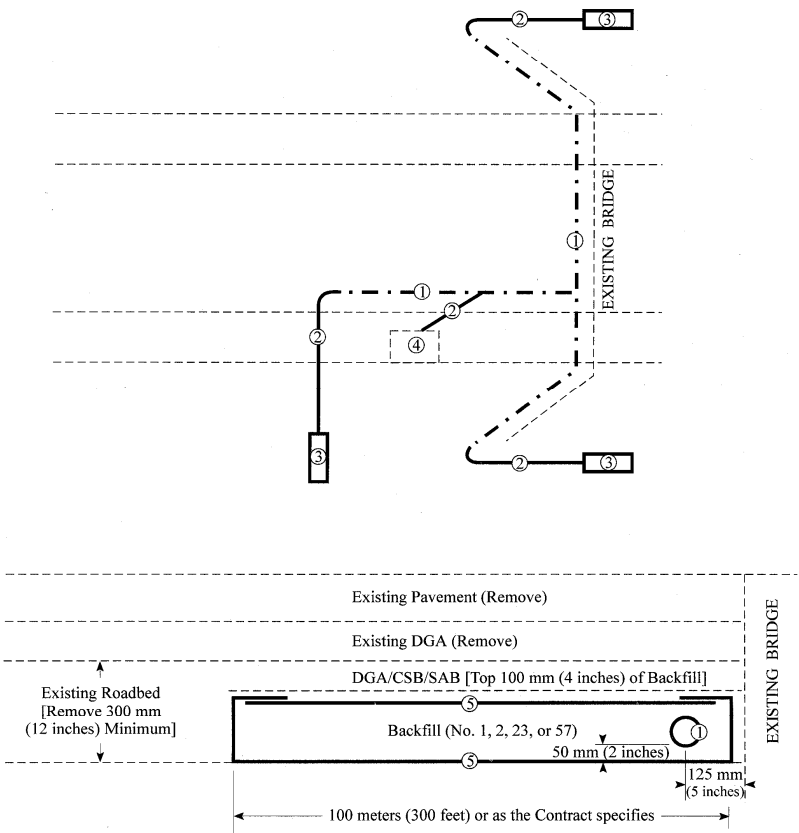
<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
02091	Removing Pavement	Square Yard
01000	Perforated Pipe - 4 inches	Linear Foot
01010	Non-Perforated Pipe, 4 inches	Linear Foot
02235	Backfilling Undercut	Cubic Yard
02598	Fabric - Geotextile Type III	Square Yard

The Department will consider payment as full compensation for all work required in this note.

June 15, 2012

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BRIDGE END DRAINAGE AND STABILIZATION
(DETAILS)



NOTES

Contrary to Section 705 of the Standard Specifications, use only coarse aggregate for trench backfill.

Slope all pipe to drain to the outside. Provide a 1:24 (1/2":1') or greater slope for the outlet pipe.

The Department may require additional transverse drains within the stabilization area.

LEGEND

- ① 100-mm (4-inch) Perforated Pipe
- ② 100-mm (4-inch) Non-perforated Pipe
- ③ Perforated Pipe Headwall
- ④ Existing Box Inlet
- ⑤ Geotextile Fabric, Type III

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SPECIAL NOTE FOR DRILLED SHAFTS

1.0 DESCRIPTION. Furnish all equipment, materials and labor necessary for constructing reinforced concrete drilled shafts in cylindrically excavated holes according to the details shown on the plans or as the Engineer directs. Construct the shaft to the lines and dimensions shown on the plans, or as the Engineer directs. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction, current edition.

2.0 MATERIALS.

2.1 Concrete. Use Class A Modified concrete unless otherwise shown on the plans. The slump at the time of placement shall be 6.5 to 9.5 inches, the coarse aggregate shall be size 67, 68, 78, 8 or 9M, and the water/cementitious material ratio shall not exceed 0.45. Include water reducing and retarding admixtures. Type F high range water reducers used in combination with retarding admixtures or Type G high range water reducers fully meeting trial batch requirements are permitted and Class F fly ash is permitted in conformance with Section 601. Design the mix such that the concrete slump exceeds 4 inches at 4 hours after batching. If the estimated concrete transport, plus time to complete placement, exceeds 4 hours, design the concrete to have a slump that exceeds 4 inches or more for the greater time after batching and demonstrate that the slump requirement can be achieved after the extended time period using a trial batch.

Perform trial batches prior to beginning drilled shaft construction in order to demonstrate the adequacy of the proposed concrete mix. Demonstrate that the mix to be used will meet the requirements for temperature, slump, air content, water/cementitious material ratio, and compressive strength. Use the ingredients, proportions and equipment (including batching, mixing, and delivery) to be used on the project. Make at least 2 independent consecutive trial batches of 3 cubic yards each using the same mix proportions and meeting all specification requirements for mix design approval. Submit a report containing these results for slump, air content, water/cement ratio, temperature, and compressive strength and mix proportions for each trial batch to the Engineer for review and approval. Failure to demonstrate the adequacy of the concrete mix, methods, or equipment to the Engineer is cause for the Engineer to require appropriate alterations in concrete mix, equipment, and/or method by the Contractor to eliminate unsatisfactory results. Perform additional trial batches required to demonstrate the adequacy of the concrete mix, method, or equipment.

2.2 Steel Reinforcement. Provide Grade 60 deformed bars conforming to Section 811 of the Standard Specifications. Rail steel is permitted for straight bars only. Place according to Section 602 of the Standard Specifications, this Special Note, and the plans. Use non-corrosive centering devices and feet to maintain the specified reinforcement clearances.

2.3 Casings. Provide casing meeting the requirements of ASTM A 252 Grade 2 or better unless otherwise specified. Ensure casing is smooth, clean, watertight, true and straight, and of ample strength to withstand handling, installation, and extraction stresses and the pressure of both concrete and the surrounding earth materials. Ensure the outside diameter of casing is not less than the specified diameter of shaft.

Use only continuous casings. Cut off the casing at the prescribed elevation and trim to within tolerances prior to acceptance. Extend casing into bedrock a sufficient distance to stabilize the shaft excavation against collapse, excessive deformation, and/or flow of water if required and/or shown on the plans.

Install from the work platform continuous casing meeting the design thickness requirements, but not less than 3/8 inch, to the elevations shown on the plans. When drilled

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shafts are located in open water areas, extend casings above the water elevation to the plan tip elevation to protect the shaft concrete from water action during concrete placement and curing. All casing is permanent unless temporary casing is specified in the contract drawings or documents. Permanent casing is incidental to the applicable drilled shaft unit bid price unless noted otherwise in the contract. Temporary casing may be required for drilled shafts not socketed into bedrock. If temporary surface casings are used, extend each casing up to the work platform. Remove all temporary surface casing prior to final acceptance unless otherwise permitted by the Central Office Construction Engineer.

Ensure casing splices have full penetration butt welds conforming to the current edition of AWS D1.1 with no exterior or interior splice plates and produce true and straight casing.

2.4 Slurry. When slurry is to be used for installation of the Drilled Shaft, submit a detailed plan for its use and disposal. The plan should include, but not be limited to the following:

- 1) Material properties
- 2) Mixing requirements and procedures
- 3) Testing requirements
- 4) Placement procedures
- 5) Disposal techniques

Obtain the Central Office Division of Construction's approval for the slurry use and disposal plan before installing drilled shafts.

2.5 Tremies. Provide tremies of sufficient length, weight, and diameter to discharge concrete at the shaft base elevation. Ensure the tremie diameter is least 6 times the maximum size coarse aggregate to be used in the concrete mix and no less than 10 inches. Provide adequate wall thickness to prevent crimping or sharp bends that restrict concrete placement. Support tremies used for depositing concrete in a dry drilled shaft excavation so that the free fall of the concrete does not cause the shaft excavation to cave or slough. Maintain a clean and smooth tremie surface to permit both flow of concrete and unimpeded withdrawal during concrete placement. Do not allow any aluminum parts to contact the concrete. Construct tremies used to deposit concrete for wet excavations so that they are watertight and will readily discharge concrete.

2.6 Concrete Pumps. Provide pump lines with a minimum diameter of 5 inches and watertight joints.

2.7 Drop Chutes. Do not use aluminum drop chutes.

3.0 CONSTRUCTION.

3.1 Preconstruction.

3.1.1 Prequalification. The Department will require prequalification by the Division of Construction Procurement before accepting a bid for the construction of Drilled Shafts.

3.1.2 Pre-Bid Inspection. Inspect both the project site and all subsurface information, including any soil or rock samples, prior to submitting a bid. Contact the Geotechnical Branch (502-564-2374) to schedule a viewing of the subsurface information. Failure to inspect the project site and view the

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subsurface information will result in the forfeiture of the right to file a claim based on site conditions and may result in disqualification from the project.

3.1.3 Drilled Shaft Installation Plan. Upon request, the Department will review a Drilled Shaft Installation Plan. Submit the plan no later than 45 calendar days prior to constructing drilled shafts. Items covered in this plan should include, but not be limited to the following:

- 1) Name and experience record of jobsite drilled shaft superintendent and foremen in charge of drilled shaft operations for each shift.
- 2) List and size of proposed equipment including cranes, drills, augers, bailing buckets, final cleaning equipment, de-sanding equipment, slurry pumps, core sampling equipment, tremies or concrete pumps, casings, etc.
- 3) Details of overall construction operation sequence and the sequence of shaft construction in the bents or groups.
- 4) Details of shaft excavation methods including methods to over-ream or roughen shaft walls, if necessary.
- 5) Details of slurry when the use of slurry is anticipated. Include methods to mix, circulate, and de-sand the proposed slurry. Provide details of proposed testing, test methods, sampling methods, and test equipment.
- 6) Details of proposed methods to clean shaft and inside of casing after initial excavation.
- 7) Details of reinforcement handling, lifting, and placement including support and method to center in shaft. Also include rebar cage support during concrete placement and temporary casing removal.
- 8) Details of concrete placement including procedures for concrete tremie or pump. Include initial placement, raising during placement, and overfilling of the shaft to expel contaminated concrete.
- 9) Required submittals including shop drawings and concrete design mixes.
- 10) Other information shown in the plans or requested by the Engineer.
- 11) Special considerations for wet construction.
- 12) Details of environmental control procedures to protect the environment from discharge of excavation spoil, slurry (natural and mineral), and concrete over-pour.

The Division of Construction will review the submitted procedure and provide comments and recommendations. The Contractor is responsible for satisfactory construction and ultimate performance of the Drilled Shaft.

3.2 General Construction. Construct drilled shafts as indicated in the plans or described in this Special Note by either the dry or wet method. When the plans describe a particular method of construction, use this method unless the Engineer permits otherwise. When the plans do not describe a particular method, propose a method on the basis of its suitability to the site conditions. Approval of this proposed method is contingent upon the satisfactory results of the technique shaft.

The construction of the first drilled shaft or technique shaft will be used to determine if the methods and equipment used by the contractor are sufficient to produce a completed shaft meeting the requirements of the plans and specifications. Ability to control dimensions and alignment of excavations within tolerances; to seal the casing into impervious materials; to prevent caving or deterioration of subsurface materials by the use of slurry or other means; to

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properly clean the completed shaft excavation; to construct excavations in open water areas when required by the plans; to establish methods for belling or over-reaming when required by the plans; to determine the elevation of ground water; to satisfactorily handle, lift, place, and support the reinforcement cage; to satisfactorily place concrete meeting the specifications within the prescribed time frame; and to satisfactorily execute any other necessary construction operations will be evaluated during construction of the first shaft(s). Revise the methods and equipment as necessary at any time during the construction of the first shaft when unable to satisfactorily carry out any of the necessary operations described above or unable to control the dimensions and alignment of the shaft excavation within tolerances. Accurately locate technique so they may be used in the finished structure unless directed otherwise in the contract document or by the Engineer.

If at any time the Contractor fails to satisfactorily demonstrate, to the satisfaction of the Engineer, the adequacy of methods or equipment and alterations are required, additional technique shafts will be required at no additional cost to the Department and with no extension of contract time. Additional technique shafts shall be located as near as possible to the proposed production shafts but in a location as not to interfere with other construction activities. Once approval has been given to construct production shafts, no changes will be permitted in the methods or equipment used to construct the satisfactory shaft without written approval of the Engineer.

Do not make a claim against the Department for costs of construction delays, or any materials, labor, or equipment that may be necessary due to the Contractor's failure to furnish drilled shafts of a length sufficient to obtain the required bearing values, or for variations in length due to subsurface conditions that may be encountered. Soundings, boring logs, soil profiles, or other subsurface data included in the Contract documents are used by the Department for design and making preliminary estimates of quantities and should be used only at the risk of the Contractor for determining equipment, materials, or labor necessary for drilling shafts as required by the contract.

When necessary, set temporary removable surface casing. Use surface casing of sufficient length to prevent caving of the surface soils and to aid in maintaining shaft position and alignment. Pre-drilling with slurry and/or over-reaming to the outside diameter of the casing may be required to install the surface casing at some sites.

Provide equipment capable of constructing shafts to the deepest shaft depth shown in the plans plus 15 feet, 20 percent greater than the longest shaft (measured from the ground or water surface to the tip of the shaft), or 3 times the shaft diameter, whichever is greater. Blasting excavation methods are not permitted.

Use permanent casing unless otherwise noted in the Contract. Place casing as shown on the plans before beginning excavation. If full penetration cannot be attained, the Engineer may direct that excavation through the casing be accomplished and the casing advanced until reaching the plan tip elevation. In some cases, over-reaming to the outside diameter of the casing may be required before placing the casing. Cut off the casing at the prescribed elevation and leave the remainder of the casing in place. Do not use vibratory hammers for casing installation within 50 feet of shafts that have been completed less than 24 hours.

3.2.1 Dry Construction Method. Use the dry construction method only at sites where the ground water table and soil conditions (generally stiff to hard clays or rock above the water table) make it feasible to construct the shaft in a relatively dry excavation and where the sides and bottom of the shaft are stable and may be visually inspected by the Engineer prior to placing the concrete. The dry construction method consists of drilling the shaft excavation, removing accumulated seepage water and loose material from the excavation, and placing the shaft concrete in a relatively dry excavation.

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3.2.2 Wet Construction Method. Use the wet construction method at all sites where it is impractical to excavate by the dry method. The wet construction method consists of drilling the shaft excavation below the water table, keeping the shaft filled with water (including natural slurry formed during the drilling process) or slurry as defined in part 2.4 of this Special Note, desanding and cleaning the slurry as required, final cleaning of the excavation by means of a bailing bucket, air lift, submersible pump or other approved devices and placing the shaft concrete (with a tremie or concrete pump beginning at the shaft bottom) which displaces the water or slurry as concrete is placed.

Where drilled shafts are located in open water areas, construct the shafts by the wet method using casings extending from above water elevation to the plan casing tip elevation to protect the shaft concrete from water action during placement and curing. Install the casing in a manner that will produce a positive seal at the bottom of the casing.

3.3 Slurry. When the Contractor elects to use slurry, adjust construction operations so that the slurry is in contact with the bottom 5 feet of the shaft for less than 4 hours unless the Engineer approves otherwise. If the 4-hour limit is exceeded, over-ream the bottom 5 feet of shaft.

3.4 Cleaning. Over-reaming, cleaning, or wire brushing the sidewalls of the shaft excavation and permanent casings may be necessary to remove the depth of softening or to remove excessive slurry cake buildup as indicated by sidewall samples or other test methods employed by the Engineer. Over-ream around the perimeter of the excavation a minimum depth of 1/2 inch and maximum depth of 3 inches.

3.5 Subsurface Exploration. Take subsurface exploration borings when shown on the plans or as the Engineer directs to determine the character of the material that the shaft extends through and the material directly below the shaft excavation. Complete subsurface exploration borings prior to beginning excavation for any drilled shaft in a group. Unless directed otherwise, extend subsurface exploration borings a minimum depth of 3 shaft diameters but not less than 10 feet below the bottom of the anticipated tip of drilled shaft excavation as shown on the plans. For subsurface exploration borings where soil sampling is required use thin-wall tube samples and perform standard penetration tests according to the Department's current Geotechnical Manual. When shafts extend into bedrock, soil samples are not required unless otherwise specified. Perform rock core drilling according to the Department's Geotechnical Manual. When the Engineer directs, perform additional subsurface exploration borings prior to drilled shaft construction. Measure soil samples and/or rock cores and visually identify and describe them on the subsurface log according to the Department's current Geotechnical Manual. Subsurface exploration borings must be performed by contractors/consultants prequalified by the Department's Division of Professional Services for Geotechnical Drilling Services at the time that field work begins.

The Engineer or geotechnical branch representative may be on-site during the subsurface exploration process to evaluate the soil and/or rock core samples. The Engineer or geotechnical branch representative will determine the need to extend the borings to depths greater than the depths previously specified. Handle, label, identify, and store soil and/or rock samples according to the Department's current Geotechnical Manual and deliver them with the subsurface logs to the geotechnical branch's rock core lab in Frankfort within 24-hours of completing the borings, unless directed otherwise.

The Engineer will inspect the soil samples and/or cores and determine the final depth of required excavation (final drilled shaft tip elevation) based on evaluation of the material's suitability. The Engineer will establish the final tip elevations for shaft locations, other than

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those for which subsurface exploration borings have been performed, based on the results of the subsurface exploration. Within 15 calendar days after completion of the subsurface exploration borings, the Engineer will notify the contractor of the final tip elevations for shaft locations.

3.6 Excavations. The plans indicate the expected depths, the top of shaft elevations, and the estimated bottom of shaft elevations between which the drilled shaft are to be constructed. Drilled shafts may be extended deeper when the Engineer determines that the material encountered while drilling the shaft excavation is unsuitable and/or is not the same as anticipated in the design of the drilled shaft. Drilled shafts may be shortened when the Engineer determines the material encountered is better than that anticipated.

Begin drilled shaft excavation the excavation, excavation inspection, reinforcement placement, and concrete placement can be completed as one continuous operation. Do not construct new shafts within 24 hours adjacent to recently completed shafts if the center-to-center spacing is less than 3 shaft diameters.

Dispose of excavated material removed from the shaft according to the Standard Specifications or the contract documents.

Do not allow workmen to enter the shaft excavation for any reason unless both a suitable casing has been installed and adequate safety equipment and procedures have been provided to the workmen entering the excavation. Recommended Procedures for the Entry of Drilled Shaft Foundation Excavations, prepared by ADSC: The International Association of Foundation Drilling provides guideline recommendations for down-hole entry of drilled excavations.

3.7 Obstructions. Remove subsurface obstructions at drilled shaft locations. Such obstructions may include man-made materials such as old concrete foundations or natural materials such as boulders. Blasting is not permitted.

3.8 Inspections of Excavations. Provide equipment for checking the dimensions and alignment of each shaft excavation. Determine the dimensions and alignment of the shaft excavation under the observation and direction of the Engineer. Provide equipment necessary to verify shaft cleanliness for the method of inspection selected by the Engineer.

Measure final shaft depths with a weighted tape or other approved methods after final cleaning. Ensure the base of each shaft has less than ½ inch of sediment at the time of concrete placement. For dry excavations, do not allow the depth of water to exceed 3 inches for tremie or pump methods of concrete placement. Verify shaft cleanliness to the Engineer using direct visual inspection or other method the Engineers determines acceptable. Video camera or underwater inspection procedures may be used if specified in the plans. Inspect the side surfaces of rock sockets to ensure they are rough and of such condition to ensure bond between the shaft concrete and the rock. Calipers, bent rods, or other devices may be used to inspect the diameter and roughness of rock sockets. When the Engineer directs, mechanically roughen surfaces found to be smooth.

3.9 Reinforcing Steel Cage Fabrication and Placement. Assemble the reinforcing steel cage, consisting of longitudinal bars, ties, spirals, cage stiffener bars, spacers, centering devices, and other necessary appurtenances and place as a prefabricated unit immediately after the shaft excavation is inspected and accepted, and just prior to concrete placement.

Tie the reinforcing steel with 100 percent double-wire ties and provide support so that it will remain within allowable tolerances for position. Locate splices as shown on the plans. Splice no more than 50 percent of the longitudinal reinforcing within 2-lap splice lengths of any location or within 3 feet of the splice location if approved mechanical connectors are used. All splices are to be in accordance with plan details. Use bands, temporary cross ties,

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etc. as required to provide a reinforcement cage of sufficient rigidity to prevent racking, permanent deformations, etc. during installation.

Use concrete centering devices or other approved non-corrosive centering devices at sufficient intervals along the length of the reinforcement cage to ensure concentric spacing for the entire cage length. As a minimum, provide a set of non-corrosive centering devices at intervals not exceeding 5 feet throughout the length of the shaft. When the size of the longitudinal reinforcement exceeds one inch in diameter the minimum spacing may be increased to 10 feet. As a minimum, provide a set of centering devices within 2 feet of the top and 2 feet of the bottom of the shaft. In addition provide one set of centering devices 2 feet above and 2 feet below each change in shaft diameter. Provide feet (bottom supports) at the bottom of the shaft on vertical bars. As a minimum, provide non-corrosive centering devices at 60 degree intervals around the circumference of the shaft to maintain the required reinforcement clearances. Ensure the centering devices maintain the specified annular clearance between the outside of the reinforcing cage and the side of the excavated hole or casing.

Concrete centering devices and feet will be constructed of concrete equal in quality and durability to the concrete specified for the shaft. Use epoxy coated centering devices fabricated from reinforcing steel. Use feet (bottom supports) of adequate size and number to assure the rebar cage is the proper distance above the bottom as determined by part 3.11 3) of this Special Note. The feet are not intended to support the weight of the cage. In the event that the shaft has been excavated below the anticipated tip elevation, extend the reinforcing cage at the tip (low) end by lap splices, mechanical connectors, or welded splices conforming to the Standard Specifications. In this instance, splices need not be staggered and 100 percent of the reinforcing bars may be spliced at a given location. The bottom 12 inches of the shaft may not be reinforced when below plan tip elevation.

During concrete placement, support the reinforcing cage at or near the top of shaft such that the concrete feet are positioned approximately one inch above the bottom of shaft excavation. Not sooner than 24 hours after the completion of concrete placement, remove temporary supports. Provide the needed equipment, including extra cranes if necessary, to provide this cage support.

Prior to placing the reinforcement cage, demonstrate to the satisfaction of the Engineer that the fabrication and handling methods to be used will result in a reinforcing cage placed in the proper position, with the proper clearances, and without permanent bending, squashing, or racking of the reinforcement cage. During this demonstration bring the cage to an upright position, lower into a shaft excavation, and support as if for concrete placement.

Check the elevation of the top of the reinforcing cage before and after the concrete is placed. If the reinforcing cage is not maintained within the specified tolerances, correct to the satisfaction of the Engineer. Do not construct additional shafts until the contractor has modified his reinforcing cage support to obtain the required tolerances.

3.10 Concrete Placement. Place concrete according to the applicable portions of the Standard Specifications and with the requirements set forth herein. Do not apply the provisions of the Special Note 6U for Structural Mass Concrete.

Place concrete as soon as practical after reinforcing steel placement but no later than 4 hours after completion of the shaft excavation. Place concrete continuously from the bottom to above the top elevation of the shaft. For shafts that extend above ground or water surface, place concrete continuously after the shaft is full until good quality concrete is evident at the top of the shaft. Form any portion of the shaft above ground with a removable form or other approved method to the dimensions shown on the plans.

For shafts constructed in the wet with the top of the shaft below the water surface and below top of casing, place concrete to approximately one shaft diameter but no less than 2 feet above the top of shaft elevation. Remove contaminated concrete and deleterious material, as

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determined by the Engineer, accumulated above the top of shaft elevation immediately after completing concrete placement. Deleterious material and contaminated concrete may be airlifted under a head of water or slurry provided that the head is maintained at or near the exterior water surface elevation. Carefully remove any concrete remaining above plan top of shaft after curing and excess casing removal.

Place concrete either by free fall, through a tremie, or concrete pump. Use the free fall placement method in dry holes only. The maximum height of free fall placement is 20 feet. Do not allow concrete placed by free fall to contact either the reinforcing cage or hole sidewall. Drop chutes may be used to direct concrete to the base during free fall placement.

Place concrete in the shaft in one continuous operation. Maintain a minimum slump of 4 inches or more throughout the placement for 4 hours after batching. Adjust approved admixtures in the concrete mix for the conditions encountered on the job so that the concrete remains in a workable plastic state throughout the placement. Perform slump loss tests to demonstrate that the concrete will maintain a 4-inch or greater slump for a period of time equal to the estimated transport plus the 2-hour placement time, but not less than 4 hours.

When the Engineer determines the concrete placement methods and/or equipment during construction of any technique and/or production shafts to be inadequate, make appropriate alterations to eliminate unsatisfactory results.

Drilled shafts not meeting the concrete placement requirements of this Special Note or contract plans are unacceptable. Correct all unacceptable completed shafts to the satisfaction of the Engineer.

3.10.1 Tremie Placement. Tremies may be used for concrete placement in either wet or dry holes. Extend the tremie to the shaft base elevation before starting underwater placement. Valves, bottom plates, or plugs may be used only if concrete discharge can begin approximately 2 inches above the excavation bottom. Remove plugs from the excavation unless otherwise approved by the Engineer. Maintain tremie discharge at or near the bottom of excavation as long as practical during concrete placement. Immerse tremie discharge end as deep as practical in the concrete but not less than 10 feet.

If at any time during the concrete pour the tremie line orifice is removed from the fluid concrete column and discharges concrete above the rising concrete surface, the entire drilled shaft is considered defective. In such case, remove the reinforcing cage and concrete, complete any necessary sidewall cleaning or over-reaming as directed by the Engineer, and repour the shaft.

3.10.2 Pumped Concrete. Concrete pumps and lines may be used for concrete placement in either wet or dry excavations. Do not begin concrete placement until the pump line discharge orifice is at the shaft base elevation.

For wet excavations, use a plug or similar device to separate the concrete from the fluid in the hole until pumping begins. Remove the plug unless otherwise approved by the engineer.

Ensure the discharge orifice remains at least 10 feet below the surface of the fluid concrete. When lifting the pump line during concrete placement, reduce the line pressure until the orifice has been repositioned at a higher level in the excavation.

If at any time during the concrete pour the pump line orifice is removed from the fluid concrete column and discharges concrete above the rising concrete level, the Department will consider the shaft defective. In such case, remove the reinforcing cage and concrete, complete any necessary sidewall cleaning or over-reaming as the Engineer directs, and repour the shaft.

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3.10.3 Drop Chutes. Drop chutes may be used to direct placement of free fall concrete in excavations where the maximum depth of water does not exceed one inch. Do not use the free fall method of placement in wet excavations. Concrete may be placed through either a hopper at the top of the tube or side openings as the drop chute is retrieved during concrete placement. Reduce the height of free fall and/or reduce the rate of concrete flow into the excavation if the concrete placement causes the shaft excavation to cave or slough, or if the concrete strikes the reinforcing cage or sidewall. When the Engineer determines free fall placement cannot be accomplished satisfactorily, use either tremie or pumping to accomplish the pour.

3.11 Construction Tolerances. The following construction tolerances apply to drilled shafts unless otherwise stated in the contract document:

- 1) Construct drilled shaft within 3 inches of plan position in the horizontal plane at the top of the shaft.
- 2) Do not vary the vertical alignment of a shaft excavation from the plan alignment by more than 1/4 inch per foot of depth or 6 inches total.
- 3) Maintain the top of the reinforcing steel cage no more than 6 inches above and no more than 3 inches below plan position.
- 4) All casing diameters shown on the plans refer to O.D. (outside diameter) dimensions. The casing dimensions are subject to American Pipe Institute tolerances applicable to regular steel pipe. A casing larger in diameter than shown in the plans may be used, at no additional cost, with prior approval by the Department.
- 5) Maintain the top of shaft concrete within ± 3 inches from the plan top of shaft elevation, measured after excess shaft concrete has been removed.
- 6) Design excavation equipment and methods so that the completed shaft excavation will have a planar bottom. Maintain the cutting edges of excavation equipment normal to the vertical axis of the equipment within a tolerance of $\pm 3/8$ inch per foot of diameter. The tip elevation of the shaft has a tolerance of ± 6 inches from final shaft tip elevation unless otherwise specified in the plans.

Drilled shaft excavations and completed shafts not constructed within the required tolerances are unacceptable. Correct all unacceptable shaft excavations and completed shafts to the satisfaction of the Engineer. When a shaft excavation is completed with unacceptable tolerances, present corrective measures designed by a registered Professional Engineer for approval.

4.0 MEASUREMENT.

4.1 Drilled Shafts. The Department will not measure for payment any trial batches required to demonstrate the adequacy of the concrete mix, method, or equipment; concrete required to fill an oversized casing or oversized excavation; obstruction removal; over-reaming or sidewall cleaning; inspection work or inspection equipment; materials or work necessary, including engineering analyses and redesign, to alter unacceptable work methods or to complete corrections for unacceptable work; and will consider them incidental to the Drilled Shaft. Unless noted otherwise in the contract documents, casing is incidental to the drilled shaft.

4.1.1 Drilled Shaft, Common. The Department will measure the length, in linear feet, of drilled shaft above the top of rock elevation shown on the plans. The

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Department will consider this quantity Drilled Shaft, Common regardless of the character of material actually encountered.

4.1.2 Drilled Shafts, Solid Rock. The Department will measure the length, in linear feet, of drilled shaft below the top of rock elevation shown on plans. The Department will consider this quantity Drilled Shafts, Solid Rock regardless of the character of material actually encountered during excavation.

4.2 Technique Shaft. The Department will pay for technique shaft at the contract unit price per each as detailed on the plans or as directed by the Engineer. This will constitute full compensation for all costs incurred during installation as described herein for ‘Drilled Shaft’ or in the contract documents. No additional compensation beyond the number of technique shafts allowed for in the plans will be permitted for additional technique shafts required because of failure to demonstrate adequacy of methods.

4.3 Rock Coring and Rock Sounding. The Department will measure Rock Sounding and Rock Coring shown on the plans, as specified in part 3.5 of this Special Note, and as the Engineer directs, in linear feet to the nearest 0.1-foot. If soil samples are specified in the contract documents they will be incidental to the unit price bid for Rock Sounding. The Department will not measure or pay for subsurface exploration performed deeper than the elevations indicated on the plans and/or in this Special Note, unless directed by the Engineer, and will consider it incidental to these items of work. Additionally, the Department will consider all mobilization, equipment, labor, incidental items, and operations necessary to complete the boring operations incidental to these items of work.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
----	Drilled Shaft, Diameter*, Common	Linear Foot
----	Drilled Shaft, Diameter*, Solid Rock	Linear Foot
----	Technique Shaft	Each
20745ED	Rock Sounding	Linear Foot
20746ED	Rock Coring	Linear Foot

** See Plan Sheets for sizes of shafts.*

The Department will consider payment as full compensation for all work required in this note.

June 15, 2012

SPECIAL NOTE FOR ROCK BLASTING

This Special Note will apply when indicated on the plans or in the proposal. Section references herein are to the Department's Current Standard Specifications for Road and Bridge Construction.

1.0 DESCRIPTION. This work consists of fracturing rock and constructing stable final rock cut faces using presplit blasting and production blasting techniques.

2.0 MATERIALS. Deliver, store, and use explosives according to the manufacturer's recommendations and applicable laws. Do not use explosives outside their recommended use date. Verify date of manufacture and provide copies of the technical data sheets (TDS) and material safety data sheets (MSDS) to the Engineer. Explosives and initiating devices include, but are not necessarily limited to, dynamite and other high explosives, slurries, water gels, emulsions, blasting agents, initiating explosives, detonators, blasting caps, and detonating cord.

3.0 CONSTRUCTION. Furnish copies or other proof of all-applicable permits and licenses. Comply with Federal, State, and local regulations on the purchase, transportation, storage, and use of explosive material. Regulations include but are not limited to the following:

- 1) KRS 351.310 through 351.9901.
- 2) 805 KAR 4:005 through 4:165
- 3) Applicable rules and regulations issued by the Office of Mine Safety and Licensing.
- 4) Safety and health. OSHA, 29 CFR Part 1926, Subpart U.
- 5) Storage, security, and accountability. Bureau of Alcohol, Tobacco, and Firearms (BATF), 27 CFR Part 181.
- 6) Shipment. DOT, 49 CFR Parts 171-179, 390-397.

3.1 Blaster-in-Charge. Designate in writing a blaster-in-charge and any proposed alternates for the position. Submit documentation showing the blaster-in-charge, and alternates, have a valid Kentucky blaster's license. Ensure the blaster-in-charge or approved alternate is present at all times during blasting operations.

3.2 Blasting Plans. Blasting plans and reports are for quality control and record keeping purposes. Blasting reports are to be signed by the blaster-in-charge or the alternate blaster-in-charge. The general review and acceptance of blasting plans does not relieve the Contractor of the responsibility whatsoever for conformance to regulations or for obtaining the required results. All blasting plans shall be submitted to the Engineer. The Engineer will be responsible for submitting the plan to the Central Office Division of Construction and the Division of Mine Reclamation and Enforcement, Explosives and Blasting Branch at the following address: 2 Hudson Hollow, Frankfort, Kentucky, 40601.

A) General Blasting Plan. Submit a general blasting plan for acceptance at least 15 working days before drilling operations begin. Include, as a minimum, the following safety and procedural details:

- 1) Working procedures and safety precautions for storing, transporting, handling, detonating explosives. Include direction on pre and post blast audible procedures, methods of addressing misfires, and methods of addressing inclement weather, including lightning.
- 2) Proposed product selection for both dry and wet holes. Furnish Manufacturer's TDS and MSDS for all explosives, primers, initiators, and other blasting devices.
- 3) Proposed initiation and delay methods.
- 4) Proposed format for providing all the required information for the site specific blasting shot reports.

B) Preblast Meeting. Prior to drilling operations, conduct a preblast meeting to discuss safety and traffic control issues and any site specific conditions that will need to be addressed. Ensure, at a minimum, that the Engineer or lead inspector, Superintendent, blaster-in-charge, and all personnel involved in the blasting operation are present. Site specific conditions include blast techniques; communication procedures; contingency plans and equipment for dealing with errant blast material. The conditions of the General Blasting plan will be discussed at this meeting. Record all revisions and additions made to the blasting plan and obtain written concurrence by the blaster-in-charge. Provide a copy of the signed blast plan to the Engineer along with the sign in sheet from the preblast meeting.

3.3 Preblast Condition Survey and Vibration Monitoring and Control. Before blasting, arrange for a preblast condition survey of nearby buildings, structures, or utilities, within 500 feet of the blast or that could be at risk from blasting damage. Provide the Engineer a listing of all properties surveyed and any owners denying entry or failing to respond. Notify the Engineer and occupants of buildings at risk at least 24 hours before blasting.

Limit ground vibrations and airblast to levels that will not exceed limits of 805 KAR 4:005 through 4:165. More restrictive levels may be specified in the Contract.

Size all blast designs based on vibration, distance to nearest building or utility, blast site geometry, atmospheric conditions and other factors. Ground vibrations are to be controlled according to the blasting standards and scaled distance formulas in 805 KAR 4:020 or by the use of seismographs as allowed in 805 KAR 4:030. The Department will require seismographs at the nearest allowable location to the protected site when blasting occurs within 500 feet of buildings, structures, or utilities.

3.4 Blasting. Drill and blast at the designated slope lines according to the blasting plan. Perform presplitting to obtain smooth faces in the rock and shale formations. Perform the presplitting before blasting and excavating the interior portion of the specified cross section at any location. The Department may allow blasting for fall benches and haul roads prior to presplitting when blasting is a sufficient distance from the final slope and results are satisfactory to the Engineer. Use the types of explosives and blasting accessories necessary to obtain the required results.

Free blast holes of obstructions for their entire depth. Place charges without caving the blast hole walls. Stem the upper portion of all blast holes with dry sand or other granular material passing the 3/8-inch sieve. Dry drill cuttings are acceptable for stemming when blasts are more than 800 feet from the nearest dwelling.

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Stop traffic during blasting operations when blasting near any road and ensure traffic does not pass through the Danger Zone. The blaster-in-charge will define the Danger Zone prior to each blast. Ensure traffic is stopped outside the Danger Zone, and in no case within 800 feet of the blast location.

Following a blast, stop work in the entire blast area, and check for misfires before allowing worker to return to excavate the rock.

Remove or stabilize all cut face rock that is loose, hanging, or potentially dangerous. Leave minor irregularities or surface variations in place if they do not create a hazard. Drill the next lift only after the cleanup work and stabilization work is complete.

When blasting operations cause fracturing of the final rock face, repair or stabilize it in an approved manner at no cost to the Department.

Halt blasting operations in areas where any of the following occur:

- 1) Slopes are unstable;
- 2) Slopes exceed tolerances or overhangs are created;
- 3) Backslope damage occurs;
- 4) Safety of the public is jeopardized;
- 5) Property or natural features are endangered;
- 6) Fly rock is generated; or
- 7) Excessive ground or airblast vibrations occur in an area where damage to buildings, structures, or utilities is possible.
- 8) The Engineer determines that materials have become unsuitable for blasting

Blasting operations may continue at a reasonable distance from the problem area or in areas where the problems do not exist. Make the necessary modifications to the blasting operations and perform a test blast to demonstrate resolution of the problem.

A) Drill Logs. Maintain a layout drawing designating hole numbers with corresponding drill logs and provide a copy of this information to the blaster prior to loading the hole. Ensure the individual hole logs completed by the driller(s) show their name; date drilled; total depth drilled; and depths and descriptions of significant conditions encountered during drilling that may affect loading such as water, voids, changes in rock type.

B) Presplitting. Conduct presplitting operations in conformance with Subsection 204.03.04 of the Standard Specifications for Road and Bridge Construction.

3.5 Shot Report. Maintain all shot reports on site for review by the Department. Within one day after a blast, complete a shot report according to the record keeping requirements of 805 KAR 4:050. Include all results from airblast and seismograph monitoring.

3.6 Unacceptable Blasting. When unacceptable blasting occurs, the Department will halt all blasting operations. Blasting will not resume until the Department completes its investigation and all concerns are addressed. A blast is unacceptable when it results in fragmentation beyond the final rock face, fly rock, excessive vibration or airblast, overbreak, damage to the final rock face or overhang. Assume the cost for all resulting damages to private and public property and hold the Department harmless.

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When an errant blast or fly rock causes damage to or blocks a road or conveyance adjacent to the roadway, remove all debris from the roadway as quickly as practicable and perform any necessary repairs. Additionally, when specified in the Contract, the Department will apply a penalty.

Report all blasting accidents to the Division of Mine Reclamation and Enforcement, Explosives and Blasting Branch at 502-564-2340.

4.0 MEASUREMENT AND PAYMENT. The Department will not measure this work for payment and will consider all items contained in this note to be incidental to either Roadway Excavation or Embankment-in-Place, as applicable. However, if the Engineer directs in writing slope changes, then the Department will pay for the second presplitting operation as Extra Work.

The Department will measure for payment material lying outside the typical section due to seams, broken formations, or earth pockets, including any earth overburden removed with this material, only when the work is performed under authorized adjustments.

The Department will not measure for payment any extra material excavated because of the drill holes being offset outside the designated slope lines.

The Department will not measure for payment any material necessary to be removed due to the inefficient or faulty blasting practices.

July 1, 2022

SPECIAL NOTE FOR TURF REINFORCING MAT

1.0 DESCRIPTION. Install turf reinforcement mat at locations specified in the Contract or as the Engineer directs. Section references herein are to the Department’s Current Standard Specifications for Road and Bridge Construction.

2.0 MATERIALS.

2.1 Turf Reinforcement Mat (TRM). Use a Turf Reinforcement Mat defined as permanent rolled erosion control product composed of non-degradable synthetic fibers, filaments, nets, wire mesh and/or other elements, processed into a three-dimensional matrix of sufficient thickness and from the Department’s List of Approved Materials. Mats must be 100% UV stabilized materials. For TRMs containing degradable components, all physical property values must be obtained on the non-degradable portion of the matting exclusively. Ensure product labels clearly show the manufacturer or supplier name, style name, and roll number. Ensure labeling, shipment and storage follows ASTM D-4873. The Department will require manufacturer to provide TRMs that are machine constructed web of mechanically or melt bonded nondegradable fibers entangled to form a three dimensional matrix. The Department will require all long term performance property values in table below to be based on non degradable portion of the matting alone. Approved methods include polymer welding, thermal or polymer fusion, or placement of fibers between two high strength biaxially oriented nets mechanically bound by parallel stitching with polyolefin thread. Ensure that mats designated in the plans as Type 4 mats, are not to be manufactured from discontinuous or loosely held together by stitching or glued netting or composites. Type 4 mats shall be composed of geosynthetic matrix that exhibits a very high interlock and reinforcement capacities with both soil and root systems and with high tensile modulus. The Department will require manufacturer to use materials chemically and biologically inert to the natural soil environments conditions. Ensure the blanket is smolder resistant without the use of chemical additives. When stored, maintain the protective wrapping and elevate the mats off the ground to protect them from damage. The Department will not specify these materials for use in heavily acidic coal seam areas or other areas with soil problems that would severally limit vegetation growth.

2.2 Classifications

The basis for selection of the type of mat required will be based on the long term shear stress level of the mat of the channel in question or the degree of slope to protect and will be designated in the contract. The Type 4 mats are to be used at structural backfills protecting critical structures, utility cuts, areas where vehicles may be expected to traverse the mat, channels with large heavy drift, channels with high shear stresses, and where higher factors of safety, very steep slopes and/or durability concerns are needed as determined by project team and designer and will be specified in the plans by designer.

Properties	Type 1	Type 2	Type 3	Type 4
Maximum Slope (H:V)	1:1	1:1	0.5:1	0.5:1
Un-vegetated Shear	≥ 2.0 lbs/ft ² (≥ 96 Pa)	≥ 2.0 lb/ft2 (≥ 96 Pa)"	≥ 2.0 lb/ft2 (≥ 96 Pa)	≥ 2.0 lb/ft2 (≥ 96 Pa)

Stress ^{b, c, d} ASTM D6460				
Vegetated Shear Stress ^{c, d, e, f} ASTM D6460	≥ 6.0 lbs/ft ² (≥ 287 Pa)	≥ 8.0 lb/ft ² (≥ 383 Pa)	≥ 10.0 lb/ft ² (≥ 479 Pa)	≥ 12.0 lb/ft ² (≥ 575 Pa)
Seedling Emergence ^d ASTM D7322	≥ 250%	≥ 250%	≥ 250%	≥ 250%
MD Material Tensile Strength ^{d, f} ASTM D6818	≥ 150 lbs/ft (≥ 2.2 kN/m)	≥ 175 lbs/ft (≥ 2.6 kN/m)	≥ 200 lbs/ft (≥ 2.9 kN/m)	≥ 1,500 lbs/ft (≥ 21.9 kN/m)
TD Material Tensile Strength ^{d, f} ASTM D6818	≥ 150 lbs/ft (≥ 2.2 kN/m)	≥ 175 lbs/ft (≥ 2.6 kN/m)	≥ 200 lbs/ft (≥ 2.9 kN/m)	≥ 1,500 lbs/ft (≥ 21.9 kN/m)
Mass Per Unit Area ^d ASTM D6566	≥ 8.0 oz/yd ² (≥ 271 g/m ²))	≥ 8.0 oz/yd ² (≥ 271 g/m ²)	≥ 8.0 oz/yd ² (≥ 271 g/m ²)	≥ 8.0 oz/yd ² (≥ 271 g/m ²)
Material Thickness ^d ASTM D6525	≥ 0.25 in (≥ 6.35 mm)	≥ 0.25 in (≥ 6.35 mm)	≥ 0.25 in (≥ 6.35 mm)	≥ 0.25 in (≥ 6.35 mm)
UV Stability ^{c, e} ASTM D4355	≥ 80% @ 500 hrs	≥ 80% @ 500 hrs	≥ 80% @ 1,000 hrs	≥ 90% @ 1,000 hrs

- a. For Type 4 mats, property values tested per ASTM D6818 and D6525 are reported as minimum average roll values (MARVs). MARVs are calculated as the typical minus two standard deviations. Statistically, it yields a 97.7% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
- b. Required minimum shear stress TRM (un-vegetated) can sustain without physical damage or excess erosion (> 12.7 mm (0.5 in.) soil loss during successive, minimum 30 minute flow events in large scale testing.
- c. Acceptable large-scale testing protocol may include ASTM D6460, or other independent testing deemed acceptable by the engineer. Large-scale performance testing typically involves limited soil types and vegetative stands, therefore it is recommended that an appropriate factor of safety be used in design and product selection (see Guidance Document for further information).
- d. Typical values are calculated as the average value, it yields a 50% degree of confidence that any samples taken from quality assurance testing will exceed the value reported.
- e. Required minimum shear stress TRM (fully vegetated) can sustain without physical damage or excess erosion (> 12.7 mm (0.5 in.) soil loss during successive, minimum 30 minute flow events in large scale testing.
- f. For TRMs containing degradable components, property values must be obtained on the non-degradable portion of the matting alone.

NOTE: TRMs are typically used in hydraulic applications, such as high flow ditches and channels, steep slopes, stream banks, and shorelines, where erosive forcers may exceed the limits of natural, unreinforced vegetation or in areas where limited vegetation establishment is anticipated.

2.3 Quality Assurance Sampling, Testing, and Acceptance

- A) Performance Testing: The Department will require AASHTO’s NTPEP index testing. The Department will also require the manufacturer to perform internal MARV testing at a Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP) accredited laboratory for tensile strength, tensile elongation, mass per unit area, and thickness once every 24,000 yds of production or whatever rate is required to ensure

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97.7% confidence under ASTM D4439& 4354. The Department will require Full scale testing for slope and channel applications shear stress shall be done under ASTM D 6459, ASTM D 6460-07 procedures.

- B) Provide TRM listed on the Department's List of Approved Materials. Prior to inclusion on the LAM, the manufacturer of TRM must meet the physical and performance criteria as outlined in the specification and submit a Letter Certifying compliance of the product under the above ASTM testing procedures and including a copy of report from Full Scale Independent Hydraulics Facility that Fully Vegetated Shear Stress meets shear stress requirements tested under D6459 and D6460-07.
- C) Contractors will provide a Letter of Certification from Manufacturer stating the product name, manufacturer, and that the product MARV product unit testing results meets Department criteria. Provide Letters once per project and for each product.
- D) Acceptance shall be in accordance with ASTM D-4759 based on testing performed by a Geosynthetic Accreditation Institute – Laboratory Accreditation Program (GAI-LAP) accredited laboratory using Procedure A of ASTM D-4354.

Current mats meeting the above criteria are shown on the Department's List of Approved Materials. Mats that exceed the criteria for KYTC Types 1-4 are available. Contact an erosion control material supplier for more information.

2.4 Fasteners. When the mat manufacturer does not specify a specific fastener, use steel wire U-shaped staples with a minimum diameter of 0.09 inches (11 gauge), a minimum width of one inch and a minimum length of 12 inches. Use a heavier gauge when working in rocky or clay soils and longer lengths in sandy soils as directed by Engineer or Manufacturer's Representative. Provide staples with colored tops when requested by the Engineer.

3.0 CONSTRUCTION. Provide a Manufacturer's Representative on-site to oversee and approve the initial installation of the mat. When requested by the Engineer, provide a letter from the Manufacturer approving the installation. When there is a conflict between the Department's criteria and the Manufacturer's criteria, construct using the more restrictive. The Engineer and Manufacturer's Representative must approve all alternate installation methods prior to execution. Construct according to the Manufacturer's recommendations and the following as minimum installation technique:

3.1 Site Preparation. Smoothly grade areas to be treated with matting and compact. Remove large rocks, soil clods, vegetation, roots, and other sharp objects that could keep the mat from intimate contact with subgrade. Prepare seedbed by loosening the top 2 to 3 inch of soil.

3.2 Installation. Install mats according to Standard Drawing Sepias "Turf Mat Channel Installation" and "Turf Mat Slope Installation." Install mats at the specified elevation and alignment. Anchor the mats with staples with a minimum length of 12 inches. Use longer anchors for installations in sandy, loose, or wet soils as directed by the Engineer or Manufacturer's Representative. The mat should be in direct contact with the soil surface. Infill and overfill the mat with a minimum of ½" of soil as directed by the Manufacturer.

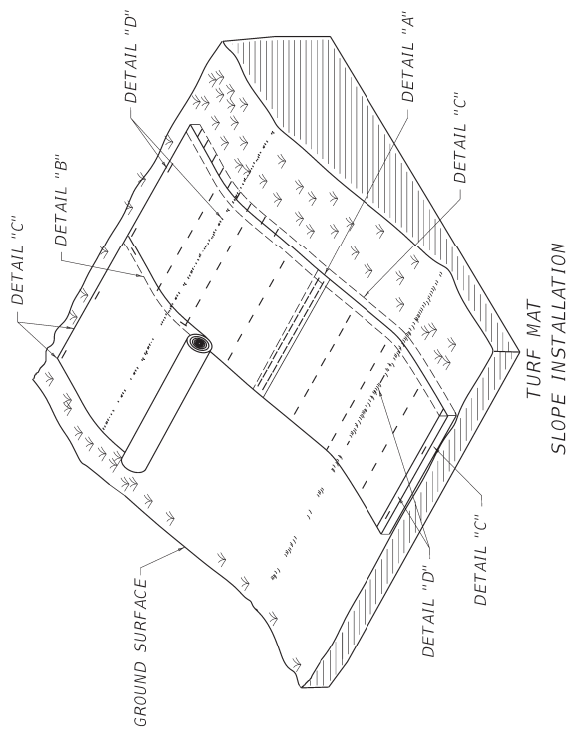
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4.0 MEASUREMENT. The Department will measure the quantity of Turf Reinforcement Mat by the square yard of surface covered. The Department will not measure preparation of the bed, providing a Manufacturer’s Representative, topsoil, or seeding for payment and will consider them incidental to the Turf Reinforcement Mat. The Department will not measure any reworking of slopes or channels for payment as it is considered corrective work and incidental to the Turf Reinforcement Mat. Seeding and protection will be an incidental item.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

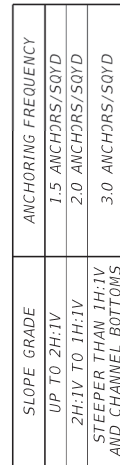
<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
23274EN11F	Turf Reinforcement Mat 1	Square Yard
23275EN11F	Turf Reinforcement Mat 2	Square Yard
23276EN11F	Turf Reinforcement Mat 3	Square Yard
23277EN11F	Turf Reinforcement Mat 4	Square Yard

June 29, 2023



1. CONSTRUCT A 6" X 6" ANCHOR TRENCH AT THE BEGINNING OF THE SLOPE. LINE THE ANCHOR TRENCH WITH TURF REINFORCING MAT LEAVING 12" ANCHOR TRENCH ON THE ANCHOR TRENCH. FASTEN THE MAT MATERIAL INTO THE ANCHOR TRENCH ON 12" CENTERS BACKFILL THE TRENCH WITH TOPSOIL AND COMPACT. COVER THE AREA WITH THE REMAINING 12" OF THE MAT'S TERMINAL END LEAVING 6" TO OVERLAP THE TURF REINFORCING MAT. SECURE THE 6" OVERLAP WITH STAPLES ON 12" CENTERS.
2. UNROLL THE MAT DOWN THE SLOPE AND PLACE IN DIRECT CONTACT WITH THE SOIL SURFACE. INSURE THAT THE SOIL SURFACE IS GRADED SMOOTHLY AND DOES NOT CONTAIN IRREGULARITIES.
3. SECURELY FASTEN THE MAT TO THE SOIL BY INSTALLING STAPLES AT A MINIMUM RATE OF 1.5 PER SQ. YD. ANCHORS SHALL BE SELECTED SO THAT THEY HAVE SUFFICIENT GROUND PENETRATION TO RESIST PULLOUT. INCREASE ANCHORING FREQUENCY FOR SITE CONDITIONS (LOOSE, SANDY, OR WET SOILS) AS DIRECTED BY THE ENGINEER AND MANUFACTURER'S REPRESENTATIVE.
4. OVERLAP EDGES OF MATS ACCORDING TO THE LONGITUDINAL AND TRANSVERSE OVERLAP DETAILS. STAPLE LONGITUDINAL OVERLAPS WITH 2 ROWS OF STAPLES STAGGERED AT 4". STAPLE TRANSVERSE OVERLAPS WITH 1 ROW OF STAPLES SPACED AT 12".
5. CONSTRUCT A 6" X 12" ANCHOR TRENCH AT THE TOE OF THE SLOPE FOLLOWING SIMILAR PROCEDURES DENOTED FOR THE TOP OF THE SLOPE ANCHOR TRENCH.
6. ENSURE THAT THE MAT IS IN DIRECT CONTACT WITH THE SOIL SURFACE WITH NO PROJECTIONS OR PROTRUSIONS.
7. INFILL AND OVERFILL THE MAT WITH A MINIMUM OF 1 1/2" TOPSOIL. APPLY SEEDING AND PROTECTION AS DIRECTED BY THE MANUFACTURER. USE SEED MIX TYPE 1 AS DEFINED IN SECTION 212.03.03. TOPSOIL IS THE SOIL PROFILE DEFINED TECHNICALLY AS "A" HORIZON BY THE SOIL SCIENCE SOCIETY OF AMERICA. USE LOOSE, FRIABLE TOPSOIL THAT IS FREE OF STONES 1" OR GREATER IN OVERALL DIMENSIONS. ADMIXTURE OF SUBSOIL, REFUSE, STUMPS, ROOTS, BRUSH, WEEDS AND OTHER MATERIALS THAT PREVENT THE FORMATION OF A SUITABLE SEED BED. DO NOT USE TOPSOIL FROM SITES HAVING JOHNSON GRASS, CANADA THISTLE, QUACK GRASS, NODDING THISTLE OR EXCESSIVE MOUNTS OF WEEDS OR THEIR RHIZOMES.

SUBMITTED W. T. Lujan 01-24-2023
DIVISION DIRECTOR DATE



1. CONSTRUCT A 6" X 6" ANCHOR TRENCH AT THE UPSTREAM END OF THE CHANNEL. LINE THE ANCHOR TRENCH WITH TURF REINFORCIG MAT LEAVING 12" EXTENDING PAST THE ANCHOR TRENCH. FASTEN THE MAT MATERIAL INTO THE ANCHOR TRENCH ON 12" CENTERS BACKFILL THE TRENCH WITH TOPSOIL AND COMPACT. COVER THE AREA WITH THE REMAINING 12" OF THE MAT'S TERMINAL END LEAVING 6" TO OVERLAP THE TURF REINFORCING MAT. SECURE THE 6" OVERLAP WITH STAPLES ON 12" CENTERS.
2. UNROLL THE MAT PARALLEL TO THE PRIMARY DIRECTION OF WATER FLOW AND PLACE IN DIRECT CONTACT WITH THE SOIL SURFACE. INSURE THAT THE SOIL SURFACE IS GRADED SMOOTHLY AND DOES NOT CONTAIN IRREGULARITIES.
3. EXCAVATE 6" X 6" CHECK SLOTS EVERY 25' ALONG THE LENGTH OF THE CHANNEL. LINE THE SIDE AND BOTTOM OF THE SLOT WITH THE MAT AND THEN PULL BACK OVER, FASTEN WITH STAPLES ON 12" CENTERS. FILL THE CHECK SLOT WITH TOPSOIL, COMPACT, AND CONTINUE UNROLLING MAT DOWN THE CHANNEL.
4. CONTINUE UNROLLING THE MAT DOWNSTREAM OVER THE COMPACTED SLOT TO THE NEXT CHECK SLOT OR TERMINAL ANCHOR TRENCH. IF MORE THAN ONE SECTION OF MAT, AS SHOWN IN THE TRANSVERSE OVERLAP DETAIL, IS USED OVERLAP UPSTREAM MATS OVER TOP OF THE DOWNSTREAM MAT 6" AND SECURE. IF MATS ARE PLACED PARALLEL TO EACH OTHER ALONG THE CHANNEL, PLACE CHANNEL SECTIONS FIRST, THEN OVERLAP SIDE SLOPE SECTIONS 3" OVER THE CHANNEL SECTIONS AS SHOWN IN THE LONGITUDINAL OVERLAP DETAIL, AND SECURE WITH STAPLES ON 12" CENTERS. PROCEED UP THE SIDE SLOPES IN THE SAME MANNER UNTIL THE TOP OF CHANNEL IS REACHED.
5. SECURE MATS WHILE UNROLLING ON SIDESLOPES AND CHANNEL BOTTOMS WITH STAPLES AT A FREQUENCY THE TABLE INDICATES. USE STAPLES HAVING SUFFICIENT GROUND PENETRATION TO RESIST PULLOUT. INCREASE ANCHORING FREQUENCY AS DIRECTED BY THE ENGINEER AND MANUFACTURER'S REPRESENTATIVE.
6. INFILL AND OVERFILL THE MAT WITH A MINIMUM OF 1/2" TOPSOIL. APPLY SEEDING AND PROTECTION AS DIRECTED BY THE MANUFACTURER. USE SEED MIX TYPE 1 AS DEFINED IN SECTION 21203.03. TOPSOIL IS THE SOIL PROFILE DEFINED TECHNICALLY AS "A" HORIZON BY THE SOIL SCIENCE SOCIETY OF AMERICA. USE LOOSE, FRIABLE TOPSOIL THAT IS FREE OF STONES 1" OR GREATER IN OVERALL DIMENSIONS, ADMIXTURE OF SUBSOIL, REFUSE, STUMPS, ROOTS, BRUSH, WEEDS AND OTHER MATERIALS THAT PREVENT THE FORMATION OF A SUITABLE SEED BED. DO NOT USE TOPSOIL FROM SITES HAVING JOHNSON GRASS, CANADA THISTLE, QUACK GRASS, NODDING THISTLE OR EXCESSIVE AMOUNTS OF WEEDS OR THEIR RHIZOMES.

ITEM NO.	COUNTY OF
SHEET NO.	

SPECIAL NOTE FOR BARCODE LABEL ON PERMANENT SIGNS

1.0 DESCRIPTION. Install barcode label on sheeting signs. Section references herein are to the Department’s Standard Specifications for Road and Bridge Construction, current edition.

2.0 MATERIALS. The Department will provide the Contractor with a 2 inch x 1 inch foil barcode label for each permanent sheeting sign. A unique number will be assigned to each barcode label.

The Contractor shall contact the Operations and Pavement Management Branch in the Division of Maintenance at (502) 564-4556 to obtain the barcode labels.

3.0 CONSTRUCTION. Apply foil barcode label in the lower right quadrant of the sign back. Signs where the bottom edge is not parallel to the ground, the lowest corner of the sign shall serve as the location to place the barcode label. The barcode label shall be placed no less than one-inch and no more than three inches from any edge of the sign. The barcode must be placed so that the sign post does not cover the barcode label.

Barcodes shall be applied in an indoor setting with a minimum air temperature of 50°F or higher. Prior to application of the barcode label, the back of the sign must be clean and free of dust, oil, etc. If the sign is not clean, an alcohol swab shall be used to clean the area. The area must be allowed to dry prior to placement of the barcode label.

Data for each sign shall include the barcode number, MUTCD reference number, sheeting manufacturer, sheeting type, manufacture date, color of primary reflective surface, installation date, latitude and longitude using the North American Datum of 1983 (NAD83) or the State Plane Coordinates using an x and y ordinate of the installed location.

Data should be provided electronically on the TC 71-229 Sign Details Information and TC 71-230 Sign Assembly Information forms. The Contractor may choose to present the data in a different format provided that the information submitted to the Department is equivalent to the information required on the Department TC forms. The forms must be submitted in electronic format regardless of which type of form is used. The Department will not accept PDF or handwritten forms. These completed forms must be submitted to the Department prior to final inspection of the signs. The Department will not issue formal acceptance for the project until the TC 71-229 and TC-230 electronic forms are completed for all signs and sign assemblies on the project.

4.0 MEASUREMENT. The Department will measure all work required for the installation of the barcode label and all work associated with completion and submission of the sign inventory data (TC 71-229 and TC 71-230).

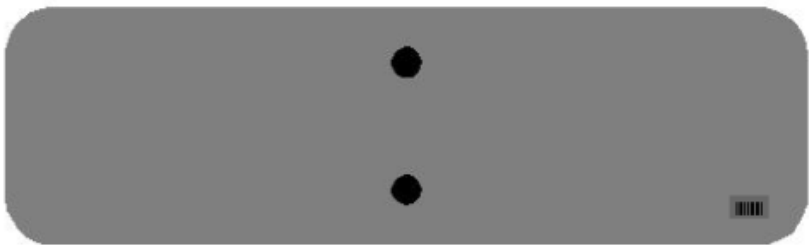
The installation of the permanent sign will be measured in accordance to Section 715.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

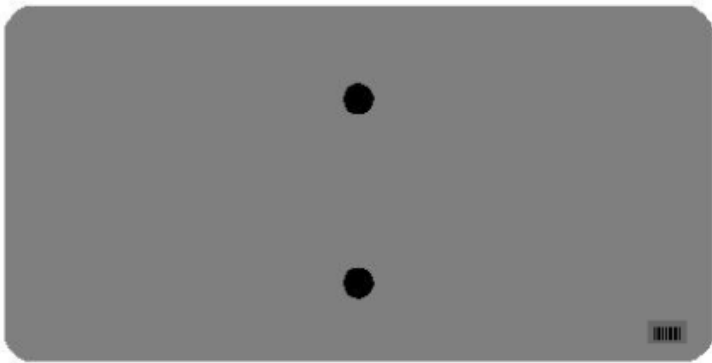
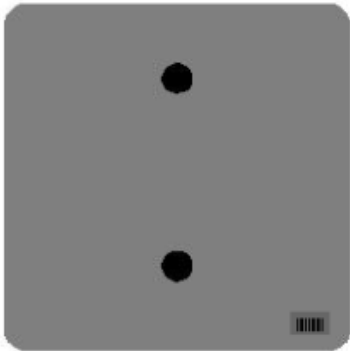
<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
24631EC	Barcode Sign Inventory	Each

The Department will not make payment for this item until all barcodes are installed and sign inventory is complete on every permanent sign installed on the project. The Department will make payment for installation of the permanent sign in accordance to Section 715. The Department will consider payment as full compensation for all work required under this special note.

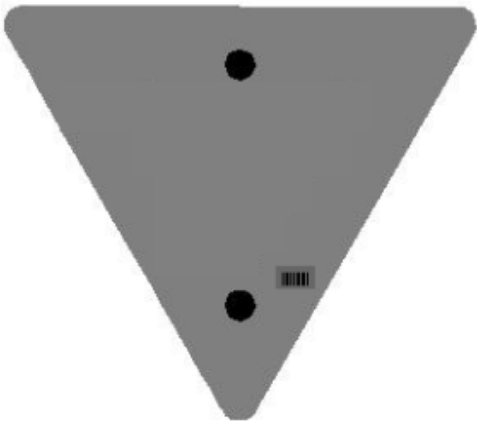
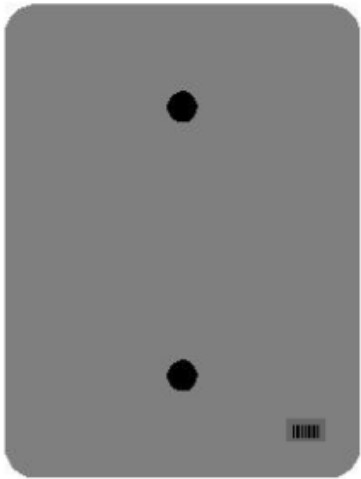
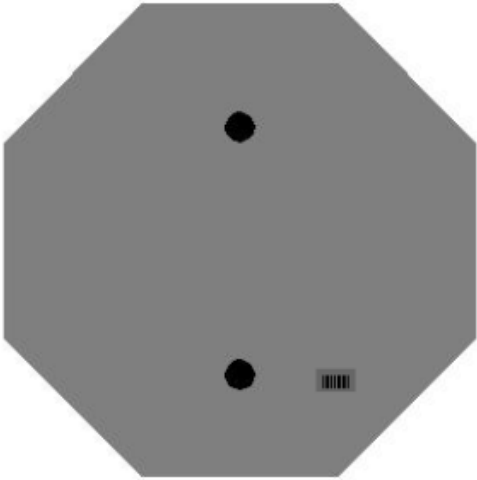
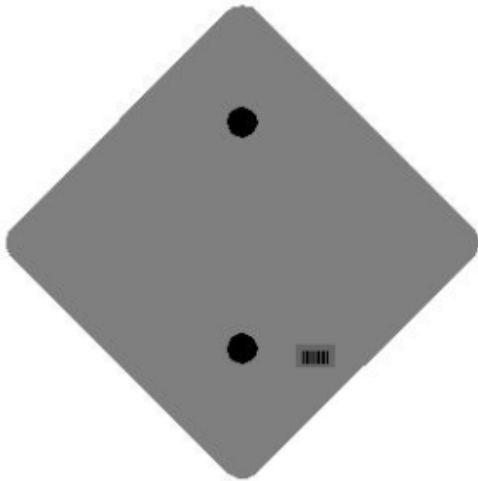
One Sign Post



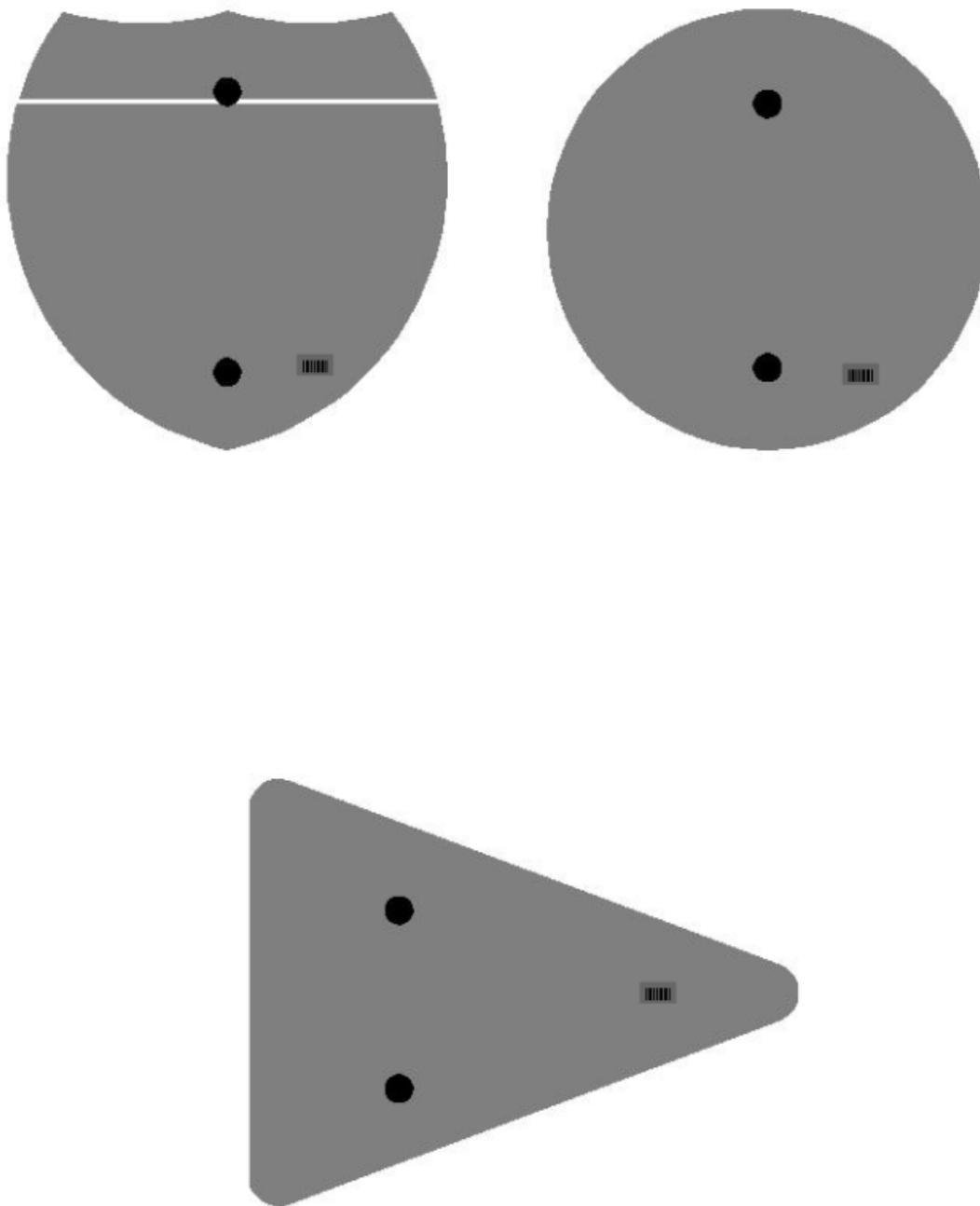
↑
2" Wide Post



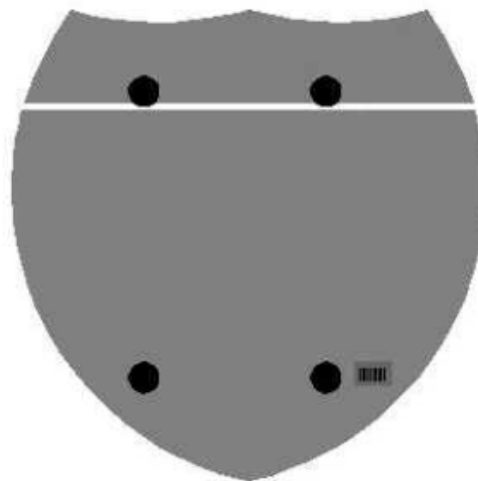
One Sign Post



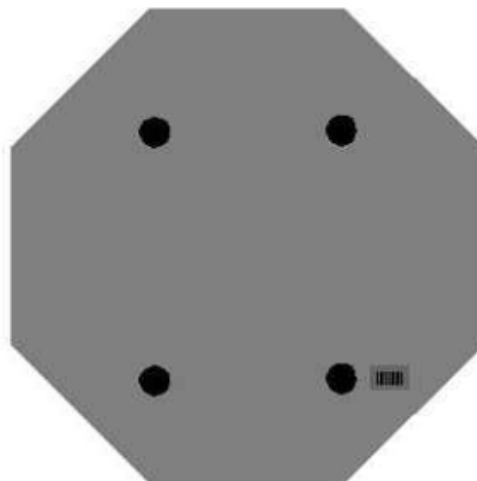
One Sign Post



Double Sign Post

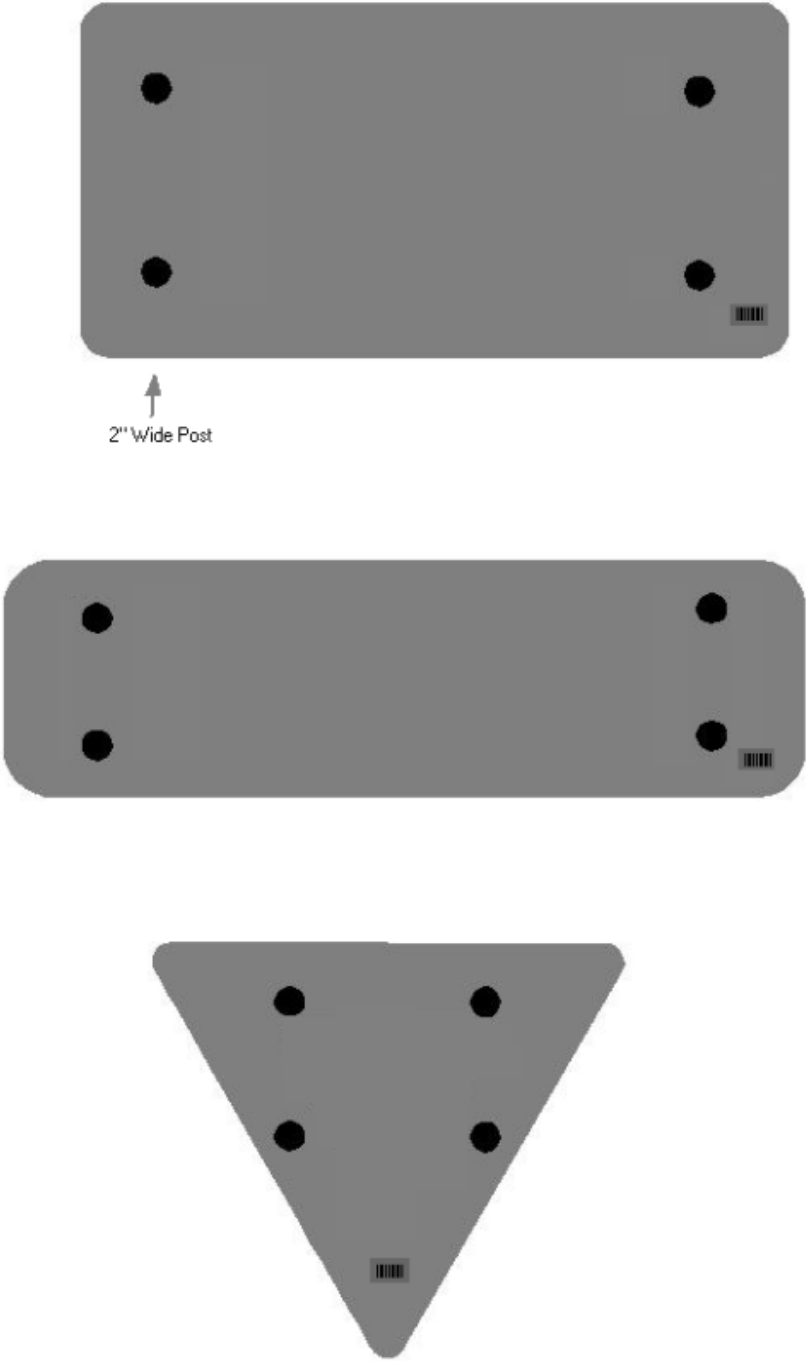


Interstate
Shield



48" Stop

2 Post Signs



SPECIAL NOTE FOR LONGITUDINAL PAVEMENT JOINT ADHESIVE

1. DESCRIPTION. This specification covers the requirements and practices for applying an asphalt adhesive material to the longitudinal joint of the surface course of an asphalt pavement. Apply the adhesive to the face of longitudinal joint between driving lanes for the first lane paved. Then, place and compact the adjacent lane against the treated face to produce a strong, durable, waterproof longitudinal joint.
2. MATERIALS, EQUIPMENT, AND PERSONNEL.

2.1 Joint Adhesive. Provide material conforming to Subsection 2.1.1.

2.1.1 Provide an adhesive conforming to the following requirements:

Property	Specification	Test Procedure
Viscosity, 400 ° F (Pa·s)	4.0 – 10.0	ASTM D 4402
Cone Penetration, 77 ° F	60 – 100	ASTM D 5329
Flow, 140 ° F (mm)	5.0 max.	ASTM D 5329
Resilience, 77 ° F (%)	30 min.	ASTM D 5329
Ductility, 77 ° F (cm)	30.0 min.	ASTM D 113
Ductility, 39 ° F (cm)	30.0 min.	ASTM D 113
Tensile Adhesion, 77 ° F (%)	500 min.	ASTM D 5329, Type II
Softening Point, ° F	171 min.	AASHTO T 53
Asphalt Compatibility	Pass	ASTM D 5329

Ensure the temperature of the pavement joint adhesive is between 380 and 410 °F when the material is extruded in a 0.125-inch-thick band over the entire face of the longitudinal joint.

2.2. Equipment.

2.2.1 Melter Kettle. Provide an oil-jacketed, double-boiler, melter kettle equipped with any needed agitation and recirculating systems.

2.2.2 Applicator System. Provide a pressure-feed-wand applicator system with an applicator shoe attached.

2.3 Personnel. Ensure a technical representative from the manufacturer of the pavement joint adhesive is present during the initial construction activities and available upon the request of the Engineer.

3. CONSTRUCTION.

3.1 Surface Preparation. Prior to the application of the pavement joint adhesive, ensure the face of the longitudinal joint is thoroughly dry and free from dust or any other debris that would inhibit adhesion. Clean the joint face by the use of compressed air.

11N

Ensure this preparation process occurs shortly before application to prevent the return of debris on the joint face.

3.2 Pavement Joint Adhesive Application. Ensure the ambient temperature is a minimum of 40 ° F during the application of the pavement joint adhesive. Prior to applying the adhesive, demonstrate competence in applying the adhesive according to this note to the satisfaction of the Engineer. Heat the adhesive in the melter kettle to the specified temperature range. Pump the adhesive from the melter kettle through the wand onto the vertical face of the cold joint. Apply the adhesive in a continuous band over the entire face of the longitudinal joint. Do not use excessive material in either thickness or location. Ensure the edge of the extruded adhesive material is flush with the surface of the pavement. Then, place and compact the adjacent lane against the joint face. Remove any excessive material extruded from the joint after compaction (a small line of material may remain).

3.3 Pavement Joint Adhesive Certification. Furnish the joint adhesive's certification to the Engineer stating the material conforms to all requirements herein prior to use.

3.4 Sampling and Testing. The Department will require a random sample of pavement joint adhesive from each manufacturer's lot of material. Extrude two 5 lb. samples of the heated material and forward the sample to the Division of Materials for testing. Reynolds oven bags, turkey size, placed inside small cardboard boxes or cement cylinder molds have been found suitable. Ensure the product temperature is 400°F or below at the time of sampling.

4. MEASUREMENT. The Department will measure the quantity of Pavement Joint Adhesive in linear feet. The Department will not measure for payment any extra materials, labor, methods, equipment, or construction techniques used to satisfy the requirements of this note. The Department will not measure for payment any trial applications of Pavement Joint Adhesive, the cleaning of the joint face, or furnishing and placing the adhesive. The Department will consider all such items incidental to the Pavement Joint Adhesive.
5. PAYMENT. The Department will pay for the Pavement Joint Adhesive at the Contract unit bid price and apply an adjustment for each manufacturer's lot of material based on the degree of compliance as defined in the following schedule. When a sample fails on two or more tests, the Department may add the deductions, but the total deduction will not exceed 100 percent.

11N

Pavement Joint Adhesive Price Adjustment Schedule						
Test	Specification	100% Pay	90% Pay	80% Pay	50% Pay	0% Pay
Joint Adhesive Referenced in Subsection 2.1.1						
Viscosity, 400 ° F (Pa•s)			3.0-3.4	2.5-2.9	2.0-2.4	≤1.9
ASTM D 3236	4.0-10.0	3.5-10.5	10.6-11.0	11.1-11.5	11.6-12.0	≥ 12.1
Cone Penetration, 77 ° F			54-56	51-53	48-50	≤ 47
ASTM D 5329	60-100	57-103	104-106	107-109	110-112	≥ 113
Flow, 140 ° F (mm) ASTM D 5329	≤ 5.0	≤ 5.5	5.6-6.0	6.1-6.5	6.6-7.0	≥ 7.1
Resilience, 77 ° F (%) ASTM D 5329	≥ 30	≥ 28	26-27	24-25	22-23	≤ 21
Tensile Adhesion, 77 ° F (%) ASTM D 5329	≥ 500	≥ 490	480-489	470-479	460-469	≤ 459
Softening Point, ° F AASHTO T 53	≥ 171	≥ 169	166-168	163-165	160-162	≤ 159
Ductility, 77 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9
Ductility, 39 ° F (cm) ASTM D 113	≥ 30.0	≥ 29.0	28.0-28.9	27.0-27.9	26.0-26.9	≤ 25.9

Code
20071EC

Pay Item
Joint Adhesive

Pay Unit
Linear Foot

May 7, 2014

SPECIAL PROVISION FOR EMBANKMENT AT BRIDGE END BENT STRUCTURES

This Special Provision will apply when indicated on the plans or in the proposal. Section references herein are to the Department's Standard Specifications for Road and Bridge Construction, Current Edition.

1.0 DESCRIPTION. Construct a soil, granular, or rock embankment with soil, granular or cohesive pile core and place structure granular backfill, as the Plans require. Construct the embankment according to the requirements of this Special Provision, the Plans, Standard Drawing RGX 100 and 105, and the Standard Specifications, Current Edition.

2.0 MATERIALS.

2.1 Granular Embankment. Conform to Subsection 805.10. When Granular Embankment materials are erodible or unstable according to Subsection 805.03.04, use the Special Construction Methods found in 3.2 of the Special Provision.

2.2 Rock Embankment. Provide durable rock from roadway excavation that consists principally of Unweathered Limestone, Durable Shale (SDI equal to or greater than 95 according to KM 64-513), or Durable Sandstone.

2.3 Pile Core. Provide a pile core in the area of the embankments where deep foundations are to be installed unless otherwise specified. The Pile Core is the zone indicated on Standard Drawings RGX 100 and 105 designated as Pile Core. Material control of the pile core area during embankment construction is always required. Proper Pile Core construction is required for installation of foundation elements such as drilled or driven piles or drilled shafts. The type of material used to construct the pile core is as directed in the plans or below. Typically, the pile core area will be constructed from the same material used to construct the surrounding embankment. Pile Core can be classified as one of three types:

A) Pile Core - Conform to Section 206 of the Standard Specifications. Provide pile core material consisting of the same material as the adjacent embankment except the material in the pile core area shall be free of boulders or particle sizes larger than 4 inches in any dimension or any other obstructions that may hinder pile driving operations. If the pile core material hinders pile driving operations, take the appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

B) Granular Pile Core. Granular pile core is required only when specified in the plans. Select a gradation of durable rock to facilitate pile driving that conforms to Subsection 805.11. If granular pile core material hinders pile driving operations, take appropriate means necessary to reach the required pile tip elevation, at no expense to the Department.

C) Cohesive Pile Core. Cohesive Pile Core is required only when specified in the plans. Conform to Section 206 of the Standard Specifications and use soil with at least 50 percent passing a No. 4 sieve having a minimum Plasticity Index (PI) of 10. In addition, keep the cohesive pile core free of boulders, larger than 4 inches in any dimension, or any other obstructions, which would interfere with drilling operations. If cohesive pile core material interferes with drilling operations, take appropriate means necessary to maintain excavation stability, at no expense to the Department.

2.4 Structure Granular Backfill. Conform to Subsection 805.11

2.5 Geotextile Fabric. Conform to Class 1 or Class 2 in Section 214 and 843.

3.0 CONSTRUCTION.

3.1 General. Construct roadway embankments at end bents according to Section 206 and in accordance with the Special Provision, the Plans, and Standard Drawings for the full embankment section. In some instances, granular or rock embankment will be required for embankment construction for stability purposes, but this special provision does not prevent the use of soil when appropriate. Refer to the plans for specific details regarding material requirements for embankment construction.

Place and compact the pile core and structure granular backfill according to the applicable density requirements for the project. If the embankment and pile core are dissimilar materials (i.e., a granular pile core is used with a soil embankment or a cohesive pile core is used with a granular embankment), a Geotextile Fabric, will be required between the pile core and embankment in accordance with Sections 214 and 843 of the Standard Specifications.

When granular or rock embankment is required for embankment construction, conform to the general requirements of Subsection 206.03.02 B. In addition, place the material in no greater than 2-foot loose lifts and compact with a vibrating smooth wheel roller capable of producing a minimum centrifugal force of 15 tons. Apply these requirements to the full width of the embankment for a distance of half the embankment height or 50 feet, whichever is greater, as shown on Standard Drawing RGX-105.

When using granular pile core, install 8-inch perforated underdrain pipe at or near the elevation of the original ground in the approximate locations depicted on the standard drawing, and as the Engineer directs, to ensure positive drainage of the embankment. Wrap the perforated pipe with a fabric of a type recommended by the pipe manufacturer.

After constructing the embankment, excavate for the end bent cap, drive piling, install shafts or other foundation elements, place the mortar bed, construct the end bent, and complete the embankment to finish grade according to the construction sequence shown on the Plans or Standard Drawings and as specified hereinafter.

Certain projects may require widening of existing embankments and the removal of substructures. Construct embankment according to the plans. Substructure removal shall be completed according to the plans and Section 203. Excavation may be required at the existing embankment in order to place the structure granular backfill as shown in the Standard Drawings.

After piles are driven or shafts installed (see design drawings), slope the bottom of the excavation towards the ends of the trench as noted on the plans for drainage. Using a separate pour, place concrete mortar, or any class concrete, to provide a base for forming and placing the cap. Place side forms for the end bent after the mortar has set sufficiently to support workmen and forms without being disturbed.

Install 4-inch perforated pipe in accordance with the plans and Standard Drawings. In the event slope protection extends above the elevation of the perforated pipe, extend the pipe through the slope protection.

After placing the end bent cap and achieving required concrete cylinder strengths, remove adjacent forms and fill the excavation with compacted structure granular backfill material (maximum 1' loose lifts) to the level of the berm prior to placing beams for the bridge. Place a geotextile fabric between embankment material and structure granular backfill. After completing the end bent backwall, or after completing the span end wall, place the compacted structure granular backfill (maximum 1'

loose lifts) to subgrade elevation. If the original excavation is enlarged, fill the entire volume with compacted structure granular backfill (maximum 1' loose lifts) at no expense to the Department. Do not place backfill before removing adjacent form work. Place structure granular backfill material in trench ditches at the ends of the excavation. Place Geotextile Fabric, over the surface of the compacted structure granular backfill prior to placing aggregate base course.

Tamp the backfill with hand tampers, pneumatic tampers, or other means approved by the Engineer. Thoroughly compact the backfill under the overhanging portions of the structure to ensure that the backfill is in intimate contact with the sides of the structure.

Do not apply seeding, sodding, or other vegetation to the exposed granular embankment.

3.2 Special Construction Methods. Erodible or unstable materials may erode even when protected by riprap or channel lining; use the special construction method described below when using these materials.

Use fine aggregates or friable sandstone granular embankment at "dry land" structures only. Do not use them at stream crossings or locations subject to flood waters.

For erodible or unstable materials having 50 percent or more passing the No. 4 sieve, protect with geotextile fabric. Extend the fabric from the original ground to the top of slope over the entire area of the embankment slopes on each side of, and in front of, the end bent. Cover the fabric with at least 12 inches of non-erodible material.

For erodible or unstable materials having less than 50 percent passing a No. 4 sieve, cover with at least 12 inches of non-erodible material.

Where erodible or unstable granular embankment will be protected by riprap or channel lining, place a geotextile fabric between the embankment and the specified slope protection.

4.0 MEASUREMENT.

4.1 Granular Embankment. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The Department will not measure for payment any Granular Embankment that is not called for in the plans.

The Department will not measure for payment any special construction caused by using erodible or unstable materials and will consider it incidental to the Granular Embankment regardless of whether the erodible or unstable material was specified or permitted.

4.2 Rock Embankment. The Department will not measure for payment any rock embankment and will consider it incidental to roadway excavation or embankment in place, as applicable. Rock embankments will be constructed using granular embankment on projects where there is no available rock present within the excavation limits of the project.

4.3 Pile Core. Pile core will be measured and paid under roadway excavation or embankment in place, as applicable. The Department will not measure the pile core for separate payment. The Department will not measure for payment the 8-inch perforated underdrain pipe and will consider it incidental to the Pile Core.

4.4 Structure Granular Backfill. The Department will measure the quantity in cubic yards using the plan quantity, increased or decreased by authorized adjustments as specified in Section 204. The

Department will not measure any additional material required for backfill outside the limits shown on the Plans and Standard Drawings for payment and will consider it incidental to the work.

The Department will not measure for payment the 4-inch perforated underdrain pipe and will consider it incidental to the Structure Granular Backfill.

4.5 Geotextile Fabric. The Department will not measure the quantity of fabric used for separating dissimilar materials when constructing the embankment and pile core and will consider it incidental to embankment construction.

The Department will not measure for payment the Geotextile Fabric used to separate the Structure Granular Backfill from the embankment and aggregate base course and will consider it incidental to Structure Granular Backfill.

The Department will not measure for payment the Geotextile Fabric required for construction with erodible or unstable materials and will consider it incidental to embankment construction.

4.6 End Bent. The Department will measure the quantities according to the Contract. The Department will not measure furnishing and placing the 2-inch mortar or concrete bed for payment and will consider it incidental to the end bent construction.

4.7 Structure Excavation. The Department will not measure structure excavation on new embankments for payment and will consider it incidental to the Structure Granular Backfill or Concrete as applicable.

5.0 PAYMENT. The Department will make payment for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
02223	Granular Embankment	Cubic Yards
02231	Structure Granular Backfill	Cubic Yards

The Department will consider payment as full compensation for all work required in this provision.

August 5, 2019

PART III

EMPLOYMENT, WAGE AND RECORD REQUIREMENTS

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated 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. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

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, United States Code, as required in 23 CFR 633.102(b) (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). 23 CFR 633.102(e).

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. 23 CFR 633.102(e).

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) in accordance with 23 CFR 633.102. 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 solicitation-for-bids or request-for-proposals 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). 23 CFR 633.102(b).

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. 23 CFR 633.102(d).

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. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A 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 Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 230, Subpart A, 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 (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 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 Part 35 and 29 CFR Part 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. 23 CFR 230.409 (g)(4) & (5).

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, sexual orientation, gender identity, 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 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 or other knowledgeable company official.

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, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure 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. 23 CFR 230.409. 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, sexual orientation, gender identity, 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, sexual orientation, gender identity, 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 thereunder. 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, sexual orientation, gender identity, 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, 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. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient 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 recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

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 more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, 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, sexual orientation, gender identity, 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), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

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 (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

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

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate 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 used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to DBAconformance@dol.gov. 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.

(4) 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 will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.* 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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. Basic record requirements (1) Length of record retention. All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) Information required. Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) Additional records relating to fringe benefits. Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must 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.

(4) Additional records relating to apprenticeship. Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. Certified payroll requirements (1) Frequency and method of submission. The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) Information required. The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHDL/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) Statement of Compliance. Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

- (i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;
- (ii) That each laborer or mechanic (including each helper and apprentice) working 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 [29 CFR part 3](#); and
- (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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

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

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices (1) Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. 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. 23 CFR 230.111(e)(2). 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 journeyworkers 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 as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 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 as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, 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 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 [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), 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 watchpersons 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. 29 CFR 5.5.

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 and interest from the date of the underpayment. 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 watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* 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.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

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" in paragraph 1 of Section VI 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: (based on longstanding interpretation)

- (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. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), 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. Pursuant to 23 CFR 635.116(c), 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. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

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 Part 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. 23 CFR 635.108.

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 Part 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). 29 CFR 1926.10.

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 Part 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 11, 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 (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

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. 2 CFR 180.220 and 1200.220.

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. 2 CFR 180.320.

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. 2 CFR 180.325.

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. 2 CFR 180.345 and 180.350.

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, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient 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 recipient or subrecipient 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. 2 CFR 180.330.

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. 2 CFR 180.220 and 180.300.

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. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. 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 System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

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 CFR 180.325.

* * * * *

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 CFR 180.335;.

(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, 2 CFR 180.800;

(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, 2 CFR 180.700 and 180.800; 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. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. 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). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant 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. 2 CFR 180.365.

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, Subpart I, 180.900 – 180.1020, 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 recipient or subrecipient 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 recipient or subrecipient 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. 2 CFR 1200.220 and 1200.332.

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. 2 CFR 180.220 and 1200.220.

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 System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

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. 2 CFR 180.325.

* * * * *

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

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should 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 Part 20, App. A.

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.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

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.

**KENTUCKY TRANSPORTATION CABINET
DEPARTMENT OF HIGHWAYS

EMPLOYMENT REQUIREMENTS
RELATING TO
NONDISCRIMINATION OF EMPLOYEES
(APPLICABLE TO FEDERAL-AID SYSTEM CONTRACTS)**

**AN ACT OF THE KENTUCKY GENERAL ASSEMBLY
TO PREVENT DISCRIMINATION IN EMPLOYMENT**

**KRS CHAPTER 344
EFFECTIVE JUNE 16, 1972**

The contract on this project, in accordance with KRS Chapter 344, provides that during the performance of this contract, the contractor agrees as follows:

1. The contractor shall not fail or refuse to hire, or shall not discharge any individual, or otherwise discriminate against an individual with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, national origin, sex, disability or age (forty and above); or limit, segregate, or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee, because of such individual's race, color, religion, national origin, sex, disability or age forty (40) and over. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

2. The contractor shall not print or publish or cause to be printed or published a notice or advertisement relating to employment by such an employer or membership in or any classification or referral for employment by the employment agency, indicating any preference, limitation, specification, or discrimination, based on race, color, religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, except that such a notice or advertisement may indicate a preference, limitation, or specification based on religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, when religion, national origin, sex, or age forty (40) and over, or because the person is a qualified individual with a disability, is a bona fide occupational qualification for employment.

3. If the contractor is in control of apprenticeship or other training or retraining, including on-the-job training programs, he shall not discriminate against an individual because of his race, color, religion, national origin, sex, disability or age forty (40) and over, in admission to, or employment in any program established to provide apprenticeship or other training.

4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for non-compliance.

Revised: January 25, 2017

Standard Title VI/Non-Discrimination Assurances

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **Federal Highway Administration** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **Federal Highway Administration**, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **Federal Highway Administration** may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **Federal Highway Administration** may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Standard Title VI/Non-Discrimination Statutes and Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*).

EXECUTIVE BRANCH CODE OF ETHICS

In the 1992 regular legislative session, the General Assembly passed and Governor Brereton Jones signed Senate Bill 63 (codified as KRS 11A), the Executive Branch Code of Ethics, which states, in part:

KRS 11A.040 (7) provides:

No present or former public servant shall, within six (6) months following termination of his office or employment, accept employment, compensation, or other economic benefit from any person or business that contracts or does business with, or is regulated by, the state in matters in which he was directly involved during the last thirty-six (36) months of his tenure. This provision shall not prohibit an individual from returning to the same business, firm, occupation, or profession in which he was involved prior to taking office or beginning his term of employment, or for which he received, prior to his state employment, a professional degree or license, provided that, for a period of six (6) months, he personally refrains from working on any matter in which he was directly involved during the last thirty-six (36) months of his tenure in state government. This subsection shall not prohibit the performance of ministerial functions, including but not limited to filing tax returns, filing applications for permits or licenses, or filing incorporation papers, nor shall it prohibit the former officer or public servant from receiving public funds disbursed through entitlement programs.

KRS 11A.040 (9) states:

A former public servant shall not represent a person or business before a state agency in a matter in which the former public servant was directly involved during the last thirty-six (36) months of his tenure, for a period of one (1) year after the latter of:

- a) The date of leaving office or termination of employment; or
- b) The date the term of office expires to which the public servant was elected.

This law is intended to promote public confidence in the integrity of state government and to declare as public policy the idea that state employees should view their work as a public trust and not as a way to obtain private benefits.

If you have worked for the executive branch of state government within the past six months, you may be subject to the law's prohibitions. The law's applicability may be different if you hold elected office or are contemplating representation of another before a state agency.

Also, if you are affiliated with a firm which does business with the state and which employs former state executive-branch employees, you should be aware that the law may apply to them.

In case of doubt, the law permits you to request an advisory opinion from the Executive Branch Ethics Commission, 1025 Capital Center Drive, Suite 104, Frankfort, Kentucky 40601; telephone (502) 564-7954.

Revised: May 23, 2022

"General Decision Number: KY20250038 01/03/2025

Superseded General Decision Number: KY20240038

State: Kentucky

Construction Type: Highway

Counties: Anderson, Bath, Bourbon, Boyd, Boyle, Bracken, Breckinridge, Bullitt, Carroll, Carter, Clark, Elliott, Fayette, Fleming, Franklin, Gallatin, Grant, Grayson, Greenup, Hardin, Harrison, Henry, Jefferson, Jessamine, Larue, Lewis, Madison, Marion, Mason, Meade, Mercer, Montgomery, Nelson, Nicholas, Oldham, Owen, Robertson, Rowan, Scott, Shelby, Spencer, Trimble, Washington and Woodford Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

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 \$17.75 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 2025.
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 \$13.30 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 2025.

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	01/03/2025

BRIN0004-003 06/01/2023

BRECKENRIDGE COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 34.17	19.60

BRKY0001-005 06/01/2023

BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE,
MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, & TRIMBLE
COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 33.48	15.92

BRKY0002-006 06/01/2023

BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 33.48	15.92

BRKY0007-004 06/01/2023

BOYD, CARTER, ELLIOT, FLEMING, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 39.46	20.14

BRKY0017-004 06/01/2023

ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FRANKLIN,
HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS,
OWEN, SCOTT, WASHINGTON & WOODFORD COUNTIES:

	Rates	Fringes
BRICKLAYER.....	\$ 33.48	15.92

CARP0064-001 04/01/2024

	Rates	Fringes
CARPENTER.....	\$ 32.90	23.33
Diver.....	\$ 49.73	23.33
PILEDRIVERMAN.....	\$ 33.40	23.33

ELEC0212-008 06/05/2024

BRACKEN, GALLATIN and GRANT COUNTIES

	Rates	Fringes
ELECTRICIAN.....	\$ 35.43	22.05

ELEC0212-014 11/27/2023		

BRACKEN, GALLATIN & GRANT COUNTIES:

	Rates	Fringes
Sound & Communication Technician.....	\$ 27.20	14.54

ELEC0317-012 06/03/2024		

BOYD, CARTER, ELLIOT & ROWAN COUNTIES:

	Rates	Fringes
ELECTRICIAN (Wiremen).....	\$ 38.30	23.12

ELEC0369-007 05/29/2024		

ANDERSON, BATH, BOURBON, BOYLE, BRECKINRIDGE, BULLITT, CARROLL, CLARK, FAYETTE, FRAONKLIN, GRAYSON, HARDIN, HARRISON, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, MONTGOMERY, NELSON, NICHOLAS, OLDHAM, OWEN, ROBERTSON, SCOTT, SHELBY, SPENCER, TRIMBLE, WASHINGTON, & WOODFORD COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 37.88	21.38

ELEC0575-002 05/29/2023		

FLEMING, GREENUP, LEWIS & MASON COUNTIES:

	Rates	Fringes
ELECTRICIAN.....	\$ 37.00	22.26

ENGI0181-018 07/01/2024		

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 40.05	19.10
GROUP 2.....	\$ 37.19	19.10
GROUP 3.....	\$ 37.64	19.10
GROUP 4.....	\$ 36.87	19.10

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller; Batcher Plant; Bituminous Paver; Bituminous Transfer Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All Scoop; Carry Deck Crane; Central Compressor Plant; Cherry Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Paver; Truck-Mounted Concrete Pump; Core Drill; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge

Engineer; Elevating Grader & Loaders; Grade-All; Gurries; Heavy Equipment Robotics Operator/Mechanic; High Lift; Hoe-Type Machine; Hoist (Two or More Drums); Hoisting Engine (Two or More Drums); Horizontal Directional Drill Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau; Locomotive; Mechanic; Mechanically Operated Laser Screed; Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete; Push Dozer; Rock Spreader, attached to equipment; Rotary Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier; Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom; Telescoping Type Forklift; Tow or Push Boat; Tower Crane (French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Concrete Pump; Skid Steer Machine with all Attachments; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points; & Whirley Oiler

GROUP 3 - All Off Road Material Handling Equipment, including Articulating Dump Trucks; Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where the length of the boom in combination with the length of the piling leads equals or exceeds 150 ft. - \$1.00 over Group 1 rate

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID 10%

ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

IRON0044-009 06/01/2024

BRACKEN, GALLATIN, GRANT, HARRISON, ROBERTSON,
BOURBON (Northern third, including Townships of Jackson, Millersburg, Ruddel Mills & Shawhan);
CARROLL (Eastern third, including the Township of Ghent);
FLEMING (Western part, excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummerts Landing, Plummerts Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);
MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg,

Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);
NICHOLAS (Townships of Barefoot, Barterville, Carlisle, Ellisville, Headquarters, Henryville, Morningglory, Myers & Oakland Mills);
OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);
SCOTT (Northern two-thirds, including Townships of Biddle, Davis, Delaplain, Elmville, Longlick, Muddy Ford, Oxford, Rogers Gap, Sadieville, Skinnersburg & Stonewall)

	Rates	Fringes
IRONWORKER		
Fence Erector.....	\$ 33.60	23.00
Structural.....	\$ 35.37	23.00

IRON0070-006 06/01/2024		

ANDERSON, BOYLE, BRECKINRIDGE, BULLITT, FAYETTE, FRANKLIN, GRAYSON, HARDIN, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE, WASHINGTON & WOODFORD
BOURBON (Southern two-thirds, including Townships of Austerlity, Centerville, Clintonville, Elizabeth, Hutchison, Littlerock, North Middletown & Paris);
CARROLL (Western two-thirds, including Townships of Carrollton, Easterday, English, Locust, Louis, Prestonville & Worthville);
CLARK (Western two-thirds, including Townships of Becknerville, Flanagan, Ford, Pine Grove, Winchester & Wyandotte);
OWEN (Eastern eighth, including Townships of Glenmary, Gratz, Monterey, Perry Park & Tacketts Mill);
SCOTT (Southern third, including Townships of Georgetown, Great Crossing, Newtown, Stampling Ground & Woodlake);

	Rates	Fringes
IRONWORKER.....	\$ 34.59	25.00

IRON0769-007 06/01/2024		

BATH, BOYD, CARTER, ELLIOTT, GREENUP, LEWIS, MONTGOMERY & ROWAN
CLARK (Eastern third, including townships of Bloomingdale, Hunt, Indian Fields, Kiddville, Loglick, Rightangele & Thomson);
FLEMING (Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksville, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);
MASON (Eastern third, including Townships of Helena, Marshall, Orangeburg, Plumville & Springdale);
NICHOLAS (Eastern eighth, including the Township of Moorefield Sprout)

	Rates	Fringes
IRONWORKER		
ZONE 1.....	\$ 37.66	29.24
ZONE 2.....	\$ 38.06	29.24
ZONE 3.....	\$ 39.66	29.24

ZONE 1 - (no base rate increase) Up to 10 mile radius of Union Hall, 1643 Greenup Ave, Ashland, KY.

ZONE 2 - (add \$0.40 per hour to base rate) 10 to 50 mile radius of Union Hall, 1643 Greenup Ave, Ashland, KY.

ZONE 3 - (add \$2.00 per hour to base rate) 50 mile radius & over of Union Hall, 1643 Greenup Ave, Ashland, KY.

LAB00189-003 07/01/2024

BATH, BOURBON, BOYD, BOYLE, BRACKEN, CARTER, CLARK, ELLIOTT, FAYETTE, FLEMING, FRANKLIN, GALLATIN, GRANT, GREENUP, HARRISON, JESSAMINE, LEWIS, MADISON, MASON, MERCER, MONTGOMERY, NICHOLAS, OWEN, ROBERTSON, ROWAN, SCOTT, & WOOLFORD COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.96	18.58
GROUP 2.....	\$ 24.21	18.58
GROUP 3.....	\$ 24.26	18.58
GROUP 4.....	\$ 24.86	18.58

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen &

Blasters; Troxler & Concrete Tester if Laborer is Utilized

LAB00189-008 07/01/2024

ANDERSON, BULLITT, CARROLL, HARDIN, HENRY, JEFFERSON, LARUE,
MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE &
WASHINGTON COUNTIES

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.96	18.58
GROUP 2.....	\$ 24.21	18.58
GROUP 3.....	\$ 24.26	18.58
GROUP 4.....	\$ 24.86	18.58

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

LAB00189-009 07/01/2024

BRECKINRIDGE & GRAYSON COUNTIES

Rates	Fringes
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Laborers:		
GROUP 1.....	\$ 23.96	18.58
GROUP 2.....	\$ 24.21	18.58
GROUP 3.....	\$ 24.26	18.58
GROUP 4.....	\$ 24.86	18.58

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

PAIN0012-005 06/11/2005

BATH, BOURBON, BOYLE, CLARK, FAYETTE, FLEMING, FRANKLIN,
HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS,
ROBERTSON, SCOTT & WOODFORD COUNTIES:

	Rates	Fringes
PAINTER		
Bridge/Equipment Tender and/or Containment Builder..	\$ 18.90	5.90
Brush & Roller.....	\$ 21.30	5.90
Elevated Tanks; Steeplejack Work; Bridge &		
Lead Abatement.....	\$ 22.30	5.90
Sandblasting & Waterblasting.....	\$ 22.05	5.90

Spray.....	\$ 21.80	5.90

PAIN0012-017 05/01/2015		

BRACKEN, GALLATIN, GRANT, MASON & OWEN COUNTIES:

	Rates	Fringes
PAINTER (Heavy & Highway Bridges - Guardrails - Lightpoles - Striping)		
Bridge Equipment Tender and Containment Builder.....	\$ 20.73	9.06
Brush & Roller.....	\$ 23.39	9.06
Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement.....	\$ 24.39	9.06
Sandblasting & Water Blasting.....	\$ 24.14	9.06
Spray.....	\$ 23.89	9.06

PAIN0118-004 06/01/2018		

ANDERSON, BRECKINRIDGE, BULLITT, CARROLL, GRAYSON, HARDIN,
HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY,
SPENCER, TRIMBLE & WASHINGTON COUNTIES:

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 22.00	12.52
Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning.....	\$ 23.00	12.52

PAIN1072-003 12/01/2024		

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS and ROWAN COUNTIES

	Rates	Fringes
Painters:		
Bridges; Locks; Dams; Tension Towers & Energized Substations.....	\$ 37.53	23.95
Power Generating Facilities.....	\$ 34.29	23.95

PLUM0248-003 06/01/2024		

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS & ROWAN COUNTIES:

	Rates	Fringes
Plumber and Steamfitter.....	\$ 41.50	25.01

PLUM0392-007 06/01/2024		

BRACKEN, CARROLL (Eastern Half), GALLATIN, GRANT, MASON, OWEN &
ROBERTSON COUNTIES:

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 40.70	26.75

PLUM0502-003 08/01/2024

BRECKINRIDGE, BULLITT, CARROLL (Western Half), FRANKLIN
(Western three-fourths), GRAYSON, HARDIN, HENRY, JEFFERSON,
LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE &
WASHINGTON COUNTIES

	Rates	Fringes
PLUMBER.....	\$ 41.90	24.89

SUKY2010-160 10/08/2001

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 16.57 **	7.34
GROUP 2.....	\$ 16.68 **	7.34
GROUP 3.....	\$ 16.86 **	7.34
GROUP 4.....	\$ 16.96 **	7.34

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Mobile Batch Truck Tender

GROUP 2 - Greaser; Tire Changer; & Mechanic Tender

GROUP 3 - Single Axle Dump; Flatbed; Semi-trailer or Pole
Trailer when used to pull building materials and equipment;
Tandem Axle Dump; Distributor; Mixer; & Truck Mechanic

GROUP 4 - Euclid & Other Heavy Earthmoving Equipment &
Lowboy; Articulator Cat; 5-Axle Vehicle; Winch & A-Frame
when used in transporting materials; Ross Carrier; Forklift
when used to transport building materials; & Pavement
Breaker

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher
minimum wage under Executive Order 14026 (\$17.75) or 13658
(\$13.30). Please see the Note at the top of the wage
determination for more information. Please also note that the
minimum wage requirements of Executive Order 14026 are not
currently being enforced as to any contract or subcontract to
which the states of Texas, Louisiana, or Mississippi, including
their agencies, are a party.

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 classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union

rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

----- WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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END OF GENERAL DECISION"

Fringe benefit amounts are applicable for all hours worked except when otherwise noted.

No laborer, workman or mechanic shall be paid at a rate less than that of a Journeyman except those classified as bona fide apprentices.

Apprentices or trainees shall be permitted to work as such subject to Administrative Regulations adopted by the Commissioner of Workplace Standards. Copies of these regulations will be furnished upon request from any interested person.

Before using apprentices on the job the contractor shall present to the Contracting Officer written evidence of registration of such employees in a program of a State apprenticeship and training agency approved and recognized by the U. S. Bureau of Apprenticeship and Training. In the absence of such a State agency, the contractor shall submit evidence of approval and registration by the U. S. Bureau of Apprenticeship and Training.

The contractor shall submit to the Contracting Officer, written evidence of the established apprenticeship-journeyman ratios and wage rates in the project area, which will be the basis for establishing such ratios and rates for the project under the applicable contract provisions.

TO: EMPLOYERS/EMPLOYEES

PREVAILING WAGE SCHEDULE:

The wages indicated on this wage schedule are the least permitted to be paid for the occupations indicated. When an employee works in more than one classification, the employer must record the number of hours worked in each classification at the prescribed hourly base rate.

OVERTIME:

Overtime is to be paid to an employee at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek. Wage violations or questions should be directed to the designated Engineer or the undersigned.

Director
Division of Construction Procurement
Frankfort, Kentucky 40622
502-564-3500

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
(Executive Order 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

GOALS FOR MINORITY PARTICIPATION IN EACH TRADE	GOALS FOR FEMALE PARTICIPATION IN EACH TRADE
11.2%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it 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 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 efforts 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.

3. The Notification of Construction Contract Award Portal (NCAP) is OFCCP’s preferred method for receiving construction contract award notifications. The NCAP can be found on OFCCP’s website at <https://www.dol.gov/agencies/ofccp/ncap>. Users who prefer not to use the portal maintain the option to send their notifications via mail, email and facsimile to the OFCCP Regional office in which the work will be performed. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten (10) working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notification must include: Prime Contract Number (issued by the federal agency or applicant); Name of Awarding Federal Agency, Applicant or Contractor; Contracting Officer, Applicant Representative or Contractor Representative Submitting Notification with name, phone number, email address; Contractor Awarded Contract or Subcontract with name, address, phone number, email address, EIN, dollar amount of the contract, estimated start date of the contract, estimated completion date of the contract, geographical area in which the contract is to be performed (state, county’s city (if applicable)).
- The notification shall be mailed to:

**Regional Director
Office of Federal Contract Compliance Programs
61 Forsyth Street, SW, Suite 7B75
Atlanta, Georgia 30303-8931
Main Number: 404-893-4545 Fax: 404-893-4546
Regional Director Contact: OFCCP-SE@dol.gov
Construction Award Email: OFCCP-SE-ConstructionAward@dol.gov**

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is Jefferson County.
- (Revised: 1/1/2023)

PART IV

BID ITEMS

Report Date 2/20/25

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00003		CRUSHED STONE BASE	67,098.00	TON		\$	
0020	00018		DRAINAGE BLANKET-TYPE II-ASPH	21,166.00	TON		\$	
0030	00100		ASPHALT SEAL AGGREGATE	288.00	TON		\$	
0040	00103		ASPHALT SEAL COAT	34.00	TON		\$	
0050	00190		LEVELING & WEDGING PG64-22	16,035.00	TON		\$	
0060	00194		LEVELING & WEDGING PG76-22	288.00	TON		\$	
0070	00210		CL4 ASPH BASE 1.50D PG76-22	7,656.00	TON		\$	
0080	00212		CL2 ASPH BASE 1.00D PG64-22	1,462.00	TON		\$	
0090	00214		CL3 ASPH BASE 1.00D PG64-22	6,563.00	TON		\$	
0100	00216		CL3 ASPH BASE 1.00D PG76-22	2,971.00	TON		\$	
0110	00217		CL4 ASPH BASE 1.00D PG64-22	41,716.00	TON		\$	
0120	00219		CL4 ASPH BASE 1.00D PG76-22	15,602.00	TON		\$	
0130	00296		ASPHALT PRIME COAT	67.00	TON		\$	
0140	00301		CL2 ASPH SURF 0.38D PG64-22	768.00	TON		\$	
0150	00336		CL3 ASPH SURF 0.38A PG76-22	2,099.00	TON		\$	
0160	00342		CL4 ASPH SURF 0.38A PG76-22	20,228.00	TON		\$	
0170	02084		JPC PAVEMENT-8 IN	102.00	SQYD		\$	
0180	02101		CEM CONC ENT PAVEMENT-8 IN	68.00	SQYD		\$	
0190	02677		ASPHALT PAVE MILLING & TEXTURING	15,046.00	TON		\$	
0200	22906ES403		CL3 ASPH SURF 0.38A PG64-22	896.00	TON		\$	
0210	24970EC		ASPHALT MATERIAL FOR TACK NON-TRACKING	150.00	TON		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0220	00078		CRUSHED AGGREGATE SIZE NO 2	5,782.00	TON		\$	
0230	01314		PLUG PIPE	12.00	EACH		\$	
0240	01584		CAP DROP BOX INLET	3.00	EACH		\$	
0250	01691		FLUME INLET TYPE 2	2.00	EACH		\$	
0260	01717		FILL AND CAP INLET	12.00	EACH		\$	
0270	01786		FILL AND CAP MANHOLE	1.00	EACH		\$	
0280	01791		ADJUST MANHOLE FRAME TO GRADE	2.00	EACH		\$	
0290	01792		ADJUST MANHOLE	2.00	EACH		\$	
0300	01810		STANDARD CURB AND GUTTER	2,365.00	LF		\$	
0310	01811		STANDARD CURB AND GUTTER MOD	5,018.00	LF		\$	
0320	01875		STANDARD HEADER CURB	703.00	LF		\$	
0330	01917		STANDARD BARRIER MEDIAN TYPE 2	984.00	SQYD		\$	
0340	01921		STANDARD BARRIER MEDIAN TYPE 4	126.00	SQYD		\$	
0350	01978		CONC MEDIAN BARRIER TYPE A TL5 56 IN	5,529.00	LF		\$	
0360	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	78.00	EACH		\$	
0370	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	129.00	EACH		\$	
0380	02003		RELOCATE TEMP CONC BARRIER	19,527.00	LF		\$	
0390	02014		BARRICADE-TYPE III	138.00	EACH		\$	
0400	02155		PAVED DITCH TYPE 1 MOD	424.00	SQYD		\$	

Report Date 2/20/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	02159		TEMP DITCH	15,175.00	LF		\$	
0420	02160		CLEAN TEMP DITCH	7,588.00	LF		\$	
0430	02200		ROADWAY EXCAVATION	183,650.00	CUYD		\$	
0440	02242		WATER	3,275.00	MGAL		\$	
0450	02262		FENCE-WOVEN WIRE TYPE 1	4,254.00	LF		\$	
0460	02367		GUARDRAIL END TREATMENT TYPE 1	8.00	EACH		\$	
0470	02369		GUARDRAIL END TREATMENT TYPE 2A	13.00	EACH		\$	
0480	02381		REMOVE GUARDRAIL	13,956.00	LF		\$	
0490	02391		GUARDRAIL END TREATMENT TYPE 4A	4.00	EACH		\$	
0500	02429		RIGHT-OF-WAY MONUMENT TYPE 1	25.00	EACH		\$	
0510	02430		RIGHT-OF-WAY MONUMENT TYPE 1A	7.00	EACH		\$	
0520	02432		WITNESS POST	3.00	EACH		\$	
0530	02483		CHANNEL LINING CLASS II	6,220.00	TON		\$	
0540	02484		CHANNEL LINING CLASS III	2,187.00	TON		\$	
0550	02545		CLEARING AND GRUBBING 57.9 ACRES	1.00	LS		\$	
0560	02555		CONCRETE-CLASS B	75.25	CUYD		\$	
0570	02562		TEMPORARY SIGNS	3,950.00	SQFT		\$	
0580	02585		EDGE KEY	578.00	LF		\$	
0590	02602		FABRIC-GEOTEXTILE CLASS 1	19,174.00	SQYD		\$	
0600	02604		FABRIC-GEOTEXTILE CLASS 1A	7,500.00	SQYD		\$	
0610	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0620	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0630	02671		PORTABLE CHANGEABLE MESSAGE SIGN	8.00	EACH		\$	
0640	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0650	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0660	02690		SAFELOADING	168.00	CUYD		\$	
0670	02701		TEMP SILT FENCE	15,175.00	LF		\$	
0680	02703		SILT TRAP TYPE A	101.00	EACH		\$	
0690	02704		SILT TRAP TYPE B	101.00	EACH		\$	
0700	02705		SILT TRAP TYPE C	101.00	EACH		\$	
0710	02706		CLEAN SILT TRAP TYPE A	101.00	EACH		\$	
0720	02707		CLEAN SILT TRAP TYPE B	101.00	EACH		\$	
0730	02708		CLEAN SILT TRAP TYPE C	101.00	EACH		\$	
0740	02720		SIDEWALK-4 IN CONCRETE	1,860.00	SQYD		\$	
0750	02723		SIDEWALK-6 IN CONCRETE	2,381.00	SQYD		\$	
0760	02726		STAKING	1.00	LS		\$	
0770	02726		STAKING	1.00	LS		\$	
0780	02731		REMOVE STRUCTURE REMOVAL OF EXISTING I-71 RAMP BRIDGE	1.00	LS		\$	
0790	02731		REMOVE STRUCTURE REMOVAL OF EXISTING US 42 BRIDGE OVER 1-264	1.00	LS		\$	
0800	02775		ARROW PANEL	19.00	EACH		\$	
0810	02898		RELOCATE CRASH CUSHION	4.00	EACH		\$	
0820	03171		CONC BARRIER WALL TYPE 9T	24,045.00	LF		\$	
0830	05950		EROSION CONTROL BLANKET	41,167.00	SQYD		\$	
0840	05952		TEMP MULCH	332,440.00	SQYD		\$	
0850	05953		TEMP SEEDING AND PROTECTION	254,120.00	SQYD		\$	
0860	05963		INITIAL FERTILIZER	12.75	TON		\$	
0870	05964		MAINTENANCE FERTILIZER	17.25	TON		\$	

Report Date 2/20/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0880	05985		SEEDING AND PROTECTION	201,932.00	SQYD		\$	
0890	05990		SODDING	2,370.00	SQYD		\$	
0900	05992		AGRICULTURAL LIMESTONE	258.00	TON		\$	
0910	06401		FLEXIBLE DELINEATOR POST-M/W	91.00	EACH		\$	
0920	06404		FLEXIBLE DELINEATOR POST-M/Y	99.00	EACH		\$	
0930	06510		PAVE STRIPING-TEMP PAINT-4 IN	179,051.00	LF		\$	
0940	06511		PAVE STRIPING-TEMP PAINT-6 IN	143,056.00	LF		\$	
0950	06513		PAVE STRIPING-TEMP PAINT-12 IN	12,000.00	LF		\$	
0960	06515		PAVE STRIPING-PERM PAINT-6 IN	3,675.00	LF		\$	
0970	06542		PAVE STRIPING-THERMO-6 IN W	59,684.00	LF		\$	
0980	06543		PAVE STRIPING-THERMO-6 IN Y	45,751.00	LF		\$	
0990	06546		PAVE STRIPING-THERMO-12 IN W	17,178.00	LF		\$	
1000	06547		PAVE STRIPING-THERMO-12 IN Y	231.00	LF		\$	
1010	06550		PAVE STRIPING-TEMP REM TAPE-W	900.00	LF		\$	
1020	06551		PAVE STRIPING-TEMP REM TAPE-Y	900.00	LF		\$	
1030	06556		PAVE STRIPING-DUR TY 1-6 IN W	462.00	LF		\$	
1040	06557		PAVE STRIPING-DUR TY 1-6 IN Y	440.00	LF		\$	
1050	06565		PAVE MARKING-THERMO X-WALK-6 IN	2,651.00	LF		\$	
1060	06568		PAVE MARKING-THERMO STOP BAR-24IN	805.00	LF		\$	
1070	06569		PAVE MARKING-THERMO CROSS-HATCH	455.00	SQFT		\$	
1080	06570		PAVE MARKING-PAINT CROSS-HATCH	115.00	SQFT		\$	
1090	06573		PAVE MARKING-THERMO STR ARROW	12.00	EACH		\$	
1100	06574		PAVE MARKING-THERMO CURV ARROW	168.00	EACH		\$	
1110	06575		PAVE MARKING-THERMO COMB ARROW	20.00	EACH		\$	
1120	06576		PAVE MARKING-THERMO ONLY	5.00	EACH		\$	
1130	06598		PAVEMENT MARKING REMOVAL	790.00	SQFT		\$	
1140	06600		REMOVE PAVEMENT MARKER TYPE V	1,629.00	EACH		\$	
1150	06610		INLAID PAVEMENT MARKER-MW	150.00	EACH		\$	
1160	06612		INLAID PAVEMENT MARKER-BY	131.00	EACH		\$	
1170	06613		INLAID PAVEMENT MARKER-B W/R	1,681.00	EACH		\$	
1180	06614		INLAID PAVEMENT MARKER-B Y/R	162.00	EACH		\$	
1190	08903		CRASH CUSHION TY VI CLASS BT TL3	11.00	EACH		\$	
1200	10020NS		FUEL ADJUSTMENT	249,183.00	DOLL	\$1.00	\$	\$249,183.00
1210	10030NS		ASPHALT ADJUSTMENT	402,720.00	DOLL	\$1.00	\$	\$402,720.00
1220	15094		S MANHOLE ADJUST TO GRADE	5.00	EACH		\$	
1230	20071EC		JOINT ADHESIVE	113,228.00	LF		\$	
1240	20166ES810		TEMPORARY PIPE	1,000.00	LF		\$	
1250	20191ED		OBJECT MARKER TY 3	12.00	EACH		\$	
1260	20432ES112		REMOVE CRASH CUSHION	2.00	EACH		\$	
1270	20550ND		SAWCUT PAVEMENT	52,499.00	LF		\$	
1280	21289ED		LONGITUDINAL EDGE KEY	46,706.00	LF		\$	
1290	21417ES717		PAVE MARK THERMO CONE CAP-SOLID YELLOW	22.00	SQFT		\$	
1300	21802EN		G/R STEEL W BEAM-S FACE (7 FT POST)	11,378.50	LF		\$	
1310	22520EN		PAVE MARKING-THERMO YIELD BAR-36 IN	122.00	LF		\$	
1320	22664EN		WATER BLASTING EXISTING STRIPE	316,200.00	LF		\$	
1330	22692NS714		PAVEMENT MARKING-THERMO LETTERS	10.00	EACH		\$	
1340	22880ED		BARRIER WALL TRANSITION	75.00	LF		\$	
1350	23158ES505		DETECTABLE WARNINGS	795.00	SQFT		\$	
1360	23251ES717		PAVE MARK TY 1 TAPE X-WALK-6 IN	263.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1370	23261EC		PAVE MARK-THERMO-X-WALK-24 IN	350.00	LF		\$	
1380	23265ES717		PAVE MARK TY 1 TAPE STOP BAR-24 IN	25.00	LF		\$	
1390	23270ES717		PAVE MARK TY 1 TAPE-CURV ARROW	2.00	EACH		\$	
1400	23314EC		CONCRETE TRENCH	1,612.00	LF		\$	
1410	23607EC		PAVE MARK THERMO-LANE REDUCTION ARROW	21.00	EACH		\$	
1420	23871EC		PAVE STRIPE-WET REF TAPE-6 IN Y	161.00	LF		\$	
1430	23872EC		PAVE STRIPE-WET REF TAPE-6 IN W	399.00	LF		\$	
1440	24280EC		PAVE MARK THERMO CHEVRON-48 IN	3,492.00	LF		\$	
1450	24544EC		REMOVE REMOVE BARRIER WALL AND RAILING SYSTEM AND SOUND WALL	4,049.00	LF		\$	
1460	24596EN		GRANULAR BACKFILL	2,820.00	CUYD		\$	
1470	24640ED		OBJECT MARKER TYPE 1	11.00	EACH		\$	
1480	24679ED		PAVE MARK THERMO CHEVRON	1,279.00	SQFT		\$	
1490	24683ED		PAVE MARKING-THERMO DOTTED LANE EXTEN	294.00	LF		\$	
1500	24689EC		PAVE MARK THERMO-WRONG WAY ARROW	14.00	EACH		\$	
1510	24744ED		GUARDRAIL CONN TO CONC MED BARR MOD-CR	1.00	EACH		\$	
1520	24899EC		PAVE MARKING-THERMO ELONG ROUTE SHIELD	18.00	EACH		\$	
1530	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN PRICE INCLUDES MOMENT SLAB FOR BARRIER	8,545.00	LF		\$	
1540	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	10.00	EACH		\$	
1550	25079ED		THRIE BEAM GUARDRAIL TRANSITION TL-2	4.00	EACH		\$	
1560	26146ES717		PAVE MARK TY 1 TAPE LANE REDUCTION ARROW	1.00	EACH		\$	
1570	26155EC		PAVE MARK-THERMO POLY MOD LANE USE ARROW	8.00	EACH		\$	
1580	26156EC		PAVE MARK-THERMO POLY MOD LANE COMBO ARR	8.00	EACH		\$	
1590	26164ES717		PAVE MARK TY 1 TAPE X-WALK-24 IN	350.00	LF		\$	
1600	26240EC		PAVE STRIPE-WET REF CONT TAPE-6 IN W	1,424.00	LF		\$	
1610	26241EC		PAVE STRIPE-WET REF CONT TAPE-6 IN Y	712.00	LF		\$	

Section: 0003 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1620	00462		CULVERT PIPE-18 IN	45.00	LF		\$	
1630	00464		CULVERT PIPE-24 IN	93.00	LF		\$	
1640	00466		CULVERT PIPE-30 IN	79.00	LF		\$	
1650	00468		CULVERT PIPE-36 IN	14.00	LF		\$	
1660	00470		CULVERT PIPE-48 IN	19.00	LF		\$	
1670	00521		STORM SEWER PIPE-15 IN	3,575.00	LF		\$	
1680	00522		STORM SEWER PIPE-18 IN	5,490.00	LF		\$	
1690	00524		STORM SEWER PIPE-24 IN	1,083.00	LF		\$	
1700	00526		STORM SEWER PIPE-30 IN	199.00	LF		\$	
1710	00528		STORM SEWER PIPE-36 IN	1,072.00	LF		\$	
1720	00529		STORM SEWER PIPE-42 IN	1,390.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1730	00530		STORM SEWER PIPE-48 IN	1,485.00	LF		\$	
1740	00551		STORM SEWER PIPE-15 IN EQUIV	30.00	LF		\$	
1750	01001		PERFORATED PIPE-6 IN	20,363.00	LF		\$	
1760	01011		NON-PERFORATED PIPE-6 IN	8,122.00	LF		\$	
1770	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM	1.00	LS		\$	
1780	01025		PERF PIPE HEADWALL TY 2-6 IN	12.00	EACH		\$	
1790	01029		PERF PIPE HEADWALL TY 3-6 IN	12.00	EACH		\$	
1800	01033		PERF PIPE HEADWALL TY 4-6 IN	8.00	EACH		\$	
1810	01202		PIPE CULVERT HEADWALL-15 IN	20.00	EACH		\$	
1820	01204		PIPE CULVERT HEADWALL-18 IN	20.00	EACH		\$	
1830	01208		PIPE CULVERT HEADWALL-24 IN	3.00	EACH		\$	
1840	01210		PIPE CULVERT HEADWALL-30 IN	1.00	EACH		\$	
1850	01212		PIPE CULVERT HEADWALL-36 IN	4.00	EACH		\$	
1860	01441		SLOPED BOX INLET-OUTLET TYPE 2	2.00	EACH		\$	
1870	01451		S & F BOX INLET-OUTLET-24 IN	1.00	EACH		\$	
1880	01456		CURB BOX INLET TYPE A	19.00	EACH		\$	
1890	01459		CURB BOX INLET TYPE A MOD	8.00	EACH		\$	
1900	01480		CURB BOX INLET TYPE B	5.00	EACH		\$	
1910	01484		CURB BOX INLET TYPE B-T	1.00	EACH		\$	
1920	01490		DROP BOX INLET TYPE 1	8.00	EACH		\$	
1930	01491		DROP BOX INLET TYPE 1 MOD	4.00	EACH		\$	
1940	01494		DROP BOX INLET TYPE 2 MOD	2.00	EACH		\$	
1950	01496		DROP BOX INLET TYPE 3	1.00	EACH		\$	
1960	01502		DROP BOX INLET TYPE 5A	4.00	EACH		\$	
1970	01542		DROP BOX INLET TYPE 10 MOD	4.00	EACH		\$	
1980	01544		DROP BOX INLET TYPE 11	2.00	EACH		\$	
1990	01559		DROP BOX INLET TYPE 13G	9.00	EACH		\$	
2000	01568		DROP BOX INLET TYPE 13S	4.00	EACH		\$	
2010	01577		DROP BOX INLET TYPE 14	1.00	EACH		\$	
2020	01580		DROP BOX INLET TYPE 15	2.00	EACH		\$	
2030	01587		DROP BOX INLET TYPE 16S	1.00	EACH		\$	
2040	01597		CONC MED BARR BOX INLET TY A1	3.00	EACH		\$	
2050	01598		CONC MED BARR BOX INLET TY B1	51.00	EACH		\$	
2060	01623		CONC MED BARR BOX INLET TY B1 TL5 56	8.00	EACH		\$	
2070	01624		CONC MED BARR BOX INLET TY B2 TL5 56	24.00	EACH		\$	
2080	01626		CONC MED BARR BOX INLET TY A2 TL5 56	1.00	EACH		\$	
2090	01650		JUNCTION BOX	21.00	EACH		\$	
2100	01720		RECONSTRUCT INLET	2.00	EACH		\$	
2110	01741		CORED HOLE DRAINAGE BOX CON-6 IN	104.00	EACH		\$	
2120	01756		MANHOLE TYPE A	4.00	EACH		\$	
2130	01768		MANHOLE TYPE C MOD	1.00	EACH		\$	
2140	02478		CAP INLET	8.00	SQYD		\$	
2150	02607		FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	19,992.00	SQYD	\$2.00	\$	\$39,984.00
2160	08100		CONCRETE-CLASS A	31.00	CUYD		\$	
2170	20571ES710		DROP BOX INLET TY 16G(MOD)	4.00	EACH		\$	
2180	21541NN		CORED HOLE DRAINAGE BOX CON- 18 IN	7.00	EACH		\$	
2190	23074NN		ADJUST DRAINAGE STRUCTURE	3.00	EACH		\$	
2200	23610NC		CORED HOLE DRAINAGE BOX CON	1.00	EACH		\$	
2210	23952EC		DRAINAGE JUNCTION BOX TY B	3.00	EACH		\$	
2220	24186EC		BORE AND JACK PIPE-36 IN	155.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2230	24814EC		PIPELINE INSPECTION	14,148.00	LF		\$	

Section: 0004 - BRIDGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2240	03299		ARMORED EDGE FOR CONCRETE	256.00	LF		\$	
2250	08472		EXPANSION DAM-4 IN NEOPRENE	256.00	LF		\$	

Section: 0005 - BRIDGE- CULVERT - WESTPORT ROAD RAMP - DWG. 28945

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2260	02403		REMOVE CONCRETE MASONRY	13.00	CUYD		\$	
2270	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2280	08100		CONCRETE-CLASS A	25.30	CUYD		\$	
2290	08150		STEEL REINFORCEMENT	2,523.00	LB		\$	

Section: 0006 - BRIDGE- CULVERT - I-71 NB RAMP - DWG. 28946

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2300	02403		REMOVE CONCRETE MASONRY	12.00	CUYD		\$	
2310	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2320	08100		CONCRETE-CLASS A	26.40	CUYD		\$	
2330	08150		STEEL REINFORCEMENT	2,095.00	LB		\$	
2340	23929EC	AA1	LIGHTWEIGHT AGGREGATE FILL	156.00	CUYD		\$	
2350	23931EC	AA2	EPS FOAM BLOCK	2,524.00	CUFT		\$	
2360	26145EC	AA2	4 IN CONCRETE LOAD DISTRIBUTOR	94.00	SQYD		\$	

Section: 0007 - BRIDGE- CULVERT - I-264 - DWG. 28947

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2370	02223		GRANULAR EMBANKMENT	70.00	CUYD		\$	
2380	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2390	08100		CONCRETE-CLASS A	50.10	CUYD		\$	
2400	08150		STEEL REINFORCEMENT	4,590.00	LB		\$	

Section: 0008 - BRIDGE- CULVERT - I-71 SB - DWG. 28948

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2410	02223		GRANULAR EMBANKMENT	146.00	CUYD		\$	
2420	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2430	08100		CONCRETE-CLASS A	38.10	CUYD		\$	
2440	08150		STEEL REINFORCEMENT	4,580.00	LB		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2450	23931EC		EPS FOAM BLOCK	36,830.00	CUFT		\$	

Section: 0009 - BRIDGE - I-71 SB - DWG. 28949

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2460	02231		STRUCTURE GRANULAR BACKFILL	1,000.00	CUYD		\$	
2470	03299		ARMORED EDGE FOR CONCRETE	137.40	LF		\$	
2480	08002		STRUCTURE EXCAV-SOLID ROCK	395.00	CUYD		\$	
2490	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2500	08100		CONCRETE-CLASS A	201.00	CUYD		\$	
2510	08104		CONCRETE-CLASS AA	589.90	CUYD		\$	
2520	08130		MECHANICAL REINF COUPLER #5	24.00	EACH		\$	
2530	08134		MECHANICAL REINF COUPLER #9	32.00	EACH		\$	
2540	08140		MECHANICAL REINF COUPLER #5 EPOXY COATED	588.00	EACH		\$	
2550	08150		STEEL REINFORCEMENT	37,740.00	LB		\$	
2560	08151		STEEL REINFORCEMENT-EPOXY COATED	85,760.00	LB		\$	
2570	08160		STRUCTURAL STEEL 782,400 LBS	1.00	LS		\$	
2580	08170		SHEAR CONNECTORS 3720 EACH	1.00	LS		\$	
2590	20745ED		ROCK SOUNDINGS	128.00	LF		\$	
2600	20746ED		ROCK CORINGS	302.00	LF		\$	
2610	23378EC		CONCRETE SEALING	23,320.00	SQFT		\$	
2620	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN	394.80	LF		\$	
2630	26172EC		DRILLED SHAFT-36 IN SOLID ROCK	112.00	LF		\$	
2640	26173EC		DRILLED SHAFT-42 IN COMMON	80.00	LF		\$	

Section: 0010 - BRIDGE - US 42 - DWG. 28950

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2650	02231		STRUCTURE GRANULAR BACKFILL	11,000.00	CUYD		\$	
2660	02998		MASONRY COATING	2,808.00	SQYD		\$	
2670	03299		ARMORED EDGE FOR CONCRETE	2,120.00	LF		\$	
2680	08002		STRUCTURE EXCAV-SOLID ROCK	127.00	CUYD		\$	
2690	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2700	08100		CONCRETE-CLASS A	1,709.70	CUYD		\$	
2710	08104		CONCRETE-CLASS AA	1,064.30	CUYD		\$	
2720	08140		MECHANICAL REINF COUPLER #5 EPOXY COATED	86.00	EACH		\$	
2730	08141		MECHANICAL REINF COUPLER #6 EPOXY COATED	86.00	EACH		\$	
2740	08151		STEEL REINFORCEMENT-EPOXY COATED	790,687.00	LB		\$	
2750	08160		STRUCTURAL STEEL 29,904 LBS	1.00	LS		\$	
2760	08170		SHEAR CONNECTORS 804 EACH	1.00	LS		\$	
2770	08500		APPROACH SLAB	1,392.00	SQYD		\$	
2780	08672		PRECAST PC BOX BEAM SB42	2,192.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2790	08711		BRIDGE CHAIN LINK FENCE-6 FT	216.00	LF		\$	
2800	20745ED		ROCK SOUNDINGS	174.00	LF		\$	
2810	20746ED		ROCK CORINGS	1,705.00	LF		\$	
2820	23000EX		DRILLED SHAFT-66 IN (ROCK)	682.00	LF		\$	
2830	23158ES505		DETECTABLE WARNINGS	204.00	SQFT		\$	
2840	23249EC		DRILLED SHAFT-72 IN COMMON	70.00	LF		\$	
2850	23378EC		CONCRETE SEALING	26,613.00	SQFT		\$	
2860	24405EC		MECHANICAL REINF COUPLER #8-EPOXY COATED	3.00	EACH		\$	
2870	25027ED		RAIL SYSTEM SINGLE SLOPE - 36 IN	356.00	LF		\$	
2880	25029ED		STEEL HANDRAIL	356.00	LF		\$	
2890	25121EC		MECHANICAL REINF COUPLER #10-EPOXY COAT	52.00	EACH		\$	

Section: 0011 - BRIDGE- SOUND BARRIER WALLS - DWG. 28951

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2900	21590EN		SOUND BARRIER WALL	258,478.00	SQFT		\$	
2910	23583EC		DRILLED SHAFT-48 IN-COMMON	10.00	LF		\$	
2920	23584EC		DRILLED SHAFT-42 IN-ROCK	6.00	LF		\$	
2930	26172EC		DRILLED SHAFT-36 IN SOLID ROCK	2,268.00	LF		\$	
2940	26173EC		DRILLED SHAFT-42 IN COMMON	3,401.00	LF		\$	

Section: 0012 - SIGNING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2950	01986		DELINEATOR FOR BARRIER WALL-B/Y	50.00	EACH		\$	
2960	04886		MESSENGER-15400 LB	210.00	LF		\$	
2970	04932		INSTALL STEEL STRAIN POLE	4.00	EACH		\$	
2980	06405		SBM ALUMINUM PANEL SIGNS	11,360.00	SQFT		\$	
2990	06406		SBM ALUM SHEET SIGNS .080 IN	184.00	SQFT		\$	
3000	06407		SBM ALUM SHEET SIGNS .125 IN	1,614.00	SQFT		\$	
3010	06410		STEEL POST TYPE 1	1,065.00	LF		\$	
3020	06411		STEEL POST TYPE 2	2,640.00	LF		\$	
3030	06412		STEEL POST MILE MARKERS	12.00	EACH		\$	
3040	06448		SIGN BRIDGE ATTACHMENT BRACKET	4.00	EACH		\$	
3050	06449		REM OVERHEAD SIGN SUPPORT STR	8.00	EACH		\$	
3060	06450		REM OVERHEAD STRUC CONC BASE	16.00	EACH		\$	
3070	06451		REMOVE SIGN SUPPORT BEAM	105.00	EACH		\$	
3080	06472		INSTALL SPAN MOUNTED SIGN	3.00	EACH		\$	
3090	06478		OSS GALV STEEL 75 FT TRUSS	1.00	EACH		\$	
3100	06480		OSS GALV STEEL 85 FT TRUSS	4.00	EACH		\$	
3110	06481		OSS GALV STEEL 90 FT TRUSS	4.00	EACH		\$	
3120	06482		OSS GALV STEEL 95 FT TRUSS	1.00	EACH		\$	
3130	06490		CLASS A CONCRETE FOR SIGNS	650.00	CUYD		\$	
3140	06491		STEEL REINFORCEMENT FOR SIGNS	15,000.00	LB		\$	
3150	06495		OSS GALV STEEL 125 FT TRUSS	1.00	EACH		\$	
3160	06498		OSS GALV STEEL 140 FT TRUSS	1.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3170	06499		OSS GALV STEEL 160 FT TRUSS	1.00	EACH		\$	
3180	20419ND		ROADWAY CROSS SECTION	15.00	EACH		\$	
3190	23157EN		TRAFFIC SIGNAL POLE BASE	16.00	CUYD		\$	
3200	23639ED		REM SIGN BRIDGE MOUNT ATTACHMENT	1.00	EACH		\$	
3210	24631EC		BARCODE SIGN INVENTORY	182.00	EACH		\$	

Section: 0013 - SIGNALIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3220	04793		CONDUIT-1 1/4 IN	80.00	LF		\$	
3230	04795		CONDUIT-2 IN	40.00	LF		\$	
3240	04811		ELECTRICAL JUNCTION BOX TYPE B	6.00	EACH		\$	
3250	04820		TRENCHING AND BACKFILLING	716.00	LF		\$	
3260	04829		PIEZOELECTRIC SENSOR	40.00	EACH		\$	
3270	04830		LOOP WIRE	8,392.00	LF		\$	
3280	04845		CABLE-NO. 14/7C	11,743.00	LF		\$	
3290	04886		MESSENGER-15400 LB	3,882.00	LF		\$	
3300	04895		LOOP SAW SLOT AND FILL	2,626.00	LF		\$	
3310	04932		INSTALL STEEL STRAIN POLE	16.00	EACH		\$	
3320	04953		TEMP RELOCATION OF SIGNAL HEAD	85.00	EACH		\$	
3330	04960		REMOVE AND REPLACE SIDEWALK	10.00	SQYD		\$	
3340	06406		SBM ALUM SHEET SIGNS .080 IN	77.00	SQFT		\$	
3350	06472		INSTALL SPAN MOUNTED SIGN	20.00	EACH		\$	
3360	20093NS835		INSTALL PEDESTRIAN HEAD-LED	28.00	EACH		\$	
3370	20188NS835		INSTALL LED SIGNAL-3 SECTION	37.00	EACH		\$	
3380	20189NS835		INSTALL LED SIGNAL-5 SECTION	3.00	EACH		\$	
3390	20266ES835		INSTALL LED SIGNAL- 4 SECTION	9.00	EACH		\$	
3400	20359NN		GALVANIZED STEEL CABINET	6.00	EACH		\$	
3410	20360ES818		WOOD POST	12.00	EACH		\$	
3420	20390NS835		INSTALL COORDINATING UNIT	4.00	EACH		\$	
3430	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	7.00	EACH		\$	
3440	21743NN		INSTALL PEDESTRIAN DETECTOR	28.00	EACH		\$	
3450	23157EN		TRAFFIC SIGNAL POLE BASE	71.00	CUYD		\$	
3460	23222EC		INSTALL SIGNAL PEDESTAL	20.00	EACH		\$	
3470	23235EC		INSTALL PEDESTAL POST	1.00	EACH		\$	
3480	24900EC		PVC CONDUIT-1 1/4 IN-SCHEDULE 80	276.00	LF		\$	
3490	24901EC		PVC CONDUIT-2 IN-SCHEDULE 80	635.00	LF		\$	
3500	24908EC		INSTALL SIGNAL CONTROLLER-TY ATC	4.00	EACH		\$	
3510	24955ED		REMOVE SIGNAL EQUIPMENT	5.00	EACH		\$	
3520	26119EC		INSTALL RADAR PRESENCE DETECTOR TYPE A	15.00	EACH		\$	
3530	26120EC		INSTALL RADAR ADVANCE DETECTOR TYPE B	1.00	EACH		\$	

Section: 0014 - LIGHTING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3540	04700		POLE 30 FT MTG HT	12.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3550	04701		POLE 40 FT MTG HT	64.00	EACH		\$	
3560	04721		BRACKET 6 FT	1.00	EACH		\$	
3570	04722		BRACKET 8 FT	9.00	EACH		\$	
3580	04723		BRACKET 10 FT	6.00	EACH		\$	
3590	04724		BRACKET 12 FT	15.00	EACH		\$	
3600	04725		BRACKET 15 FT	13.00	EACH		\$	
3610	04740		POLE BASE	42.00	EACH		\$	
3620	04741		POLE BASE IN MEDIAN WALL	34.00	EACH		\$	
3630	04750		TRANSFORMER BASE	42.00	EACH		\$	
3640	04780		FUSED CONNECTOR KIT	168.00	EACH		\$	
3650	04795		CONDUIT-2 IN	1,800.00	LF		\$	
3660	04820		TRENCHING AND BACKFILLING	7,800.00	LF		\$	
3670	04832		WIRE-NO. 12	10,500.00	LF		\$	
3680	04833		WIRE-NO. 8	26,700.00	LF		\$	
3690	04834		WIRE-NO. 6	26,200.00	LF		\$	
3700	04835		WIRE-NO. 4	4,600.00	LF		\$	
3710	04940		REMOVE LIGHTING	1.00	LS		\$	
3720	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	17.00	EACH		\$	
3730	20392NS835		ELECTRICAL JUNCTION BOX TYPE C	4.00	EACH		\$	
3740	20410ED		MAINTAIN LIGHTING	1.00	LS		\$	
3750	21543EN		BORE AND JACK CONDUIT	1,300.00	LF		\$	
3760	24589ED		LED LUMINAIRE	107.00	EACH		\$	
3770	24900EC		PVC CONDUIT-1 1/4 IN-SCHEDULE 80	7,000.00	LF		\$	
3780	24901EC		PVC CONDUIT-2 IN-SCHEDULE 80	1,400.00	LF		\$	
3790	24902EC		PVC CONDUIT-3 IN-SCHEDULE 80	100.00	LF		\$	

Section: 0015 - WATERLINE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3800	00003		CRUSHED STONE BASE	35.00	TON		\$	
3810	00100		ASPHALT SEAL AGGREGATE	.09	TON		\$	
3820	00103		ASPHALT SEAL COAT	.02	TON		\$	
3830	00212		CL2 ASPH BASE 1.00D PG64-22	17.00	TON		\$	
3840	00301		CL2 ASPH SURF 0.38D PG64-22	19.00	TON		\$	
3850	02091		REMOVE PAVEMENT	309.00	SQYD		\$	
3860	02223		GRANULAR EMBANKMENT	510.00	CUYD		\$	
3870	02585		EDGE KEY	40.00	LF		\$	
3880	02602		FABRIC-GEOTEXTILE CLASS 1	625.00	SQYD		\$	
3890	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
3900	02677		ASPHALT PAVE MILLING & TEXTURING	10.00	TON		\$	
3910	02690		SAFELOADING	5.00	CUYD		\$	
3920	02701		TEMP SILT FENCE	2,700.00	LF		\$	
3930	02704		SILT TRAP TYPE B	10.00	EACH		\$	
3940	02705		SILT TRAP TYPE C	5.00	EACH		\$	
3950	02707		CLEAN SILT TRAP TYPE B	10.00	EACH		\$	
3960	02708		CLEAN SILT TRAP TYPE C	5.00	EACH		\$	
3970	02720		SIDEWALK-4 IN CONCRETE	10.00	SQYD		\$	
3980	02721		REMOVE CONCRETE SIDEWALK	10.00	SQYD		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3990	05952		TEMP MULCH	2,750.00	SQYD		\$	
4000	05953		TEMP SEEDING AND PROTECTION	2,750.00	SQYD		\$	
4010	05985		SEEDING AND PROTECTION	6,350.00	SQYD		\$	
4020	05990		SODDING	2,158.00	SQYD		\$	
4030	08100		CONCRETE-CLASS A	2.50	CUYD		\$	
4040	14009		W ENCASEMENT STEEL BORED RANGE 4	180.00	LF		\$	
4050	14010		W ENCASEMENT STEEL BORED RANGE 5	355.00	LF		\$	
4060	14016		W ENCASEMENT STEEL OPEN CUT RANGE 5	135.00	LF		\$	
4070	14019		W FIRE HYDRANT ASSEMBLY	8.00	EACH		\$	
4080	14025		W METER 1 INCH	7.00	EACH		\$	
4090	14026		W METER 1-1/2 INCH	2.00	EACH		\$	
4100	14027		W METER 2 INCH	1.00	EACH		\$	
4110	14028		W METER 3/4 INCH	9.00	EACH		\$	
4120	14035		W PIPE DUCTILE IRON 04 INCH	160.00	LF		\$	
4130	14036		W PIPE DUCTILE IRON 06 INCH	400.00	LF		\$	
4140	14037		W PIPE DUCTILE IRON 08 INCH	140.00	LF		\$	
4150	14039		W PIPE DUCTILE IRON 12 INCH	3,905.00	LF		\$	
4160	14048		W PIPE DCTL IRON RSTRND JOINT 08 IN	260.00	LF		\$	
4170	14050		W PIPE DCTL IRON RSTRND JOINT 12 IN	1,830.00	LF		\$	
4180	14074		W PLUG EXISTING MAIN	29.00	EACH		\$	
4190	14077		W SERV PE/PLST LONG SIDE 1 IN	1.00	EACH		\$	
4200	14078		W SERV PE/PLST LONG SIDE 1-1/2 IN	1.00	EACH		\$	
4210	14080		W SERV PE/PLST LONG SIDE 3/4 IN	6.00	EACH		\$	
4220	14082		W SERV PE/PLST SHORT SIDE 1 IN	6.00	EACH		\$	
4230	14083		W SERV PE/PLST SHORT SIDE 1-1/2 IN	1.00	EACH		\$	
4240	14084		W SERV PE/PLST SHORT SIDE 2 IN	1.00	EACH		\$	
4250	14085		W SERV PE/PLST SHORT SIDE 3/4 IN	3.00	EACH		\$	
4260	14086		W SERVICE SPECIAL	21.00	EACH		\$	
4270	14094		W TIE-IN 06 INCH	6.00	EACH		\$	
4280	14095		W TIE-IN 08 INCH	4.00	EACH		\$	
4290	14097		W TIE-IN 12 INCH	9.00	EACH		\$	
4300	14104		W VALVE 04 INCH	1.00	EACH		\$	
4310	14105		W VALVE 06 INCH	3.00	EACH		\$	
4320	14106		W VALVE 08 INCH	6.00	EACH		\$	
4330	14108		W VALVE 12 INCH	28.00	EACH		\$	
4340	14182		W METER 5/8 INCH	14.00	EACH		\$	
4350	20550ND		SAWCUT PAVEMENT	139.00	LF		\$	
4360	24970EC		ASPHALT MATERIAL FOR TACK NON-TRACKING	.09	TON		\$	

Section: 0016 - TRAINEES

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
4370	02742		TRAINEE PAYMENT REIMBURSEMENT GROUP 2, 3, 4 OPERATOR	1,400.00	HOURL		\$	
4380	02742		TRAINEE PAYMENT REIMBURSEMENT GROUP 2, 3, 4 OPERATOR	1,400.00	HOURL		\$	

Section: 0017 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
4390	02568		MOBILIZATION	1.00	LS		\$	
4400	02569		DEMOBILIZATION	1.00	LS		\$	