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SECRETARY

October 21, 2025

CALL NO. 201
CONTRACT ID NO. 251032
ADDENDUM # 1

Subject: Jefferson County, NHPP 0711(096)
Letting October 23, 2025

- (1) Added - Special Notes - Pages 1-26 of 26
- (2) Omit Special Note - Pages 35-38 of 245
- (3) Revised - Material Summary - Pages 171-178 of 245
- (4) Revised - Proposal Bid Items - Pages 236-245 of 245
- (5) Revised - Plan Sheets R2E and R2F

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in black ink that reads "Rachel Mills".

Rachel Mills, P.E.
Director
Division of Construction Procurement

RM:mr
Enclosures

SPECIAL NOTES FOR SOUND BARRIER WALLS

Project No. FD52 056-0071-000-003

I. DESCRIPTION

All work shall be performed in accordance with the Department's latest Standards and Supplemental Specifications and applicable Special Provisions and Standard and Sepia Drawings, except as specified in these notes or elsewhere in this proposal. Section references are to the Standard Specifications. This work shall consist of design of the sound barrier wall, foundation, and connections, construction plans for the foundation, shop drawing preparation, and construction of precast concrete sound barrier walls, including construction of the drilled shaft foundations, in reasonably close conformity with the lines and grades shown on the contract plans and the Contractor's approved plans.

All references to AASHTO are to the AASHTO LRFD Bridge Design Specifications for Highway Bridges, Current Edition with Interims.

II. DESIGN

A. General

Furnish plans for sound barrier walls and foundations designed by a Registered Professional engineer licensed to practice in the Commonwealth of Kentucky. Design according to the AASHTO LRFD Bridge Design Specifications, the KYTC Structural Design Manual, and the Contract plans and documents.

The Contractor's design shall comply with all restrictions imposed by the site conditions and the proposal notes and plan sheets such as drainage, accommodation of existing and proposed utilities, limitations on dimensions or sound barrier wall location, fire hydrant access, and other conditions noted or found in the field. The top and bottom of the sound barrier wall elevation throughout shall be as shown on the contract plans.

B. Site Conditions

Be advised that Section 102.07 of the Specifications applies to this project. It shall be distinctly understood that any references in the contract plans and other contract documents to rock, rock disintegration zone, earth, or any other subsurface material whether in numbers, words, letters, or lines is solely for the Department's information. The Bidder draws his own conclusions as to the field conditions to be encountered.

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Tops of drilled shafts are to be a minimum of 6 inches below finished grade.

C. Utilities

Take into consideration existing and proposed utilities and the Department's electrical service for interchange lighting in the vicinity of the sound barrier walls when developing sound barrier wall details. Show on the Contractor's plans and shop drawings additional work or materials necessary to construct the sound barrier wall without disturbing the utilities. The Contractor shall contact the KYTC District 5 Traffic Office ten business days prior to beginning work to mark the existing roadway lighting conduits. Repair or replace features damaged during construction in like kind materials and design at no additional cost to the Department.

D. Contractor Submittals

Submit design calculations and plans to the Engineer for review within thirty calendar days of the "Notice to Begin Work". Submit adequate documentation of proprietary designs and/or products to the Engineer for review.

Obtain sufficient subsurface information in order to design the drilled shaft foundations for axial and lateral loading conditions. Show field measured top of rock elevations, as appropriate, on the Contractor's plans.

Submit electronic files in PDF format of calculations and plans for the sound barrier wall to the Engineer for approval. Design calculations shall include the design for each component of the wall and the wall as a unit. Include the design for the horizontal connection between panels. Include the design of the connection to the existing barrier wall where shown on the plans. Include drilled shaft foundation design for axial and lateral loading. Show on the plans the drilled shaft foundations. One set of design calculations and plans, with any corrections noted will be returned to the Contractor. Each time corrections are made, three copies of the revised calculation sheets and/or five copies of the revised plan sheets shall be submitted.

The Department will review the design calculations and plans for general conformance with AASHTO, this Special Note, and the Contract Documents. The design calculations, plans, details and dimensions may not be completely checked by the Department. The Contractor shall be responsible for the accuracy of his design calculations and for compatibility with the contract plans. The Department's review will not relieve the Contractor of responsibility for the accuracy and completeness of the design calculations and plans.

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Upon final approval by the Department, furnish electronic files in PDF format of the Contractor's approved plans to the Engineer. The Department will provide copies of the approved plans to the Contractor.

Do not produce shop drawings before the Department's approval of the design calculations and Contractor's plans is completed. The Contractor's wall design engineer providing the design calculations and plans shall be responsible for shop drawing review. The Contractor's wall design engineer shall provide the Engineer electronic files in PDF format for the wall and provide the Department with a statement of assurance that the shop drawings are accurate and that they satisfy the project requirements. Each sheet of the shop drawings shall be dated, sealed, and signed by the wall design engineer providing the Contractor's design for the wall. Place the Drawing Number on the lower right-hand side of all shop drawings.

Do not order materials or begin fabrication or construction before the Department's review of the shop drawings is completed. The Contractor may request permission from the Engineer to begin foundation construction at his own risk. Written permission from the engineer is required.

After acceptance by the Department, submit requests for changes to the design calculations, Contractor's approved plans and shop drawings to the Engineer. Obtain written acceptance from the Engineer before incorporating any of the requested changes into the work.

Allow thirty working days for the Department's review of each submission of the design calculations, Contractor's plans, and shop drawings for the sound barrier wall. The thirty-day period begins when the design calculations, Contractor's plans, or shop drawings are received by the Engineer. Additional time required by the Department to review re-submissions shall not be cause for extending the specified completion date. Provide additional re-submissions as requested at no additional cost to the Department and with no extension of the specified completion date.

III. SOUND BARRIER WALLS

Precast Concrete Walls

Where shown on the plans, design a free standing sound barrier wall finished on one side. The maximum precast panel length shall be 40 feet. Design all sound barrier walls for the same appearance and materials. Design drilled shafts for foundations; other type foundation designs will not be accepted.

Precast Concrete panels may be pilaster (post), and panel design or connected panels.

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Precast concrete panels, pilasters, and other precast elements shall comply with Section 605 of the Standard Specifications. Precast concrete shall be Class D with a minimum 28-day compressive strength of 5000 p.s.i. All materials and reinforcement shall conform to the Department's Standard Specifications.

Precast panels, pilasters, and other precast elements may be prestressed. Prestress fabrication shall be in accordance with Section 605 of the Standard Specifications. Prestressing tendons may be either bar or strand. Prestressing bars shall conform to ASTM A722, 'High Strength Steel Bars for Prestressed Concrete'. Prestressing strands shall be seven wire strands conforming to ASTM A416, 'Low-Relaxation, Seven-Wire Steel Strand for Prestressed Concrete'.

Use drilled shafts as foundation. The Contractor's design should be in accordance to the Special Note for Drilled Shafts (11C) of the Standard Specifications. The Contractor's plans shall indicate whether or not permanent casings will be required. Drilled Shaft Common, Drilled Shaft Solid Rock, Rock Sounding, and Rock Coring will be incidental to the Sound Barrier Wall and will not be measured for separate payment.

Use preformed joint filler complying with AASHTO M153 for Types I, II, or III or AASHTO M213.

Provide positive means of alignment between panels. Use tongue and groove joints with a minimum protrusion of 1".

Seal all joints between panels and between pilasters and panels with silicone sealer to prevent sound leaks. Obtain the Engineer's approval of the sealant before use. See notes for finish requirements below.

Step elevation changes at the top of the sound barrier wall except for end panels. Construct the top of sound barrier level between steps. Make steps only at the pilasters. Construct the top of the sound barrier wall at the elevation of the top of the sound barrier shown on the contract plans. The top of the pilaster elevation should match the elevation of the highest adjacent panel.

Construct reinforced concrete pilasters. Cast using metal forms. Construct pilasters that protrude a maximum of twelve inches from the front face of the precast panels. Connect pilasters to drilled shaft foundations above the finish grade. Use bolted galvanized steel for the connections; the Engineer will not allow or permit field welding.

Obtain the Engineer's approval of joint materials and details before use.

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Finish Requirements:

Precast Panels – Provide an architectural formed finish representing an ashlar stone form lined surface on one side of the wall as approved by the Resident Engineer.

Pilasters - Pilasters shall be concrete and shall be cast using metal forms.

Color – All concrete surfaces of the precast panels and pilasters shall be stained as approved by the Resident Engineer, using outdoor grade coloring agents applied according to the manufacturer's instructions. Provide a uniform color throughout the entire length of the sound barrier wall.

Joints – Horizontal joints are to be filled with silicone sealer and stained to match the color of the wall as approved by the Resident Engineer.

Provide two samples of the precast concrete panels, a minimum of four feet by eight feet, cast using same form liners as proposed for production for the Department's approval. Retain one sample at the casting yard for a standard of comparison for the production panels. Deliver the second sample to the project site. Casting and delivering the samples to the job site will not be measured for separate payment, but shall be incidental to Sound Barrier Wall.

IV. MATERIALS APPROVAL

All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be 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, obtain acceptance of materials from the Engineer before use.

V. CONSTRUCTION

Perform site preparation necessary to construct the sound barrier wall in accordance with the Standard Specifications, contract plans, Contractor's approved plans and notes in the proposal.

Construct sound barrier walls in accordance with the contract plans, the Contractor's approved plans, and the approved shop drawings. Construct vertical and horizontal joints so that the sound barrier wall is structurally sound and with no sound leaks. Construct the face of the completed sound barrier wall without deviation from the vertical of more than ½ inch in ten feet and with horizontal alignment conforming to the neat line shown on the contract plans.

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Alternate drilled shaft foundation designs are permitted if solid rock is encountered above the solid rock line shown on the Contractor's approved plans; however, contact the Engineer before revising the drilled shaft foundations. Revised calculations and Contractor's plans will be required. Obtain the Engineer's acceptance of revised drilled shaft foundation designs before constructing. Construct the tops of drilled shaft foundations a minimum of six inches below finish grade on both sides of the sound barrier wall. There will be no deduction in area to be measured for payment when drilled shaft foundations protrude into the sound barrier bottom pay limit.

Revising the drilled shaft foundation designs shall not be cause for an extension in contract time or change the contract price.

Transport, store, handle, and erect precast units in accordance with Section 605 of the Standard Specifications.

Protect all masonry materials from the weather from the time of manufacture until they are in the finished sound barrier walls.

Construction of the ditches shown on the plans will not be measured for payment but shall be incidental to Site Preparation.

After constructing the wall, clean all sound barrier wall surfaces. Clean from the top of the wall to twelve inches below finished grade on both sides. Use a cleaner selected by the Contractor and approved by the Engineer.

VI. MEASUREMENT

SOUND BARRIER WALL

Sound Barrier Walls will be measured in square feet of surface area in a vertical plane between the vertical and horizontal limits, top of wall elevations, and lateral limits shown on the Contractor's approved plans or approved changes; however, tops of footings may be above the minimum depth of burial with no reduction in area to be measured.

Any area of the sound barrier wall outside the approved vertical and horizontal plan limits as shown on the approved plans or changes approved or directed by the Engineer will not be measured for payment. Approved adjustments in the area will be measured in square feet and the final quantity will be increased or decreased as applicable.

The Department will not measure caps, copings, joint sealants, void fill material, weep holes, connectors, trim, surface finish, concrete stain, cleaning, sample panels, and incidental items that are a normal part of the sound barrier wall construction, but shall be incidental to Sound Barrier Wall.

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FOUNDATION PREPARATION

Contrary to Section 603.04.03, **Foundation Preparation** will be measured as lump sum. Structure Excavation Common, Structure Excavation Solid Rock, Structure Excavation Unclassified, Foundation Undercut, Drilled Shaft Common, Drilled Shaft Solid Rock, Rock Sounding, and Rock Coring for removal of unsuitable foundation materials will not be measured for separate payment but shall be incidental to **Foundation Preparation or Site Preparation**.

SITE PREPARATION

See the Special Notes for Sound Barrier Wall Construction.

VII. PAYMENT

Payment at the contract unit price per square foot shall be full complete compensation for all labor, materials, equipment, and incidentals to design and construction of the sound barrier walls.

<u>CODE</u>	<u>PAY ITEM</u>	<u>PAY UNIT</u>
21590EN	Sound Barrier Wall	Square Feet
08003	Foundation Preparation	Lump Sum
20257NC	Site Preparation	Lump Sum

Special Note for Temporary Mechanically Stabilized Earth (MSE) Retaining Wall I-71; Jefferson County Kentucky Project Item #5-48.10

1. General

1.1 Scope

This specification covers the design, materials, review process, and construction of Temporary Mechanically Stabilized Earth (MSE) retaining walls using geosynthetic reinforcement, uniaxial geogrids and wire-form facing systems, for applications such as road widening, bridge abutments, or staged construction. The system shall be designed to provide stability for a temporary period, up to 3 years, and may be removed or left in place post-construction. See the schematic attached to this note for additional project specific information.

1.2 References

- FHWA-NHI-10-024 (GEC 11): Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes (LRFD Procedures)
- ASTM D4595: Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
- ASTM D6637: Standard Test Method for Determining Tensile Properties of Geogrids
- AASHTO M 288: Standard Specification for Geotextile Specification for Highway Applications
- Current KYTC Standard Specifications

1.3 Submittals

- Submit shop drawings, including wall layout, geogrid placement, and facing details.
- Provide manufacturers product data for geogrids, geotextiles, and connectors.
- Submit design calculations prepared by a licensed Professional Engineer, conforming to FHWA LRFD procedures.
- Provide certificates of compliance for all materials.

1.4 Work and Experience Requirements

The work under this Special Note consists of designing, furnishing all materials and constructing Temporary Mechanically Stabilized Earth (MSE) retaining walls in accordance with the current Standard Specifications, this Special Note, in compliance with the lines and grades, dimensions and details shown on the project plans, and as directed by the Engineer.

The Contractor shall provide the Wall Designer with a complete set of project plans and specifications and shall ensure that the wall design is compatible with all other project features that can impact the design and construction of the wall. The following terms are used in this specification for identification of various entities for which the Contractor shall be fully responsible:

Term	Entity
Wall Manufacturer	The entity contractually retained by the contractor to provide materials and construction services for an accepted Temporary MSE wall system as identified in Section 2.
Wall Designer	The entity contractually retained by the contractor to provide design of a Temporary MSE wall system as identified in Section 3. The wall designer may be a representative of the wall manufacturer.
Department Engineer /	Refers to the Kentucky Transportation Cabinet representative and/or a designated consultant acting on behalf of KYTC.

The Wall Designer and Wall Manufacturer shall meet the following minimum qualifications:

- The selected Temporary Mechanically Stabilized Earth (MSE) retaining wall system and resumes of the Wall Manufacturer’s Technical Field Representative and Wall Designer shall be reviewed and approved by the Department’s District personnel, Division of Materials, and Division of Structural Design Geotechnical Services Branch.
- The Wall Manufacturer shall provide a technical field representative to provide assistance to the Contractor. The technical representative shall have a minimum of 3 years of experience specific to the installation of the Wall Manufacturer’s system. The technical field representative shall be on site for a minimum of 2 days at the start of wall construction to ensure the Wall Manufacturer’s required construction procedures are properly implemented.
- The Wall Designer shall have the operational capacity and necessary experience to provide expert support to the Contractor on a timely basis and meet the following requirements:
 - At least 3 years of experience in the design of Temporary Mechanically Stabilized Earth (MSE) retaining wall employed by a firm that has designed at least 500,000 square feet of MSE retaining walls (can include permanent applications).
 - Past documented experience in the design of at least 3 projects of a similar scope and magnitude to the proposed Temporary Mechanically Stabilized Earth (MSE) retaining wall that have been constructed successfully.
- The Wall Designer will be required to play an active role in the construction of the wall and be available to answer any questions that may arise during construction.
- All calculations and Temporary Mechanically Stabilized Earth (MSE) retaining wall construction plans shall be dated sealed and signed by a registered professional engineer licensed to practice in Kentucky and submitted through the Engineer for routing to the

Department's District personnel, Division of Materials, and Division of Structural Design Geotechnical Services Branch for review and approval prior to construction. Allow 10 workdays for review.

2. Materials

2.1 Geogrid Reinforcement

- Geogrid reinforcement shall be uniaxial, high-density polyethylene (HDPE) or equivalent polymer, resistant to deformation under sustained tensile loads, as per ASTM D6637.
- Minimum tensile strength: 3,400 pounds per foot in the machine direction.
- Open aperture structure to interlock with backfill, manufactured from durable polymer resins with a design life of at least 120 years in non-aggressive soil environments.
- Products shall meet specifications of the Wall Manufacturer and all performance criteria.
- Use of biaxial, high-density polyethylene (HDPE) or equivalent polymer, resistant to deformation under sustained tensile loads, as per ASTM D6637 will be considered in lieu of uniaxial geogrid based on application, Wall Manufacturer recommendations, and Wall Designer analysis.

2.2 Facing System

- Facing shall consist of steel mesh panels with geotextile/geogrid liner, designed for temporary (36 month) applications.
- Geotextile/geogrid liner shall consist of a geotextile fabric meeting AASHTO M 288 Class 1 requirements for filtration and durability and a biaxial geogrid consisting of high-density polyethylene (HDPE) or equivalent polymer, resistant to deformation under sustained bidirectional tensile loads (ultimate strength: 850 pounds per foot machine direction and 1300 pounds per foot cross-machine direction), as per ASTM D6637.
- Steel mesh shall be designed to resist construction loads without external propping and be designed to last the Temporary Mechanically Stabilized Earth (MSE) retaining wall's full 36-month design life without performance loss due to degradation.

2.3 Connectors

- Use high-strength polymer or mechanical connectors to link geogrids to steel mesh facing, ensuring no loss of design strength during service life.
- Connectors shall provide full-strength connection, resistant to corrosion and chemical degradation.

2.4 Reinforced Fill Material

- Electrochemical properties: pH between 5 and 10, resistivity $> 3000 \Omega \text{ cm}$.
- Reinforced fill shall be granular and free draining.
- Electrochemical properties: pH between 5 and 10, resistivity $> 3000 \Omega \text{ cm}$.

- Reinforced Fill shall meet the following gradation requirements per AASHTO T 27:

REINFORCED FILL GRADATION REQUIREMENTS	
Sieve Size	Percent Passing
1 inch	100
3/4 inch	80 - 100
3/8 inch	20 - 80
No. 4	0 - 30
No. 200	0 - 10
Sizes No. 67, 68, 710 and 78 in the Department’s Standard Specifications fall within these gradation limits. Sizes No. 57 and 610 may fall within these limits, depending on specific gradation used.	

2.5 Retained Backfill

- Retained backfill shall consist of “Gradation Size No. 2” meeting the material requirements of Section 805 in the current edition of the KYTC Standard Specifications. Approval of the material source by the Department is required prior to beginning placement.

3. Design Requirements

3.1 General

- Design shall conform to FHWA-NHI-10-024 (LRFD) guidelines for temporary walls.
- Wall height: Up to 20 feet unless otherwise specified.
- Service life: Up to 3 years, with a global factor of safety for stability of at least 1.3.
- Geotechnical Design Parameters:
 - Reinforced Fill: gamma = 120 pcf; phi =34 degrees; C = 0 psf
 - Retained Backfill and Granular fill adjacent to RCBC: gamma = 115 pcf; phi = 38 degrees; C = 0 psf

3.2 Loading Conditions

- Account for lateral earth pressure, surcharge loads (e.g., traffic or equipment), and seismic loading where applicable.
- Design for differential settlement up to 1 ft settlement over 50 ft length without loss of structural integrity.
- Design wall so that no lateral load is transferred to adjacent structures.

3.3 Software

- Use industry-standard software for MSE wall design, incorporating seismic, hydraulic, and live load complexities.

- Provide detailed calculations for internal stability including pullout and tensile capacity of geogrids.

4. Construction Requirements

4.1 Site Preparation

- Clear and grade the foundation area to remove organic material and loose soil.
- Ensure foundation soil has a minimum bearing capacity of 3,000 pounds per square foot.

4.2 Installation

- Protect and store materials according to Wall Manufacturer's Specifications.
- Place steel mesh facing units, braced internally, and line with facing material.
- Install geogrids at specified elevations, connected to facing using approved connectors before placement of the geogrid reinforcement.
- Geogrid reinforcement shall be placed normal to the wall face, unless otherwise shown on the plans or as directed by the Engineer. The first transverse bar of the primary geogrid reinforcement shall be placed at the welded wire form face.
- Reinforced wall fill material shall meet the requirements of Section 2.4 and be compacted using a static-weighted or vibratory roller. Sheeps-foot or grid-type rollers shall not be used for compacting material within the limits of the fill reinforcement. Compaction within three (3) feet of the wall facing shall be achieved by a lightweight mechanical tamper or roller system. Place and compact backfill in lifts not exceeding 8 inches. See section 4.3 for compaction quality control.
- Retained Backfill shall consist of "Gradation Size No. 2" meeting the requirements of Section 2.5 herein. The material shall be compacted in accordance with Section 206 of the current Standard Specifications except that the maximum loose lift thickness (prior to compaction) is 12 inches. See section 4.3 for compaction quality control.
- Ensure geogrids are taut and free of wrinkles during backfill placement.
- No heavy lifting equipment or external formwork is required.
- Any wall materials, which become damaged or disturbed during fill placement, shall be either removed and replaced, or corrected as directed by the Engineer, at the Contractor's expense. Any excessive misalignment or distortion of the wall facing due to placement of fill exceeding the limits of this Section shall be corrected at the Contractor's expense.

4.3 Quality Control

- Inspect geogrids and connectors for damage before installation.
- Ensure proper alignment of facing units, with deviations not exceeding 1 inch vertically or horizontally.

- Verify fill gradation and compaction through field tests according to KYTC Standard Specifications and the Compaction Criteria outlined below:

Compaction Criteria:

Trial fill sections shall be constructed with Department personnel present to determine appropriate criteria to achieve adequate compaction. The trial fill sections shall be performed as follows:

- One trial fill section is valid for up to 10,000 ft² of MSE wall area (e.g. 1 to 10,000 ft² of wall requires 1 trial fill section, 10,001 to 20,000 ft² requires 2, etc.) and for no more than one individual MSE wall.
- The minimum dimensions of the test pad shall be 15 ft. wide by 50 ft. long.
- The lift thickness shall not exceed eight (8) inches after compaction.
- Compaction shall be determined by using a level to measure the settlement of the trial section at a number of points after each pass (e.g., a minimum of 5 points measured at the center of a 1 ft square metal plate or other method approved by the Engineer).
- A thickness of approximately 2.5 feet shall be constructed to determine the appropriate number of passes, which will maximize compaction without excessively crushing the rock at the surface.
- The number of passes to achieve at least 80 percent of the maximum settlement will be required for production work.
- Only those methods used to establish compaction compliance in the trial fill section shall be used for production work.
- A material change, change in source, a difference of more than +/- 5.0 percent passing any sieve size, and/or change in the approved equipment shall require the contractor to conduct a new trial fill section and obtain re-approval by the Engineer of the minimum number of passes and rolling pattern.
- The Department reserves the right to use other test methods to evaluate the adequacy of the compaction criteria.
- The trial fill sections are incidental to the bid price for Temporary Mechanically Stabilized Earth (MSE) retaining wall.

Within three (3) feet of the wall facing, compaction criteria shall be determined using test pad sections with Department personnel present to determine appropriate criteria to achieve adequate compaction. The test pad sections shall be performed as follows:

- The minimum dimensions of the test pad shall be 5 ft. wide by 15 ft. long.
- The lift thickness shall not exceed eight (8) inches after compaction.
- Compaction shall be determined by using a level to measure the settlement of the test pad section at a number of points after each pass (e.g., a minimum of 3 points measured at the center of a 1 ft square plate or other method approved by the Engineer).
- A thickness of approximately 2.5 feet shall be constructed to determine the minimum number of passes of a lightweight mechanical tamper or roller system.
- The number of passes to achieve at least 80 percent of the maximum settlement will be required for production work.

- Only those methods used to establish compaction compliance in the test pad section shall be used for production work.
- A material change, change in source, a difference of more than +/- 5.0 percent passing any sieve size, and/or change in the approved equipment shall require the contractor to conduct a new test pad section.
- The test pad sections are incidental to the bid price for Temporary Mechanically Stabilized Earth (MSE) retaining wall.

5. Measurement and Payment

5.1 Measurement

- Measure Temporary Mechanically Stabilized Earth (MSE) retaining wall by square feet of completed wall face.

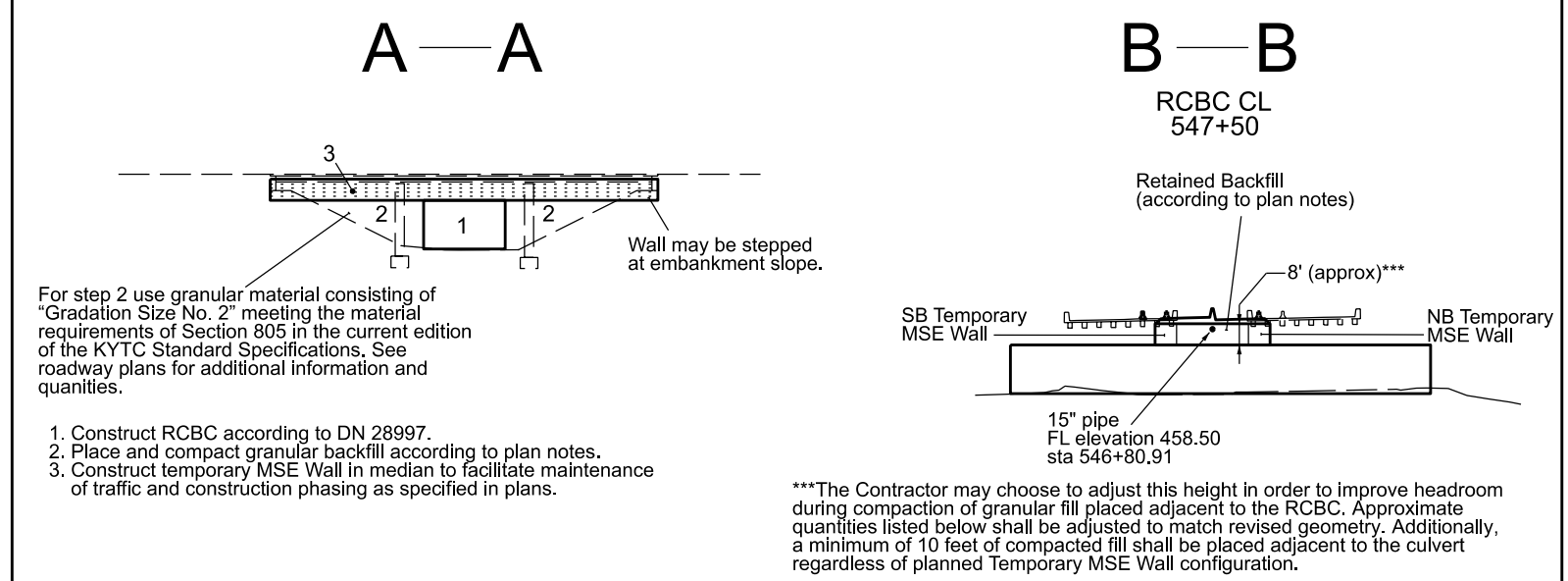
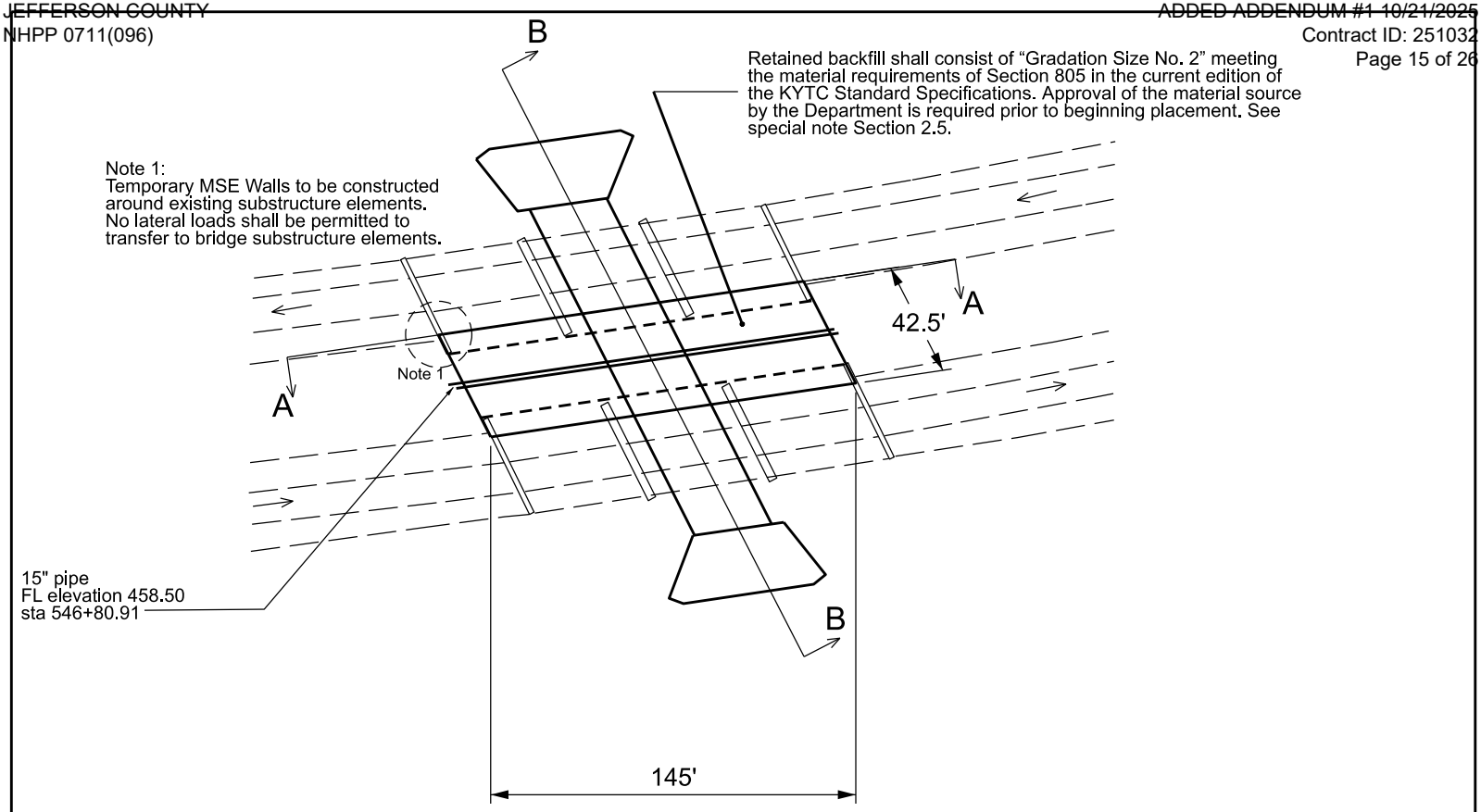
5.2 Payment

- Payment includes all materials, labor, and equipment for design, supply, and installation.
- No separate payment for foundation preparation or quality control testing.

<u>PAY ITEM</u>	<u>UNIT</u>	<u>CODE</u>
RETAINING WALL-REINF EARTH	Square Foot	08026

Notes

- *This specification assumes a typical Temporary Mechanically Stabilized Earth (MSE) retaining wall application. Project or site-specific conditions (e.g., soil properties, loading, or environmental constraints) may require adjustments.*
- *Consult with the Wall Manufacturer for design assistance or site-specific recommendations.*
- *Temporary walls may be left in place or dismantled post-construction, depending on project requirements.*
- *See attached schematic for additional details*



Estimated Quantities:

(1) "Gradation Size No. 2" for Retained Backfill* 26.5' x 145' x 8': 30740 ft^3 / 1139 yd^3

Total Estimated "Gradation Size No. 2": 1139 yd^3

(2) Temporary MSEWs 2 x 8' x 145' (reinforced fill 8'): 2320 sqft of wall face**

(8) Assume additional wall face due to obstructions (est. 20 linear feet per obstruction):
8 x 20' x 8' = 1280 sqft additional wall face

Total Estimated Wall Face: 3600 sqft

*Quantities of "Gradation Size No. 2" placed along either side and compacted adjacent to the RCBC are accounted for elsewhere.

**Depending on final design reinforcement length the number of temporary walls may actually be 6 due to the obstruction of bridge substructure elements which may divide the walls by passing completely through the reinforced zone. Additional square footage of wall face area has been added to account for this.

Note:
The Contractor may choose to utilize an alternate shoring method or wall system to the Temporary MSE Wall presented here. Any alternate system or approach will require design and analysis by a Professional Engineer licensed in Kentucky. Plans and calculations shall be provided to the Department for review and approval prior to acceptance.

SPECIAL NOTE FOR MICROPILES

1.0 DESCRIPTION. This work shall consist of constructing micropiles as shown on the Plans, accepted working drawings and approved shop drawings and as specified herein. The micropile specialty Contractor is responsible for furnishing all required working\shop drawings, materials, products, accessories, tools, equipment, services, transportation, labor and supervision, and manufacturing techniques required for installation and testing of micropiles and pile top attachments for this project. The micropile load capacities shall be verified by verification and proof load testing as required and must meet the test acceptance criteria specified herein. Section references herein are to the Department's current Standard Specifications for Road and Bridge Construction.

2.0 MATERIALS.

2.1 Admixtures for Grout. Conform to Section 802. Admixtures that control bleed, improve flowability, reduce water content, and retard set may be used in the grout, subject to the review and acceptance of the Engineer. Admixtures shall be compatible with the grout and mixed in accordance with the manufacturer's recommendations. Accelerators are not permitted.

2.2 Cement. Conform to Section 801. Use types I, II, III or V

2.3 Centralizers and Spacers. Centralizers and spacers shall be fabricated from schedule 40 PVC pipe or tube, steel, or material non-detrimental to the reinforcing steel. Wood shall not be used.

2.4 Epoxy Coating. Conform to subsection 811.10. Bend test requirements are waived. Bearing plates and nuts encased in the pile concrete footing need not be epoxy coated unless the footing reinforcement is epoxy coated.

2.5 Fine Aggregate. If sand / cement grout is used, sand shall conform to Section 804.

2.6 Grout. Neat cement or sand / cement mixture with a minimum 28-day compressive strength of 5,000 psi per AASHTO T106/ASTM C109, unless shown otherwise on the Plans.

2.7 Permanent Casing. Permanent steel casing / pipe shall have the diameter and at least minimum wall thickness shown on the Plans. The permanent steel casing / pipe:

- 1) shall meet the Tensile Requirements of ASTM A252, Grade 3, except the yield strength shall be a minimum of 80 ksi, unless shown otherwise on the plans.
- 2) may be new "Structural Grade" (a.k.a. "Mill Secondary") steel pipe meeting above but without Mill Certification, free from defects (dents, cracks, tears) and with two coupon tests per truckload delivered to the fabricator.

For permanent casing / pipe that will be welded for structural purposes, the following material conditions apply:

- 1) The carbon equivalency (CE) as defined in AWS D1.1, Section X15.1, shall not exceed 0.45, as demonstrated by mill certifications.
- 2) The sulfur content shall not exceed 0.05%, as demonstrated by mill certifications.

For permanent casing / pipe that will be shop or field welded, the following fabrication or construction conditions apply:

- 1) The steel pipe shall not be joined by welded lap splicing.
- 2) Welded seams and splices shall be complete penetration welds.
- 3) Partial penetration welds may be restored in conformance with AWS D1.1.

- 4) The proposed welding procedure certified by a welding specialist shall be submitted for approval.

Where allowed on the Plans, flush threaded casing joints shall be completely shouldered with no stripped threads.

2.8 Plates and Shapes. Structural steel plates and shapes for pile top attachments shall conform to ASTM A709/AASHTO M270, Grade 50.

2.9 Reinforcing Bars. Reinforcing steel shall be deformed bars in accordance with ASTM A615/AASHTO M31, Grade 60 or Grade 75 or ASTM A722/AASHTO M275, Grade 150, as shown on the plans. When a bearing plate and nut are required to be threaded onto the top end of reinforcing bars for the pile top to footing anchorage, the threading may be continuous spiral deformed ribbing provided by the bar deformations (e.g., Dywidag or Williams continuous threadbars) or may be cut into a reinforcing bar. If threads are cut into a reinforcing bar, the next larger bar number designation from that shown on the Plans shall be provided, at no additional cost.

Bar couplers, if required, shall develop the ultimate tensile strength of the bars without evidence of any failure.

2.10 Water. Conform to Section 803.

3.0 CONSTRUCTION.

3.1 Preconstruction.

3.1.1 Experience Requirements. The micropile Contractor shall be experienced in the construction and load testing of micropiles and have successfully constructed at least 5 projects in the last 5 years involving construction totaling at least 100 micropiles of similar size and capacity to those required in these plans and specifications.

The Contractor shall have previous micropile drilling and grouting experience in soil / rock similar to project conditions. The Contractor shall submit construction details, structural details and load test results for at least three previous successful micropile load tests from different projects of similar scope to this project.

The Contractor shall assign an Engineer to supervise the work with experience on at least 3 projects of similar scope to this project completed over the past 5 years. The

Contractor shall not use consultants or manufacturers' representatives to satisfy the supervising Engineer requirements of this section. The on-site foremen and drill rig operators shall also have experience on at least 3 projects over the past 5 years installing micropiles of equal or greater capacity than required in these plans and specifications.

At least 45 calendar days before the planned start of micropile construction, the Contractor shall submit electronically in PDF format the completed project reference list and a personnel list. The project reference list shall include a brief project description with the owner's name and current phone number and load test reports. The personnel list shall identify the supervising project Engineer, drill rig operators, and on-site foremen to be assigned to the project. The personnel list shall contain a summary of each individual's experience and be complete enough for the Engineer to determine whether each individual satisfies the required qualifications.

Work shall not be started, nor materials ordered, until the Engineer's written approval of the Contractor's experience qualifications is given. The Engineer may suspend the Work if the Contractor uses non-approved personnel.

3.1.2 Construction Site Survey. Before bidding the Work, the Contractor shall

review the available subsurface information and visit the site to assess the site geometry, equipment access conditions, and location of existing structures and above ground facilities.

The Contractor is responsible for field locating and verifying the location of all utilities shown on the plans prior to starting the Work. Maintain uninterrupted service for those utilities designated to remain in service throughout the Work. Notify the Engineer of any utility locations different from shown on the plans that may require micropile relocations or structure design modification.

Prior to start of any micropile construction activity, the Contractor and Engineer shall jointly inspect the site to observe and document the pre-construction condition of the site, existing structures and facilities.

3.1.3 Construction Submittals. At least 21 calendar days before the planned start of micropile construction, submit to the Engineer, for review and approval, electronically in PDF format the following for the micropile system or systems to be constructed:

- 1) Detailed step-by-step description of the proposed micropile construction and testing procedures in sufficient detail to allow the Engineer to monitor the construction and quality of the micropiles.
- 2) Proposed start date and time schedule and micropile installation schedule.
- 3) Working drawings for micropiles including items that are either not shown on the contract plans or deviations due to specific installation equipment/methods such as final bond zone drill hole diameters; splice types and locations; and reinforcing centralizers and spacers.
- 4) Shop drawings for all structural steel elements used in the micropiles, including the top bearing plate.
- 5) If welding of casing is proposed, submit the proposed welding procedure, by a qualified welding specialist.
- 6) Information on headroom and space requirements for installation equipment that verify the proposed equipment can perform at the site.
- 7) Sample micropile installation log to be used per Section 3.2.9.
- 8) Plan to describe how surface water, drill flush, and excess waste grout will be controlled and disposed.
- 9) Certified mill test reports for the reinforcing steel or coupon test results for permanent casing without mill certification. The ultimate strength, yield strength, elongation, and material properties composition shall be included. For API N-80 pipe casing, coupon test results may be submitted in lieu of mill certification.
- 10) Proposed Grouting Plan. The grouting plan shall include complete descriptions, details, and supporting calculations for the following:
 - a) Grout mix design and type of materials to be used in the grout, including certified test data and trial batch reports.
 - b) Methods and equipment for accurately monitoring and recording the grout depth, grout volume and grout pressure as the grout is being placed.
 - c) Grouting rate calculations, when requested by the Engineer. The calculations shall be based on the initial pump pressures or static head on the grout and losses throughout the placing system, including anticipated head of drilling fluid (if applicable) to be displaced.
 - d) Estimated curing time for grout to achieve specified strength. Previous test results for the proposed grout mix completed within one year of the start of grouting may be submitted for initial verification and acceptance and start of production work. During production, grout shall be tested in

accordance with Section 3.2.8.

- e) Procedure and equipment for Contractor monitoring of grout quality.
- 11) Detailed plans for the proposed micropile load testing method. This shall include all drawings, details, and structural design calculations necessary to clearly describe the proposed test method, reaction load system capacity and equipment setup, types and accuracy of apparatus to be used for applying and measuring the test loads and pile top movements in accordance with Section 3.3, Pile Load Tests.
- 12) Calibration reports and data for each test jack, pressure gauge and master pressure gauge and electronic load cell to be used. The calibration tests shall have been performed by an independent testing laboratory, and tests shall have been performed within 90 calendar days of the date submitted. Testing shall not commence until the Engineer has reviewed and accepted the jack, pressure gauge, master pressure gauge and electronic load cell calibration data.

All drawings and calculations shall be signed and sealed by the Contractor's Professional Engineer licensed in the State of Kentucky.

Work shall not begin until the construction submittals have been received, reviewed, and accepted in writing by the Engineer. Changes or deviations from the approved submittals must be re-submitted for approval.

3.1.4 Micropile Pre-Construction Meeting. A micropile pre-construction meeting will be scheduled by the Engineer and held prior to the start of micropile construction. The Engineer, prime Contractor, micropile specialty Contractor, and excavation contractor shall attend the meeting. Attendance is mandatory. The pre-construction meeting will be conducted to clarify the construction requirements for the work, to coordinate the construction schedule and activities, and to identify contractual relationships and delineation of responsibilities amongst the prime Contractor and the various Subcontractors—specifically those pertaining to excavation for micropile structures, anticipated subsurface conditions, micropile installation and testing, micropile structure survey control and site drainage control.

3.2 General Construction.

3.2.1 Site Drainage Control. The Contractor shall control and properly dispose of drill flush and construction related waste, including excess grout, in accordance with the standard specifications and all applicable local codes and regulations. Provide positive control and discharge of all surface water that will affect construction of the micropile installation.

3.2.2 Excavation. Coordinate the work and the excavation so the micropiles are safely constructed. Perform the micropile construction and related excavation in accordance with the Plans and approved submittals. No excavations steeper than those specified herein or shown on the Plans will be made above or below the micropile structure locations without written approval of the Engineer.

3.2.3 Micropile Allowable Construction Tolerances. Centerline of piling shall not be more than 3 inches from indicated plan location. Pile shall be plumb within 2 percent of total-length plan alignment. Top elevation of pile shall be plus 1 inch or minus 2 inches maximum from vertical elevation indicated. Centerline of reinforcing steel shall not be more than 3/4 inch from indicated location.

3.2.4 Micropile Installation. Unless shown otherwise on the Plans, the micropile

Contractor shall propose the drilling method, the grouting procedure, and the grouting pressure used for the installation of the micropiles, subject to approval by the Engineer. Final approval of this proposed method is contingent upon the satisfactory results of the verification load tests. The micropile Contractor shall also determine the final bond zone drill hole diameter for the selected drilling equipment, and central reinforcing sizing for test piles. The final drill hole diameter shall not be less than that shown on the Plans. The micropile Contractor is also responsible for estimating the grout take. There will be no extra payment for grout overruns.

3.2.5 Drilling. The drilling equipment and methods shall be suitable for drilling through the conditions to be encountered, without causing damage to any overlying or adjacent structures or services. Upon drilling completion ensure drill cuttings and/or other loose debris is removed from the bottom of the hole. The drill hole must be open along its full length to at least the design minimum drill hole diameter prior to placing grout and reinforcement. Develop methods of stabilizing borehole that do not have a deleterious effect on the grout-to-ground bond development. All installation techniques shall be determined and scheduled such that there will be no interconnection or damage to piles in which grout has not achieved final set. Use of drilling fluid containing bentonite is not allowed.

3.2.6 Pipe Casing and Reinforcing Bar Placement and Splicing. Reinforcement shall be placed into the drill hole prior to grouting. Reinforcement surface shall be free of deleterious substances, such as soil, mud, grease or oil that might contaminate the grout or coat the reinforcement and impair bond.

The Contractor shall check pile top elevations and adjust all installed micropiles to the planned elevations.

Centralizers and spacers shall be provided at 10-foot centers maximum spacing. The upper and lower most centralizer shall be located a maximum of 2 feet from the top and bottom of the micropile. Centralizers and spacers shall permit the free flow of grout without misalignment of the reinforcing bar(s) and permanent casing. The central reinforcement bars with centralizers shall be lowered into the stabilized drillhole and set. The reinforcing steel shall be inserted into the drill hole to the desired depth without difficulty. Partially inserted reinforcing bars shall not be driven or forced into the hole. Contractor shall redrill and reinsert reinforcing steel when necessary to facilitate insertion.

Lengths of casing and reinforcing bars to be spliced shall be secured in proper alignment and in a manner to avoid eccentricity or angle between the axes of the two lengths to be spliced. Splices and threaded joints shall meet the requirements of Materials Section 2.0. Threaded pipe casing joints shall be located at least two casing diameters (OD) from a splice in any reinforcing bar. When multiple bars are used, the bar splices shall be staggered at least 1 foot.

3.2.7 Grouting. Micropiles shall be fully grouted the same day the load transfer bond length is drilled. The grouting equipment used shall produce a grout free of lumps and undispersed cement. The Contractor shall have means and methods of measuring the grout quantity and pumping pressure during the grouting operations. The grout pump shall be equipped with a pressure gauge to monitor grout pressures. A second pressure gauge shall be placed at the point of injection into the pile top. The pressure gauges shall be capable of measuring pressures of at least 150 psi or twice the actual grout pressures used, whichever is greater. The grout shall be kept in constant agitation prior to pumping. Grout shall be placed within one hour of mixing. The grouting equipment shall be sized to enable each pile to be grouted in one continuous operation.

Tremie grout from the lowest point of the drill hole until uncontaminated grout flows from the top of the pile. The grout may be pumped through grout tubes, casing, hollow-stem augers, or drill rods. All grouting operations, including tremie grout pumping, casing extraction and subsequent pressure grouting operations, must ensure complete continuity of the grout column. The grout pressures and grout take shall be controlled to prevent excessive heave or fracturing of rock or soil formations. Upon completion of grouting, the grout tube may remain in the hole, but must be filled with grout.

Grout within the micropiles shall be allowed to attain the required design strength prior to being loaded.

If the Contractor elects to use a post-grouting system, Working Drawings and details shall be submitted to the Engineer for review in accordance with Section 3.1.3, Construction Submittals.

3.2.8 Grout Testing. Grout within the micropile verification and proof test piles shall attain the required minimum 28-day compressive strength shown on the Plans prior to load testing. Previous test results for the proposed grout mix completed within one year of the start of work may be submitted for initial verification of the required compressive strengths for installation of pre-production verification test piles. During production, micropile grout shall be tested by the Contractor for compressive strength in accordance with AASHTO T106/ASTM C109 at a frequency of no less than one set of three 2-inch grout cubes from each grout plant each day of operation or per every 10 piles, whichever occurs more frequently. At a minimum, compressive strength tests shall be taken at 3, 7 and 28 days after grouting. For each time interval, the compressive strength shall be the average of the set of 3 cubes tested.

Grout consistency, as measured by grout density, shall be determined by the Contractor per ASTM C188/AASHTO T133 or API RP-13B-1 at a frequency of at least one test per pile, conducted just prior to start of pile grouting. The Baroid Mud Balance used in accordance with API RP-13B-1 is an approved device for determining the grout density of neat cement grout.

Grout samples shall be taken directly from the grout plant. Provide grout cube compressive strength and grout density test results to the Engineer within 24 hours of testing.

3.2.9 Micropile Installation Records. Contractor shall prepare and submit to the Engineer full-length installation records for each micropile installed. The records shall be submitted within one work shift after that pile installation is completed. The records shall include the following minimum information:

- 1) Reference number of micropile
- 2) Date and time begun and completed for both drilling and grouting
- 3) Equipment used and operator
- 4) Factored Design load (compression and/or tension)
- 5) Micropile drilling logs indicating:
 - a) penetration rates (feet depth per minute)
 - b) down pressure
 - c) materials encountered, including flush return description
 - d) elevation of obstructions, if any
 - e) elevation of karst, solution features or voids, if any
 - f) ground elevation
 - g) elevation of groundwater or seepage encountered
 - h) final tip elevation
 - i) casing length above and below bottom of footing

- j) plunge length
- k) bond length
- l) total micropile length
- m) description of unusual installation behavior or conditions
- 6) grouting rates (cubic yards per foot depth)
- 7) grouting pressures (pounds per square inch per foot depth)
- 8) total grout quantities (cubic yards)
- 9) casing materials and dimensions
- 10) reinforcing material, size and lengths, and
- 11) compliance with tolerances.

The data shall be recorded on a micropile installation log. A separate log shall be provided for each micropile.

3.3 Pile Load Tests. Perform verification and proof testing of piles at the locations specified herein or designated by the Engineer based on the design axial load(s) as shown in the Plans. Perform compression load testing in accordance with ASTM D1143 and tension load testing in accordance with ASTM D3689, except as modified herein.

When the required axial compression design load is greater than the required axial tension design load and the design assumes that tip resistance adds capacity, compression load testing shall be performed. Otherwise, tension load testing shall be performed.

3.3.1 Testing Equipment and Data Recording. Testing equipment shall include dial gauges, dial gauge support, jack and pressure gauge, electronic load cell, and a reaction frame. The load cell is required only for the creep test portion of the verification test. The contractor shall provide a description of test setup and jack, pressure gauge and load cell calibration curves in accordance with the Submittals Section.

Design the testing reaction frame to be sufficiently rigid and of adequate dimensions such that excessive deformation of the testing equipment does not occur. Align the jack, bearing plates, and stressing anchorage such that unloading and repositioning of the equipment will not be required during the test.

Apply and measure the test load with a hydraulic jack and pressure gauge, or load cell when present. The jack and pressure gauge shall have a pressure range not exceeding twice the anticipated maximum test pressure. Jack ram travel shall be sufficient to allow the test to be done without resetting the equipment. Monitor the creep test load hold during verification tests with both the pressure gauge and the electronic load cell. Use the load cell to accurately maintain a constant load hold during the creep test load hold increment of the verification test.

Measure the pile top movement with a dial gauge capable of measuring to 0.001 inch. The dial gauge shall have a travel sufficient to allow the test to be done without having to reset the gauge. Visually align the gauge to be parallel with the axis of the micropile and support the gauge independently from the jack, pile or reaction frame. Use a minimum of two dial gauges when the test setup requires reaction against the ground or single reaction piles on each side of the test pile.

Production piles may be utilized as reaction piles for proof tests. The Contractor is responsible for any modifications to the production piles to facilitate testing. No additional payment will be made to repair or replace damaged production piles utilized as reaction piles. Production piles may not be utilized as reaction piles for verification tests.

3.3.2 Verification Tests. Perform pre-production verification pile load testing on sacrificial (non-production) test piles, unless noted otherwise in the Plans, to verify the

design of the pile system and the construction methods proposed prior to installing any production piles. Sacrificial verification test piles shall be constructed in conformance with the Plans and the accepted Working Drawings. The number and approximate locations of verification test piles shall be as shown on the Plans.

Verification load tests shall be performed to verify that the Contractor installed micropiles will meet the required compression and tension load capacities and load test acceptance criteria and to verify that the length of the micropile bond zone is adequate. Provide the Engineer a written report confirming micropile geometry, construction, testing details, and verification test results within 7 working days following completion of the pre-production verification load tests. The micropile verification load test results must verify the design and installation methods and be reviewed and accepted by the Engineer prior to beginning installation of production micropiles.

The drilling-and-grouting method, casing length and outside diameter, reinforcing bar lengths, and depth of embedment for the verification test pile(s) shall be identical to those specified for the production piles at the given locations. The verification test micropile structural steel sections and reinforcing shall be sized to safely resist the maximum test load.

The maximum verification and proof test loads applied to the micropile shall not exceed 80 percent of the structural capacity of the micropile structural elements, to include steel yield in tension, steel yield or buckling in compression, or grout crushing in compression. Any required increase in strength of the verification test pile elements above the strength required for the production piles shall be provided for in the contractor's bid price.

The jack shall be positioned at the beginning of the test such that unloading and repositioning during the test will not be required. When both compression and tension load testing is to be performed on the same pile, the pile shall be tested under compression loads prior to testing under tension loads.

3.3.3 Verification Test Loading Schedule. Test verification piles designated for compression or tension load testing to a maximum test load equal to the required nominal geotechnical resistance, or Nominal Resistance (NR) shown on the Plans. NR is typically calculated by dividing the Factored Design Load (FDL) for the micropile by the Geotechnical Resistance Factor (Φ).

The verification pile load tests shall be made by incrementally loading the micropile in accordance with the following cyclic load schedule for both compression and tension loading:

VERIFICATION TEST LOADING SCHEDULE			
STEP	LOADING	APPLIED LOAD	HOLD TIME (Min.)
1	Apply AL		2.5
2	Cycle 1	0.10 NR	2.5
		0.20 NR	2.5
		0.30 NR	2.5
		AL	1
3	Cycle 2	0.10 NR	1
		0.20 NR	1
		0.30 NR	1
		0.40 NR	2.5
		0.50 NR	2.5
		AL	1
4	Cycle 3	0.10 NR	1
		0.50 NR	1

VERIFICATION TEST LOADING SCHEDULE			
STEP	LOADING	APPLIED LOAD	HOLD TIME (Min.)
		0.60 NR	2.5
		0.70 NR	60 minutes (Creep Test)
		0.80 NR	2.5
		AL	1
5	Cycle 4	0.10 NR	1
		0.80 NR	1
		0.90 NR	2.5
		1.00 NR	10
		0.75 NR	5
		0.50 NR	5
		0.25 NR	5
		AL	5
AL = Alignment Load not to exceed 0.05 NR NR = Nominal Geotechnical Resistance (As Shown on Plans)			

Pile top movement shall be measured at each load increment relative to a fixed reference. The load-hold period shall start as soon as each test load increment is applied. The verification test pile shall be monitored for creep at the 0.70 Nominal Resistance (NR). Pile movement during the creep test shall be measured and recorded at 1, 2, 3, 4, 5, 6, 10, 20, 30, 50 and 60 minutes. The alignment load shall not exceed 5 percent of the NR load. Dial gauges shall be reset to zero after the initial AL is applied.

The acceptance criteria for micropile verification load tests are:

- 1) The pile shall sustain the first 0.50 NR test load (compression or tension) with no more than 1/2” total vertical movement at the top of the pile, relative to the position of the top of the pile prior to testing.
- 2) At the end of the 0.70 NR creep test load increment, test piles shall have a creep rate not exceeding 0.040 inch/log cycle time (1 to 10 minutes) or 0.080 inch/log cycle time (6 to 60 minutes or the last log cycle if held longer). The creep rate shall be linear or decreasing throughout the creep load hold period.
- 3) Failure does not occur at the NR maximum test load. Failure is defined as load where the slope of the load versus head settlement curve first exceeds 0.025 inch/kip.

3.3.4 Verification Test Pile Rejection. If the micropile verification test fails to meet the acceptance criteria, establish the cause(s) and provide modifications to the design, the construction procedures, or both. Retest the new system, as directed by the Engineer. These modifications include, but are not limited to, installing replacement test micropiles, modifying the installation methods, increasing the bond length, regrouting via pre-placed re-grout tubes, or changing the micropile type. Any modification which requires changes to the structure must have prior review and acceptance of the Engineer through submittals. Determine the cause for any modifications of design or construction procedures to appropriately determine any additional cost implications.

3.3.5 Proof Load Tests. Unless shown otherwise on the Plans, perform proof tests on 5 percent of the production piles with a minimum of 1 pile per substructure unit. The proof test piles or locations shall be as shown on the Plans or as directed by the Engineer. Provide the Engineer a written report confirming micropile geometry, construction, testing details, and proof test results within 7 working days following completion of the production pile proof load tests.

3.3.6 Proof Test Loading Schedule. Test piles designated for compression or tension proof load testing to a maximum test load of the Factored Design Load (FDL) shown on the Plans or Working Drawings. Proof tests shall be made by incrementally loading the micropile in accordance with the following schedule, to be used for both compression and tension loading:

PROOF TEST LOADING SCHEDULE			
STEP	LOADING	APPLIED LOAD	HOLD TIME (Min.)
1	Apply AL		2.5
2	Load Cycle	0.10 FDL	2.5
		0.20 FDL	2.5
		0.30 FDL	2.5
		0.40 FDL	2.5
		0.50 FDL	2.5
		0.60 FDL	2.5
		0.70 FDL	2.5
		0.80 FDL	10 to 60 minutes (Creep Test)
		0.90 FDL	2.5
		1.00 FDL	2.5
3	Unload Cycle	0.75 FDL	4
		0.50 FDL	4
		0.25 FDL	4
		AL	4
AL = Alignment Load not to exceed 0.05 FDL FDL = Factored Design Load (As Shown on Plans)			

Depending on performance, either a 10-minute or 60-minute creep test shall be performed at the 0.80 FDL Test Load. Where the pile top movement between 1 and 10 minutes exceeds 0.040 inch, the test load shall be maintained an additional 50 minutes. Movements shall be recorded at 1, 2, 3, 5, 6, 10, 20, 30, 50 and 60 minutes. The alignment load shall not exceed 5 percent of FDL. Dial gauges shall be reset to zero after the initial AL is applied.

The acceptance criteria for micropile proof load tests are:

- 1) The pile shall sustain a 0.70 FDL test load (compression or tension) with no more than 1/2” total vertical movement at the top of the pile, relative to the position of the top of the pile prior to testing.
- 2) At the end of the 0.80 FDL creep test load increment, test piles shall have a creep rate not exceeding 0.040 inch/log cycle time (1 to 10 minutes) or 0.080 inch/log cycle time (6 to 60 minutes). The creep rate shall be linear or decreasing throughout the creep load hold period.
- 3) Failure does not occur at the FDL maximum test load. Failure is defined as load where the slope of the load versus head settlement curve first exceeds 0.025 inch/kip.

3.3.7 Proof Test Pile Rejection. If a proof-tested micropile fails to meet the acceptance criteria, proof test another micropile in the immediate vicinity. For failed piles and further construction of other piles, modify the design, the construction procedure, or both. These modifications include, but are not limited to, installing replacement micropiles, incorporating piles of reduced load capacities, modifying the installation methods, increasing the bond length, or changing the micropile type. Any

modification which requires changes to the structure must have prior review and acceptance of the Engineer through submittals. Determine the cause for any modifications of design or construction procedures to appropriately determine any additional cost implications.

4.0 MEASUREMENT.

4.1 **Micropile.** The Department will not measure for payment any non-production trial piles, failed test piles or reaction piles. No distinction in measurement is made between cased or uncased piling. The contractor is responsible for estimating the grout take. There will be no extra payment for grout overruns or special installation materials, procedures or equipment to prevent or reduce grout overruns.

4.1.1 **Micropile, Common.** The Department will measure the length, in linear feet, of installed and complete production micropiles from the cut-off elevation to the approved top of rock elevation, minus any additional length installed at the contractor’s option such as, but not limited to, facilitating the use of whole casing segments.

4.1.2 **Micropile, Solid Rock.** The Department will measure the length, in linear feet, of installed and complete production micropiles from the top of rock elevation to the approved top of bond zone elevation, minus any additional length installed at the contractor’s option such as, but not limited to, facilitating the use of whole casing segments.

4.1.3 **Micropile, Bond Zone.** The Department will measure the quantity by each for each installed and complete production pile bond zone length.

4.2 **Micropile Verification Test.** For each verification test micropile installed according to the plans and is tested and accepted, the Department will measure the quantity by “each.” The unit price will include the sacrificial pile as well as the reaction system, ancillaries, and any other materials and labor required to perform the test. Additional verification test micropiles installed to verify alternative micropile installation methods proposed by the Contractor will not be measured for payment.

4.3 **Micropile Proof Test.** The Department will measure the quantity by each for each test performed on a production micropile that is accepted and incorporated into the completed structure.

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

<u>Pay Item</u>	<u>Pay Unit</u>
Micropile Diameter*, Common	Linear Foot
Micropile Diameter*, Solid Rock	Linear Foot
Micropile Bond Zone	Each
Micropile Verification Test	Each
Micropile Proof Test	Each

* See Plan Sheets for sizes of micropiles.

The Department will consider payment as full compensation for all work required in this note.

MATERIAL SUMMARY

CONTRACT ID: 251032

NHPP 0711(096)

DE05600712513

I-71 WIDENING ADDITION OF NB AND SB AUXILIARY LANES ON I-71 NEAR KENNEDY INCLUDING OPERATIONAL IMPROVEMENTS TO THE ZORN INTERCHANGE GRADE DRAIN & SURFACE WITH BRIDGE, A DISTANCE OF 2.5 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0040	00001	DGA BASE	18,476.00	TON
0045	00008	CEMENT STABILIZED ROADBED	46,659.00	SQYD
0050	00018	DRAINAGE BLANKET-TYPE II-ASPH	14,145.00	TON
0055	00100	ASPHALT SEAL AGGREGATE	201.00	TON
0060	00103	ASPHALT SEAL COAT	24.00	TON
0065	00190	LEVELING & WEDGING PG64-22	416.00	TON
0070	00194	LEVELING & WEDGING PG76-22	2,727.00	TON
0075	00214	CL3 ASPH BASE 1.00D PG64-22	8,709.00	TON
0080	00217	CL4 ASPH BASE 1.00D PG64-22	15,068.00	TON
0085	00219	CL4 ASPH BASE 1.00D PG76-22	9,480.00	TON
0090	00339	CL3 ASPH SURF 0.38D PG64-22	2,537.00	TON
0095	00342	CL4 ASPH SURF 0.38A PG76-22	11,512.00	TON
0100	00358	ASPHALT CURING SEAL	48.00	TON
0105	02542	CEMENT	938.00	TON
0110	02676	MOBILIZATION FOR MILL & TEXT	1.00	LS
0115	02677	ASPHALT PAVE MILLING & TEXTURING	10,390.00	TON
0120	02702	SAND FOR BLOTTER	117.00	TON
0125	02720	SIDEWALK-4 IN CONCRETE	1,110.00	SQYD
0130	20071EC	JOINT ADHESIVE	106,876.00	LF
0135	21289ED	LONGITUDINAL EDGE KEY	24,912.00	LF
0140	24970EC	ASPHALT MATERIAL FOR TACK NON-TRACKING	188.00	TON
0145	00078	CRUSHED AGGREGATE SIZE NO 2	16,033.00	TON
0150	01001	PERFORATED PIPE-6 IN	11,290.00	LF
0155	01011	NON-PERFORATED PIPE-6 IN	424.00	LF
0160	01033	PERF PIPE HEADWALL TY 4-6 IN	1.00	EACH
0165	01690	FLUME INLET TYPE 1	3.00	EACH
0170	01691	FLUME INLET TYPE 2	17.00	EACH
0175	01877	SPECIAL HEADER CURB	3,276.00	LF
0180	01885	LIP HEADER CURB	165.00	LF
0185	01890	ISLAND HEADER CURB TYPE 1	547.00	LF
0190	01903	REMOVE CONCRETE ROLL CURB	66.00	LF
0195	01978	CONC MEDIAN BARRIER TYPE A TL5 56 IN	10,231.00	LF
0200	01978	CONC MEDIAN BARRIER TYPE A TL5 56 IN - MODIFIED	185.00	LF
0205	01982	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	405.00	EACH
0210	01983	DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	10.00	EACH
0215	01985	DELINEATOR FOR BARRIER - YELLOW	200.00	EACH
0220	01987	DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	4.00	EACH
0225	02003	RELOCATE TEMP CONC BARRIER	18,200.00	LF
0230	02014	BARRICADE-TYPE III	8.00	EACH
0235	02070	JPC PAVEMENT-12 IN	166.00	SQYD
0240	02076	JPC PAVEMENT-7 IN	121.00	SQYD
0245	02091	REMOVE PAVEMENT	8,556.00	SQYD

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0250	02159	TEMP DITCH	6,944.00	LF
0255	02160	CLEAN TEMP DITCH	3,472.00	LF
0260	02200	ROADWAY EXCAVATION	40,364.00	CUYD
0265	02223	GRANULAR EMBANKMENT	978.00	CUYD
0270	02242	WATER	2,400.00	MGAL
0275	02262	FENCE-WOVEN WIRE TYPE 1	25,112.00	LF
0280	02289	DOUBLE VEHICULAR WOVEN WIRE GATE	1.00	EACH
0285	02351	GUARDRAIL-STEEL W BEAM-S FACE	28,412.50	LF
0290	02367	GUARDRAIL END TREATMENT TYPE 1	7.00	EACH
0295	02370	GUARDRAIL END TREATMENT TYPE 2M	10.00	EACH
0300	02371	GUARDRAIL END TREATMENT TYPE 7	1.00	EACH
0305	02381	REMOVE GUARDRAIL	31,898.00	LF
0310	02395	REMOVE GUARDRAIL TERMINAL SECT	2.00	EACH
0315	02396	REMOVE GUARDRAIL END TREATMENT	9.00	EACH
0320	02483	CHANNEL LINING CLASS II	644.00	TON
0325	02545	CLEARING AND GRUBBING - 47.6 ACRES	1.00	LS
0330	02555	CONCRETE-CLASS B - (REVISED 10-21-25)	52.52	CUYD
0335	02562	TEMPORARY SIGNS	1,450.00	SQFT
0340	02565	OBJECT MARKER TYPE 2	12.00	EACH
0345	02570	PROJECT CPM SCHEDULE	1.00	LS
0350	02602	FABRIC-GEOTEXTILE CLASS 1	5,372.00	SQYD
0355	02612	HANDRAIL-TYPE A-2	80.00	LF
0360	02650	MAINTAIN & CONTROL TRAFFIC - NHPP 0711(096)	1.00	LS
0365	02671	PORTABLE CHANGEABLE MESSAGE SIGN	10.00	EACH
0370	02697	EDGE LINE RUMBLE STRIPS	42,724.00	LF
0375	02701	TEMP SILT FENCE	6,944.00	LF
0380	02703	SILT TRAP TYPE A	48.00	EACH
0385	02704	SILT TRAP TYPE B	48.00	EACH
0390	02705	SILT TRAP TYPE C	48.00	EACH
0395	02706	CLEAN SILT TRAP TYPE A	48.00	EACH
0400	02707	CLEAN SILT TRAP TYPE B	48.00	EACH
0405	02708	CLEAN SILT TRAP TYPE C	48.00	EACH
0410	02726	STAKING	1.00	LS
0415	02731	REMOVE STRUCTURE - STA 547+57 NB BRIDGE OVER ABANDONED R/R	1.00	LS
0420	02731	REMOVE STRUCTURE - STA 547+57 SB BRIDGE OVER ABANDONED R/R	1.00	LS
0425	02898	RELOCATE CRASH CUSHION	7.00	EACH
0430	02998	MASONRY COATING	11,547.00	SQYD
0435	03171	CONC BARRIER WALL TYPE 9T	26,920.00	LF
0440	05950	EROSION CONTROL BLANKET	10,642.00	SQYD
0445	05952	TEMP MULCH	154,357.00	SQYD
0450	05953	TEMP SEEDING AND PROTECTION	115,265.00	SQYD
0455	05963	INITIAL FERTILIZER	4.90	TON
0460	05964	MAINTENANCE FERTILIZER	2.90	TON
0465	05985	SEEDING AND PROTECTION	95,011.00	SQYD
0470	05992	AGRICULTURAL LIMESTONE	58.90	TON
0475	06404	FLEXIBLE DELINEATOR POST-M/Y	55.00	EACH
0480	06510	PAVE STRIPING-TEMP PAINT-4 IN	1,178.00	LF
0485	06511	PAVE STRIPING-TEMP PAINT-6 IN	194,500.00	LF
0490	06530	PAVE STRIPING REMOVAL-4 IN	1,178.00	LF

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0495	06531	PAVE STRIPING REMOVAL-6 IN	27,974.00	LF
0500	06542	PAVE STRIPING-THERMO-6 IN W	43,368.00	LF
0505	06543	PAVE STRIPING-THERMO-6 IN Y	31,024.00	LF
0510	06546	PAVE STRIPING-THERMO-12 IN W	4,018.00	LF
0515	06547	PAVE STRIPING-THERMO-12 IN Y	399.00	LF
0520	06550	PAVE STRIPING-TEMP REM TAPE-W	5,670.00	LF
0525	06551	PAVE STRIPING-TEMP REM TAPE-Y	27,613.00	LF
0530	06568	PAVE MARKING-THERMO STOP BAR-24IN	162.00	LF
0535	06569	PAVE MARKING-THERMO CROSS-HATCH	2,619.00	SQFT
0540	06573	PAVE MARKING-THERMO STR ARROW	4.00	EACH
0545	06574	PAVE MARKING-THERMO CURV ARROW	30.00	EACH
0550	06585	PAVEMENT MARKER TY IVA-MW TEMP	300.00	EACH
0555	06586	PAVEMENT MARKER TY IVA-MY TEMP	300.00	EACH
0560	06600	REMOVE PAVEMENT MARKER TYPE V	1,135.00	EACH
0565	06610	INLAID PAVEMENT MARKER-MW	636.00	EACH
0570	06611	INLAID PAVEMENT MARKER-MY	292.00	EACH
0575	06613	INLAID PAVEMENT MARKER-B W/R	78.00	EACH
0580	06614	INLAID PAVEMENT MARKER-B Y/R	48.00	EACH
0585	08003	FOUNDATION PREPARATION	1.00	LS
0590	08018	RETAINING WALL	3,600.00	SQFT
0600	08912	CRASH CUSHION TY 6 CLASS T TL3	4.00	EACH
0605	10020NS	FUEL ADJUSTMENT	102,385.00	DOLL
0610	10030NS	ASPHALT ADJUSTMENT	240,409.00	DOLL
0615	15094	S MANHOLE ADJUST TO GRADE	1.00	EACH
0620	20190ES601	CONC BARR WALL TY 9T-INSTALL	25,200.00	LF
0625	20191ED	OBJECT MARKER TY 3	4.00	EACH
0630	20257NC	SITE PREPARATION	1.00	LS
0635	20259ED	TEMPORARY MEDIAN CROSSOVER	2.00	EACH
0640	20411ED	LAW ENFORCEMENT OFFICER	400.00	HOURL
0645	20432ES112	REMOVE CRASH CUSHION	11.00	EACH
0650	20521NS719	REMOVE BRIDGE END CONNECTOR	35.00	EACH
0655	20550ND	SAWCUT PAVEMENT	26,057.00	LF
0660	21590EN	SOUND BARRIER WALL	72,846.00	SQFT
0665	22045NN	FLUME INLET TY 2-MOD	1.00	EACH
0670	22520EN	PAVE MARKING-THERMO YIELD BAR-36 IN	144.00	LF
0675	22880ED	BARRIER WALL TRANSITION	73.00	LF
0680	23148EN	END ANCHORS	2.00	EACH
0685	23158ES505	DETECTABLE WARNINGS	122.00	SQFT
0690	23253ES717	PAVE MARK TY 1 TAPE CROSS-HATCH	172.00	SQFT
0695	23496EC	MEDIAN CROSSOVER REMOVAL	2.00	EACH
0700	23607EC	PAVE MARK THERMO-LANE REDUCTION ARROW	3.00	EACH
0705	23875NC	REMOVE THERMOPLASTIC ARROWS	2.00	EACH
0710	23979EC	CRASH CUSHION TY 6 CLASS C TL3	1.00	EACH
0715	24255EC	REMOVE CABLE GUARDRAIL BARRIER SYSTEM	10,217.00	LF
0720	24679ED	PAVE MARK THERMO CHEVRON	392.00	SQFT
0725	24689EC	PAVE MARK THERMO-WRONG WAY ARROW	10.00	EACH
0730	24843EC	VIBRATING WIRE PIEZOMETER	2.00	EACH
0735	24880EC	REMOVE PAVEMENT MARKER	544.00	EACH
0740	24899EC	PAVE MARKING-THERMO ELONG ROUTE SHIELD	10.00	EACH
0745	25078ED	THRIE BEAM GUARDRAIL TRANSITION TL-3	18.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0750	26146ES717	PAVE MARK TY 1 TAPE LANE REDUCTION ARROW	1.00	EACH
0755	26166ES717	PAVE MARK TY 1 TAPE CHEVRON	132.00	SQFT
0760	26236EC	THRIE BEAM BULLNOSE TERMINAL	1.00	EACH
0765	26237EC	CONNECTED ARROW PANEL	8.00	MONT
0770	26240EC	PAVE STRIPE-WET REF CONT TAPE-6 IN W	2,279.00	LF
0775	26241EC	PAVE STRIPE-WET REF CONT TAPE-6 IN Y	1,650.00	LF
0780	26242EC	PAVE STRIPE-WET REF CONT TAPE-12 IN W	607.00	LF
0785	26248EC	ELECTRONIC DELIVERY MGMT SYSTEM - AGG	1.00	LS
0790	26248EC	ELECTRONIC DELIVERY MGMT SYSTEM - AGG	1.00	LS
0795	00521	STORM SEWER PIPE-15 IN	1,475.00	LF
0800	00522	STORM SEWER PIPE-18 IN	2,146.00	LF
0805	00524	STORM SEWER PIPE-24 IN	53.00	LF
0810	01204	PIPE CULVERT HEADWALL-18 IN	1.00	EACH
0815	01208	PIPE CULVERT HEADWALL-24 IN	1.00	EACH
0820	01310	REMOVE PIPE	219.00	LF
0825	01443	SLOPED AND PARALLEL HEADWALL-15 IN	1.00	EACH
0830	01480	CURB BOX INLET TYPE B	1.00	EACH
0835	01605	CONC MED BARR BOX INLET TY B1 TL5 56	3.00	EACH
0840	01623	CONC MED BARR BOX INLET TY B1 TL5 56	9.00	EACH
0845	01624	CONC MED BARR BOX INLET TY B2 TL5 56	32.00	EACH
0850	01626	CONC MED BARR BOX INLET TY A2 TL5 56	4.00	EACH
0855	01626	CONC MED BARR BOX INLET TY A2 TL5 56 - (MODIFIED)	1.00	EACH
0860	01718	REMOVE INLET	31.00	EACH
0865	02607	FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	5,096.00	SQYD
0870	02625	REMOVE HEADWALL	6.00	EACH
0875	02690	SAFELOADING	35.00	CUYD
0880	08100	CONCRETE-CLASS A	25.00	CUYD
0885	21799EN	BORE AND JACK PIPE-24 IN	56.00	LF
0890	23126EN	BORE AND JACK PIPE-18 IN	71.00	LF
0895	24814EC	PIPELINE INSPECTION	1,957.00	LF
0900	01643	JUNCTION BOX-24 IN	4.00	EACH
0905	02231	STRUCTURE GRANULAR BACKFILL	158.20	CUYD
0910	03299	ARMORED EDGE FOR CONCRETE	58.50	LF
0915	04797	CONDUIT-3 IN	287.00	LF
0920	08003	FOUNDATION PREPARATION	1.00	LS
0925	08014	REINF CONC SLOPE WALL-4 IN	210.00	SQYD
0930	08033	TEST PILES	290.00	LF
0935	08052	PILES-STEEL HP14X117	1,764.00	LF
0940	08095	PILE POINTS-14 IN	32.00	EACH
0945	08100	CONCRETE-CLASS A	142.40	CUYD
0950	08104	CONCRETE-CLASS AA	221.90	CUYD
0955	08150	STEEL REINFORCEMENT	18,938.00	LB
0960	08151	STEEL REINFORCEMENT-EPOXY COATED	64,335.00	LB
0965	08301	REMOVE SUPERSTRUCTURE	1.00	LS
0970	08669	PRECAST PC BOX BEAM SB21	550.30	LF
0975	20391NS835	ELECTRICAL JUNCTION BOX TYPE A	4.00	EACH
0980	23378EC	CONCRETE SEALING	7,580.00	SQFT
0985	23744EC	EPOXY INJECTION CRACK REPAIR	4.00	LF
0990	26233EC	MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0995	01643	JUNCTION BOX-24 IN	6.00	EACH
1000	02231	STRUCTURE GRANULAR BACKFILL	848.00	CUYD
1005	02403	REMOVE CONCRETE MASONRY	278.00	CUYD
1010	03299	ARMORED EDGE FOR CONCRETE	221.50	LF
1015	08003	FOUNDATION PREPARATION	1.00	LS
1020	08019	CYCLOPEAN STONE RIP RAP	504.00	TON
1025	08033	TEST PILES	659.00	LF
1030	08051	PILES-STEEL HP14X89	3,822.00	LF
1035	08095	PILE POINTS-14 IN	44.00	EACH
1040	08100	CONCRETE-CLASS A	735.90	CUYD
1045	08104	CONCRETE-CLASS AA	1,215.10	CUYD
1050	08130	MECHANICAL REINF COUPLER #5	80.00	EACH
1055	08135	MECHANICAL REINF COUPLER #10	64.00	EACH
1060	08150	STEEL REINFORCEMENT	91,599.00	LB
1065	08151	STEEL REINFORCEMENT-EPOXY COATED	327,278.00	LB
1070	08301	REMOVE SUPERSTRUCTURE	1.00	LS
1075	08634	PRECAST PC I BEAM TYPE 4	2,878.00	LF
1080	20391NS835	ELECTRICAL JUNCTION BOX TYPE A - BRIDGE OVER BEARGRASS CREEK (LUMP SUM)	4.00	EACH
1085	22585NN	MICROPILE PROOF TEST	2.00	EACH
1090	23378EC	CONCRETE SEALING	73,769.00	SQFT
1095	23813EC	DECK DRAIN	40.00	EACH
1100	24006EC	MICROPILE VERIFICATION TEST	1.00	EACH
1105	24179EC	MECHANICAL REINF COUPLER #4-EPOXY COATED	1,964.00	EACH
1110	24902EC	PVC CONDUIT-3 IN-SCHEDULE 80	492.00	LF
1115	25028ED	RAIL SYSTEM SINGLE SLOPE - 40 IN	492.00	LF
1120	25034ED	MICROPILE BOND ZONE	12.00	EACH
1125	26141EC	GALVANIC ANODE	552.00	EACH
1130	26209EC	MICROPILES-9 5/8 IN-COMMON	1,544.00	LF
1135	26210EC	MICROPILES-9 5/8 IN-SOLID ROCK	60.00	LF
1140	01643	JUNCTION BOX-24 IN	6.00	EACH
1145	02231	STRUCTURE GRANULAR BACKFILL	229.60	CUYD
1150	03299	ARMORED EDGE FOR CONCRETE	69.10	LF
1155	04797	CONDUIT-3 IN	549.00	LF
1160	08003	FOUNDATION PREPARATION	1.00	LS
1165	08020	CRUSHED AGGREGATE SLOPE PROT	271.00	TON
1170	08033	TEST PILES	439.00	LF
1175	08052	PILES-STEEL HP14X117	2,684.00	LF
1180	08095	PILE POINTS-14 IN	32.00	EACH
1185	08100	CONCRETE-CLASS A	187.30	CUYD
1190	08104	CONCRETE-CLASS AA	449.20	CUYD
1195	08141	MECHANICAL REINF COUPLER #6 EPOXY COATED	1,662.00	EACH
1200	08150	STEEL REINFORCEMENT	27,812.00	LB
1205	08151	STEEL REINFORCEMENT-EPOXY COATED	160,270.00	LB
1210	08301	REMOVE SUPERSTRUCTURE	1.00	LS
1215	20391NS835	ELECTRICAL JUNCTION BOX TYPE A	4.00	EACH
1220	22585NN	MICROPILE PROOF TEST	2.00	EACH
1225	23378EC	CONCRETE SEALING	14,477.00	SQFT
1230	23744EC	EPOXY INJECTION CRACK REPAIR	30.00	LF
1235	23981EC	PPC I-BEAM TYPE HN 42-49	1,085.30	LF

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1240	24006EC	MICROPILE VERIFICATION TEST	1.00	EACH
1245	25034ED	MICROPILE BOND ZONE	4.00	EACH
1250	26209EC	MICROPILES-9 5/8 IN-COMMON	496.00	LF
1255	26210EC	MICROPILES-9 5/8 IN-SOLID ROCK	16.00	LF
1260	26233EC	MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS
1265	01643	JUNCTION BOX-24 IN	4.00	EACH
1270	02231	STRUCTURE GRANULAR BACKFILL	196.00	CUYD
1275	03299	ARMORED EDGE FOR CONCRETE	58.90	LF
1280	08003	FOUNDATION PREPARATION	1.00	LS
1285	08020	CRUSHED AGGREGATE SLOPE PROT	199.00	TON
1290	08033	TEST PILES	424.00	LF
1295	08052	PILES-STEEL HP14X117	2,656.00	LF
1300	08095	PILE POINTS-14 IN	32.00	EACH
1305	08100	CONCRETE-CLASS A	158.80	CUYD
1310	08104	CONCRETE-CLASS AA	224.90	CUYD
1315	08150	STEEL REINFORCEMENT	22,168.00	LB
1320	08151	STEEL REINFORCEMENT-EPOXY COATED	47,686.00	LB
1325	08301	REMOVE SUPERSTRUCTURE	1.00	LS
1330	08669	PRECAST PC BOX BEAM SB21	632.70	LF
1335	20391NS835	ELECTRICAL JUNCTION BOX TYPE A	4.00	EACH
1340	22146EN	CONCRETE PATCHING REPAIR	203.00	SQFT
1345	23378EC	CONCRETE SEALING	8,731.00	SQFT
1350	23744EC	EPOXY INJECTION CRACK REPAIR	16.00	LF
1355	24902EC	PVC CONDUIT-3 IN-SCHEDULE 80	318.00	LF
1360	26233EC	MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS
1365	04903	REFERENCE MARKER	24.00	EACH
1370	04904	BARRIER MOUNTING BRACKET	12.00	EACH
1375	06400	GMSS GALV STEEL TYPE A	3,191.00	LB
1380	06405	SBM ALUMINUM PANEL SIGNS	3,038.00	SQFT
1385	06406	SBM ALUM SHEET SIGNS .080 IN	301.80	SQFT
1390	06407	SBM ALUM SHEET SIGNS .125 IN	1,005.90	SQFT
1395	06410	STEEL POST TYPE 1	1,654.00	LF
1400	06412	STEEL POST MILE MARKERS	4.00	EACH
1405	06415	OSS GALV STEEL CANTILEVER	4.00	EACH
1410	06441	GMSS GALV STEEL TYPE C	598.00	LB
1415	06449	REM OVERHEAD SIGN SUPPORT STR	5.00	EACH
1420	06450	REM OVERHEAD STRUC CONC BASE	5.00	EACH
1425	06451	REMOVE SIGN SUPPORT BEAM	10.00	EACH
1430	06475	OSS GALV STEEL 60 FT TRUSS	2.00	EACH
1435	06490	CLASS A CONCRETE FOR SIGNS	186.30	CUYD
1440	06491	STEEL REINFORCEMENT FOR SIGNS	14,708.00	LB
1445	20418ED	REMOVE & RELOCATE SIGNS	4.00	EACH
1450	20419ND	ROADWAY CROSS SECTION	19.00	EACH
1455	20912ND	BARRIER WALL POST	5.00	EACH
1460	21373ND	REMOVE SIGN	14.00	EACH
1465	21596ND	GMSS TYPE D	29.00	EACH
1470	24631EC	BARCODE SIGN INVENTORY	148.00	EACH
1475	04820	TRENCHING AND BACKFILLING	70.00	LF
1480	04845	CABLE-NO. 14/7C	2,850.00	LF
1485	04884	ANCHOR	1.00	EACH

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1490	04886	MESSENGER-15400 LB	600.00	LF
1495	04932	INSTALL STEEL STRAIN POLE	4.00	EACH
1500	04953	TEMP RELOCATION OF SIGNAL HEAD	6.00	EACH
1505	20093NS835	INSTALL PEDESTRIAN HEAD-LED	4.00	EACH
1510	20188NS835	INSTALL LED SIGNAL-3 SECTION	8.00	EACH
1515	20266ES835	INSTALL LED SIGNAL- 4 SECTION	1.00	EACH
1520	21743NN	INSTALL PEDESTRIAN DETECTOR	4.00	EACH
1525	23068NN	REMOVE & REINSTALL COORDINATING UNIT	1.00	EACH
1530	23157EN	TRAFFIC SIGNAL POLE BASE	18.00	CUYD
1535	23222EC	INSTALL SIGNAL PEDESTAL	2.00	EACH
1540	23235EC	INSTALL PEDESTAL POST	2.00	EACH
1545	24528ED	TETHER WIRE - SIGNALS(LUMP SUM)	600.00	LF
1550	24900EC	PVC CONDUIT-1 1/4 IN-SCHEDULE 80	70.00	LF
1555	24908EC	INSTALL SIGNAL CONTROLLER-TY ATC	1.00	EACH
1560	24955ED	REMOVE SIGNAL EQUIPMENT	1.00	EACH
1565	26119EC	INSTALL RADAR PRESENCE DETECTOR TYPE A	3.00	EACH
1570	02187	SITE PREPARATION	1.00	EACH
1575	04740	POLE BASE	1.00	EACH
1580	04795	CONDUIT-2 IN	525.00	LF
1585	04811	ELECTRICAL JUNCTION BOX TYPE B	1.00	EACH
1590	04820	TRENCHING AND BACKFILLING	525.00	LF
1595	04835	WIRE-NO. 4	1,050.00	LF
1600	08100	CONCRETE-CLASS A	39.70	CUYD
1605	08150	STEEL REINFORCEMENT	2,779.00	LB
1610	21059ND	CCTV ASSEMBLY	2.00	EACH
1615	21066ND	MODEL 336 ENCLOSURE	2.00	EACH
1620	21069ND	SURGE DEVICE 120 VOLT	2.00	EACH
1625	21071ND	DATA SURGE DEVICE	2.00	EACH
1630	21072ND	VIDEO SURGE DEVICE	2.00	EACH
1635	23842EC	POLE 50 FT-INSTALL	1.00	EACH
1640	23945EC	INST VARIABLE MESSAGE SIGN-EXIST TRUSS	1.00	EACH
1645	04710	POLE 80 FT MTG HT HIGH MAST	4.00	EACH
1650	04780	FUSED CONNECTOR KIT	18.00	EACH
1655	04800	MARKER	10.00	EACH
1660	04820	TRENCHING AND BACKFILLING	3,575.00	LF
1665	04940	REMOVE LIGHTING	1.00	LS
1670	20391NS835	ELECTRICAL JUNCTION BOX TYPE A	11.00	EACH
1675	20392NS835	ELECTRICAL JUNCTION BOX TYPE C	2.00	EACH
1680	20410ED	MAINTAIN LIGHTING	1.00	LS
1685	21543EN	BORE AND JACK CONDUIT	1,240.00	LF
1690	23161EN	POLE BASE-HIGH MAST	20.00	CUYD
1695	23778EC	WIRE-NO. 10	2,025.00	LF
1700	24749EC	HIGH MAST LED LUMINAIRE	16.00	EACH
1705	24851EC	CABLE-NO. 10/3C DUCTED - LIGHTING - ZORN INTERCHANGE ONLY	5,415.00	LF
1710	24901EC	PVC CONDUIT-2 IN-SCHEDULE 80	610.00	LF
1715	24902EC	PVC CONDUIT-3 IN-SCHEDULE 80	1,050.00	LF
1720	02568	MOBILIZATION	1.00	LS
1725	02569	DEMOBILIZATION	1.00	LS
1730	04793	CONDUIT-1 1/4 IN	80.00	LF

MATERIAL SUMMARY

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
1735	04795	CONDUIT-2 IN	20.00	LF
1740	04811	ELECTRICAL JUNCTION BOX TYPE B	2.00	EACH
1745	04820	TRENCHING AND BACKFILLING	90.00	LF
1750	04829	PIEZOELECTRIC SENSOR	6.00	EACH
1755	04830	LOOP WIRE	2,650.00	LF
1760	04895	LOOP SAW SLOT AND FILL	600.00	LF
1765	20359NN	GALVANIZED STEEL CABINET	2.00	EACH
1770	20360ES818	WOOD POST	4.00	EACH
1775	02223	GRANULAR EMBANKMENT	469.00	CUYD
1780	08003	FOUNDATION PREPARATION	1.00	LS
1785	08100	CONCRETE-CLASS A	1,181.30	CUYD
1790	08150	STEEL REINFORCEMENT	210,141.00	LB
1795	02742	TRAINEE PAYMENT REIMBURSEMENT - CEMENT MASON	1,400.00	HOURL

CONTRACT ID: 251032

NHPP 0711(096)

DE05600712524

I-71 BRIDGE DECK OVERLAY ON THE I-64 EB RAMP 611 FROM MP 0.4 TO MP 0.571 BRIDGE DECK OVERLAY, A DISTANCE OF .17 MILES.

Project Line No	Bid Code	DESCRIPTION	Quantity	Unit
0005	02060	PCC PAVEMENT DIAMOND GRINDING	5,618.00	SQYD
0010	02650	MAINTAIN & CONTROL TRAFFIC - LBGT 056 071 000-001	1.00	LS
0015	06511	PAVE STRIPING-TEMP PAINT-6 IN	2,257.00	LF
0020	06542	PAVE STRIPING-THERMO-6 IN W	1,354.00	LF
0025	06543	PAVE STRIPING-THERMO-6 IN Y	903.00	LF
0030	23229EC	HIGH FRICTION SURFACE TREATMENT	11,236.00	SQYD
0035	02569	DEMOBILIZATION	1.00	LS

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Section: 0001 - SIGNALS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	04820		TRENCHING AND BACKFILLING	70.00	LF		\$	
0020	04845		CABLE-NO. 14/7C	2,850.00	LF		\$	
0030	04884		ANCHOR	1.00	EACH		\$	
0040	04886		MESSENGER-15400 LB	600.00	LF		\$	
0050	04932		INSTALL STEEL STRAIN POLE	4.00	EACH		\$	
0060	04953		TEMP RELOCATION OF SIGNAL HEAD	6.00	EACH		\$	
0070	20093NS835		INSTALL PEDESTRIAN HEAD-LED	4.00	EACH		\$	
0080	20188NS835		INSTALL LED SIGNAL-3 SECTION	8.00	EACH		\$	
0090	20266ES835		INSTALL LED SIGNAL- 4 SECTION	1.00	EACH		\$	
0100	21743NN		INSTALL PEDESTRIAN DETECTOR	4.00	EACH		\$	
0110	23068NN		REMOVE & REINSTALL COORDINATING UNIT	1.00	EACH		\$	
0120	23157EN		TRAFFIC SIGNAL POLE BASE	18.00	CUYD		\$	
0130	23222EC		INSTALL SIGNAL PEDESTAL	2.00	EACH		\$	
0140	23235EC		INSTALL PEDESTAL POST	2.00	EACH		\$	
0150	24528ED		TETHER WIRE SIGNALS(LUMP SUM)	600.00	LF		\$	
0160	24900EC		PVC CONDUIT-1 1/4 IN-SCHEDULE 80	70.00	LF		\$	
0170	24908EC		INSTALL SIGNAL CONTROLLER-TY ATC	1.00	EACH		\$	
0180	24955ED		REMOVE SIGNAL EQUIPMENT	1.00	EACH		\$	
0190	26119EC		INSTALL RADAR PRESENCE DETECTOR TYPE A	3.00	EACH		\$	

Section: 0002 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0200	00001		DGA BASE	18,476.00	TON		\$	
0210	00008		CEMENT STABILIZED ROADBED	46,659.00	SQYD		\$	
0220	00018		DRAINAGE BLANKET-TYPE II-ASPH	14,145.00	TON		\$	
0230	00100		ASPHALT SEAL AGGREGATE	201.00	TON		\$	
0240	00103		ASPHALT SEAL COAT	24.00	TON		\$	
0250	00190		LEVELING & WEDGING PG64-22	416.00	TON		\$	
0260	00194		LEVELING & WEDGING PG76-22	2,727.00	TON		\$	
0270	00214		CL3 ASPH BASE 1.00D PG64-22	8,709.00	TON		\$	
0280	00217		CL4 ASPH BASE 1.00D PG64-22	15,068.00	TON		\$	
0290	00219		CL4 ASPH BASE 1.00D PG76-22	9,480.00	TON		\$	
0300	00339		CL3 ASPH SURF 0.38D PG64-22	2,537.00	TON		\$	
0310	00342		CL4 ASPH SURF 0.38A PG76-22	11,512.00	TON		\$	
0320	00358		ASPHALT CURING SEAL	48.00	TON		\$	
0330	02542		CEMENT	938.00	TON		\$	
0340	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0350	02677		ASPHALT PAVE MILLING & TEXTURING	10,390.00	TON		\$	
0360	02702		SAND FOR BLOTTER	117.00	TON		\$	
0370	02720		SIDEWALK-4 IN CONCRETE	1,110.00	SQYD		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0380	20071EC		JOINT ADHESIVE	106,876.00	LF		\$	
0390	21289ED		LONGITUDINAL EDGE KEY	24,912.00	LF		\$	
0400	24970EC		ASPHALT MATERIAL FOR TACK NON-TRACKING	188.00	TON		\$	

Section: 0003 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	00078		CRUSHED AGGREGATE SIZE NO 2	16,033.00	TON		\$	
0420	01001		PERFORATED PIPE-6 IN	11,290.00	LF		\$	
0430	01011		NON-PERFORATED PIPE-6 IN	424.00	LF		\$	
0440	01033		PERF PIPE HEADWALL TY 4-6 IN	1.00	EACH		\$	
0450	01690		FLUME INLET TYPE 1	3.00	EACH		\$	
0460	01691		FLUME INLET TYPE 2	17.00	EACH		\$	
0470	01877		SPECIAL HEADER CURB	3,276.00	LF		\$	
0480	01885		LIP HEADER CURB	165.00	LF		\$	
0490	01890		ISLAND HEADER CURB TYPE 1	547.00	LF		\$	
0500	01903		REMOVE CONCRETE ROLL CURB	66.00	LF		\$	
0510	01978		CONC MEDIAN BARRIER TYPE A TL5 56 IN	10,231.00	LF		\$	
0520	01978		CONC MEDIAN BARRIER TYPE A TL5 56 IN MODIFIED	185.00	LF		\$	
0530	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	405.00	EACH		\$	
0540	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	10.00	EACH		\$	
0550	01985		DELINEATOR FOR BARRIER - YELLOW	200.00	EACH		\$	
0560	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	4.00	EACH		\$	
0570	02003		RELOCATE TEMP CONC BARRIER	18,200.00	LF		\$	
0580	02014		BARRICADE-TYPE III	8.00	EACH		\$	
0590	02060		PCC PAVEMENT DIAMOND GRINDING	5,618.00	SQYD		\$	
0600	02070		JPC PAVEMENT-12 IN	166.00	SQYD		\$	
0610	02076		JPC PAVEMENT-7 IN	121.00	SQYD		\$	
0620	02091		REMOVE PAVEMENT	8,556.00	SQYD		\$	
0630	02159		TEMP DITCH	6,944.00	LF		\$	
0640	02160		CLEAN TEMP DITCH	3,472.00	LF		\$	
0650	02200		ROADWAY EXCAVATION	40,364.00	CUYD		\$	
0660	02223		GRANULAR EMBANKMENT	978.00	CUYD		\$	
0670	02242		WATER	2,400.00	MGAL		\$	
0680	02262		FENCE-WOVEN WIRE TYPE 1	25,112.00	LF		\$	
0690	02289		DOUBLE VEHICULAR WOVEN WIRE GATE	1.00	EACH		\$	
0700	02351		GUARDRAIL-STEEL W BEAM-S FACE	28,412.50	LF		\$	
0710	02367		GUARDRAIL END TREATMENT TYPE 1	7.00	EACH		\$	
0720	02370		GUARDRAIL END TREATMENT TYPE 2M	10.00	EACH		\$	
0730	02371		GUARDRAIL END TREATMENT TYPE 7	1.00	EACH		\$	
0740	02381		REMOVE GUARDRAIL	31,898.00	LF		\$	
0750	02395		REMOVE GUARDRAIL TERMINAL SECT	2.00	EACH		\$	
0760	02396		REMOVE GUARDRAIL END TREATMENT	9.00	EACH		\$	
0770	02483		CHANNEL LINING CLASS II	644.00	TON		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0780	02545		CLEARING AND GRUBBING 47.6 ACRES	1.00	LS		\$	
0790	02555		CONCRETE-CLASS B (REVISED 10-21-25)	52.52	CUYD		\$	
0800	02562		TEMPORARY SIGNS	1,450.00	SQFT		\$	
0810	02565		OBJECT MARKER TYPE 2	12.00	EACH		\$	
0820	02570		PROJECT CPM SCHEDULE	1.00	LS		\$	
0830	02602		FABRIC-GEOTEXTILE CLASS 1	5,372.00	SQYD		\$	
0840	02612		HANDRAIL-TYPE A-2	80.00	LF		\$	
0850	02650		MAINTAIN & CONTROL TRAFFIC LBGT 056 071 000-001	1.00	LS		\$	
0860	02650		MAINTAIN & CONTROL TRAFFIC NHPP 0711(096)	1.00	LS		\$	
0870	02671		PORTABLE CHANGEABLE MESSAGE SIGN	10.00	EACH		\$	
0880	02697		EDGE LINE RUMBLE STRIPS	42,724.00	LF		\$	
0890	02701		TEMP SILT FENCE	6,944.00	LF		\$	
0900	02703		SILT TRAP TYPE A	48.00	EACH		\$	
0910	02704		SILT TRAP TYPE B	48.00	EACH		\$	
0920	02705		SILT TRAP TYPE C	48.00	EACH		\$	
0930	02706		CLEAN SILT TRAP TYPE A	48.00	EACH		\$	
0940	02707		CLEAN SILT TRAP TYPE B	48.00	EACH		\$	
0950	02708		CLEAN SILT TRAP TYPE C	48.00	EACH		\$	
0960	02726		STAKING	1.00	LS		\$	
0970	02731		REMOVE STRUCTURE STA 547+57 NB BRIDGE OVER ABANDONED R/R	1.00	LS		\$	
0980	02731		REMOVE STRUCTURE STA 547+57 SB BRIDGE OVER ABANDONED R/R	1.00	LS		\$	
0990	02898		RELOCATE CRASH CUSHION	7.00	EACH		\$	
1000	02998		MASONRY COATING	11,547.00	SQYD		\$	
1010	03171		CONC BARRIER WALL TYPE 9T	26,920.00	LF		\$	
1020	05950		EROSION CONTROL BLANKET	10,642.00	SQYD		\$	
1030	05952		TEMP MULCH	154,357.00	SQYD		\$	
1040	05953		TEMP SEEDING AND PROTECTION	115,265.00	SQYD		\$	
1050	05963		INITIAL FERTILIZER	4.90	TON		\$	
1060	05964		MAINTENANCE FERTILIZER	2.90	TON		\$	
1070	05985		SEEDING AND PROTECTION	95,011.00	SQYD		\$	
1080	05992		AGRICULTURAL LIMESTONE	58.90	TON		\$	
1090	06404		FLEXIBLE DELINEATOR POST-M/Y	55.00	EACH		\$	
1100	06510		PAVE STRIPING-TEMP PAINT-4 IN	1,178.00	LF		\$	
1110	06511		PAVE STRIPING-TEMP PAINT-6 IN	196,757.00	LF		\$	
1120	06530		PAVE STRIPING REMOVAL-4 IN	1,178.00	LF		\$	
1130	06531		PAVE STRIPING REMOVAL-6 IN	27,974.00	LF		\$	
1140	06542		PAVE STRIPING-THERMO-6 IN W	44,722.00	LF		\$	
1150	06543		PAVE STRIPING-THERMO-6 IN Y	31,927.00	LF		\$	
1160	06546		PAVE STRIPING-THERMO-12 IN W	4,018.00	LF		\$	
1170	06547		PAVE STRIPING-THERMO-12 IN Y	399.00	LF		\$	
1180	06550		PAVE STRIPING-TEMP REM TAPE-W	5,670.00	LF		\$	
1190	06551		PAVE STRIPING-TEMP REM TAPE-Y	27,613.00	LF		\$	
1200	06568		PAVE MARKING-THERMO STOP BAR-24IN	162.00	LF		\$	
1210	06569		PAVE MARKING-THERMO CROSS-HATCH	2,619.00	SQFT		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1220	06573		PAVE MARKING-THERMO STR ARROW	4.00	EACH		\$	
1230	06574		PAVE MARKING-THERMO CURV ARROW	30.00	EACH		\$	
1240	06585		PAVEMENT MARKER TY IVA-MW TEMP	300.00	EACH		\$	
1250	06586		PAVEMENT MARKER TY IVA-MY TEMP	300.00	EACH		\$	
1260	06600		REMOVE PAVEMENT MARKER TYPE V	1,135.00	EACH		\$	
1270	06610		INLAID PAVEMENT MARKER-MW	636.00	EACH		\$	
1280	06611		INLAID PAVEMENT MARKER-MY	292.00	EACH		\$	
1290	06613		INLAID PAVEMENT MARKER-B W/R	78.00	EACH		\$	
1300	06614		INLAID PAVEMENT MARKER-B Y/R	48.00	EACH		\$	
1310	08003		FOUNDATION PREPARATION	1.00	LS		\$	
1320	08018		RETAINING WALL	3,600.00	SQFT		\$	
1340	08912		CRASH CUSHION TY 6 CLASS T TL3	4.00	EACH		\$	
1350	10020NS		FUEL ADJUSTMENT	102,385.00	DOLL	\$1.00	\$	\$102,385.00
1360	10030NS		ASPHALT ADJUSTMENT	240,409.00	DOLL	\$1.00	\$	\$240,409.00
1370	15094		S MANHOLE ADJUST TO GRADE	1.00	EACH		\$	
1380	20190ES601		CONC BARR WALL TY 9T-INSTALL	25,200.00	LF		\$	
1390	20191ED		OBJECT MARKER TY 3	4.00	EACH		\$	
1400	20257NC		SITE PREPARATION	1.00	LS		\$	
1410	20259ED		TEMPORARY MEDIAN CROSSOVER	2.00	EACH		\$	
1420	20411ED		LAW ENFORCEMENT OFFICER	400.00	HOURL		\$	
1430	20432ES112		REMOVE CRASH CUSHION	11.00	EACH		\$	
1440	20521NS719		REMOVE BRIDGE END CONNECTOR	35.00	EACH		\$	
1450	20550ND		SAWCUT PAVEMENT	26,057.00	LF		\$	
1460	21590EN		SOUND BARRIER WALL	72,846.00	SQFT		\$	
1470	22045NN		FLUME INLET TY 2-MOD	1.00	EACH		\$	
1480	22520EN		PAVE MARKING-THERMO YIELD BAR-36 IN	144.00	LF		\$	
1490	22880ED		BARRIER WALL TRANSITION	73.00	LF		\$	
1500	23148EN		END ANCHORS	2.00	EACH		\$	
1510	23158ES505		DETECTABLE WARNINGS	122.00	SQFT		\$	
1520	23229EC		HIGH FRICTION SURFACE TREATMENT	11,236.00	SQYD		\$	
1530	23253ES717		PAVE MARK TY 1 TAPE CROSS-HATCH	172.00	SQFT		\$	
1540	23496EC		MEDIAN CROSSOVER REMOVAL	2.00	EACH		\$	
1550	23607EC		PAVE MARK THERMO-LANE REDUCTION ARROW	3.00	EACH		\$	
1560	23875NC		REMOVE THERMOPLASTIC ARROWS	2.00	EACH		\$	
1570	23979EC		CRASH CUSHION TY 6 CLASS C TL3	1.00	EACH		\$	
1580	24255EC		REMOVE CABLE GUARDRAIL BARRIER SYSTEM	10,217.00	LF		\$	
1590	24679ED		PAVE MARK THERMO CHEVRON	392.00	SQFT		\$	
1600	24689EC		PAVE MARK THERMO-WRONG WAY ARROW	10.00	EACH		\$	
1610	24843EC		VIBRATING WIRE PIEZOMETER	2.00	EACH		\$	
1620	24880EC		REMOVE PAVEMENT MARKER	544.00	EACH		\$	
1630	24899EC		PAVE MARKING-THERMO ELONG ROUTE SHIELD	10.00	EACH		\$	
1640	25078ED		THRIE BEAM GUARDRAIL TRANSITION TL-3	18.00	EACH		\$	
1650	26146ES717		PAVE MARK TY 1 TAPE LANE REDUCTION ARROW	1.00	EACH		\$	
1660	26166ES717		PAVE MARK TY 1 TAPE CHEVRON	132.00	SQFT		\$	
1670	26236EC		THRIE BEAM BULLNOSE TERMINAL	1.00	EACH		\$	
1680	26237EC		CONNECTED ARROW PANEL	8.00	MONT		\$	
1690	26240EC		PAVE STRIPE-WET REF CONT TAPE-6 IN W	2,279.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1700	26241EC		PAVE STRIPE-WET REF CONT TAPE-6 IN Y	1,650.00	LF		\$	
1710	26242EC		PAVE STRIPE-WET REF CONT TAPE-12 IN W	607.00	LF		\$	
1720	26248EC		ELECTRONIC DELIVERY MGMT SYSTEM - AGG	1.00	LS		\$	

Section: 0004 - DRAINAGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1730	00521		STORM SEWER PIPE-15 IN	1,475.00	LF		\$	
1740	00522		STORM SEWER PIPE-18 IN	2,146.00	LF		\$	
1750	00524		STORM SEWER PIPE-24 IN	53.00	LF		\$	
1760	01204		PIPE CULVERT HEADWALL-18 IN	1.00	EACH		\$	
1770	01208		PIPE CULVERT HEADWALL-24 IN	1.00	EACH		\$	
1780	01310		REMOVE PIPE	219.00	LF		\$	
1790	01443		SLOPED AND PARALLEL HEADWALL-15 IN	1.00	EACH		\$	
1800	01480		CURB BOX INLET TYPE B	1.00	EACH		\$	
1810	01605		CONC MED BARR BOX INLET TY B1 TL5 56	3.00	EACH		\$	
1820	01623		CONC MED BARR BOX INLET TY B1 TL5 56	9.00	EACH		\$	
1830	01624		CONC MED BARR BOX INLET TY B2 TL5 56	32.00	EACH		\$	
1840	01626		CONC MED BARR BOX INLET TY A2 TL5 56	4.00	EACH		\$	
1850	01626		CONC MED BARR BOX INLET TY A2 TL5 56 (MODIFIED)	1.00	EACH		\$	
1860	01718		REMOVE INLET	31.00	EACH		\$	
1870	02607		FABRIC-GEOTEXTILE CLASS 2 FOR PIPE	5,096.00	SQYD	\$2.00	\$	\$10,192.00
1880	02625		REMOVE HEADWALL	6.00	EACH		\$	
1890	02690		SAFELOADING	35.00	CUYD		\$	
1900	08100		CONCRETE-CLASS A	25.00	CUYD		\$	
1910	21799EN		BORE AND JACK PIPE-24 IN	56.00	LF		\$	
1920	23126EN		BORE AND JACK PIPE-18 IN	71.00	LF		\$	
1930	24814EC		PIPELINE INSPECTION	1,957.00	LF		\$	

Section: 0005 - BRIDGE- CULVERT- I-71 OVER ABANDONED RR

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1940	02223		GRANULAR EMBANKMENT	469.00	CUYD		\$	
1950	08003		FOUNDATION PREPARATION	1.00	LS		\$	
1960	08100		CONCRETE-CLASS A	1,181.30	CUYD		\$	
1970	08150		STEEL REINFORCEMENT	210,141.00	LB		\$	

Section: 0006 - BRIDGE - OVER EDITH ROAD

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
1980	01643		JUNCTION BOX-24 IN	4.00	EACH		\$	
1990	02231		STRUCTURE GRANULAR BACKFILL	158.20	CUYD		\$	
2000	03299		ARMORED EDGE FOR CONCRETE	58.50	LF		\$	
2010	04797		CONDUIT-3 IN	287.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2020	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2030	08014		REINF CONC SLOPE WALL-4 IN	210.00	SQYD		\$	
2040	08033		TEST PILES	290.00	LF		\$	
2050	08052		PILES-STEEL HP14X117	1,764.00	LF		\$	
2060	08095		PILE POINTS-14 IN	32.00	EACH		\$	
2070	08100		CONCRETE-CLASS A	142.40	CUYD		\$	
2080	08104		CONCRETE-CLASS AA	221.90	CUYD		\$	
2090	08150		STEEL REINFORCEMENT	18,938.00	LB		\$	
2100	08151		STEEL REINFORCEMENT-EPOXY COATED	64,335.00	LB		\$	
2110	08301		REMOVE SUPERSTRUCTURE	1.00	LS		\$	
2120	08669		PRECAST PC BOX BEAM SB21	550.30	LF		\$	
2130	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	4.00	EACH		\$	
2140	23378EC		CONCRETE SEALING	7,580.00	SQFT		\$	
2150	23744EC		EPOXY INJECTION CRACK REPAIR	4.00	LF		\$	
2160	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS		\$	

Section: 0007 - BRIDGE- OVER BEARGRASS CREEK

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2170	01643		JUNCTION BOX-24 IN	6.00	EACH		\$	
2180	02231		STRUCTURE GRANULAR BACKFILL	848.00	CUYD		\$	
2190	02403		REMOVE CONCRETE MASONRY	278.00	CUYD		\$	
2200	03299		ARMORED EDGE FOR CONCRETE	221.50	LF		\$	
2210	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2220	08019		CYCLOPEAN STONE RIP RAP	504.00	TON		\$	
2230	08033		TEST PILES	659.00	LF		\$	
2240	08051		PILES-STEEL HP14X89	3,822.00	LF		\$	
2250	08095		PILE POINTS-14 IN	44.00	EACH		\$	
2260	08100		CONCRETE-CLASS A	735.90	CUYD		\$	
2270	08104		CONCRETE-CLASS AA	1,215.10	CUYD		\$	
2280	08130		MECHANICAL REINF COUPLER #5	80.00	EACH		\$	
2290	08135		MECHANICAL REINF COUPLER #10	64.00	EACH		\$	
2300	08150		STEEL REINFORCEMENT	91,599.00	LB		\$	
2310	08151		STEEL REINFORCEMENT-EPOXY COATED	327,278.00	LB		\$	
2320	08301		REMOVE SUPERSTRUCTURE	1.00	LS		\$	
2330	08634		PRECAST PC I BEAM TYPE 4	2,878.00	LF		\$	
2340	20391NS835		ELECTRICAL JUNCTION BOX TYPE A BRIDGE OVER BEARGRASS CREEK (LUMP SUM)	4.00	EACH		\$	
2350	22585NN		MICROPILE PROOF TEST	2.00	EACH		\$	
2360	23378EC		CONCRETE SEALING	73,769.00	SQFT		\$	
2370	23813EC		DECK DRAIN	40.00	EACH		\$	
2380	24006EC		MICROPILE VERIFICATION TEST	1.00	EACH		\$	
2390	24179EC		MECHANICAL REINF COUPLER #4-EPOXY COATED	1,964.00	EACH		\$	
2400	24902EC		PVC CONDUIT-3 IN-SCHEDULE 80	492.00	LF		\$	
2410	25028ED		RAIL SYSTEM SINGLE SLOPE - 40 IN	492.00	LF		\$	
2420	25034ED		MICROPILE BOND ZONE	12.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2430	26141EC		GALVANIC ANODE	552.00	EACH		\$	
2440	26209EC		MICROPILES-9 5/8 IN-COMMON	1,544.00	LF		\$	
2450	26210EC		MICROPILES-9 5/8 IN-SOLID ROCK	60.00	LF		\$	

Section: 0008 - BRIDGE - OVER ZORN AVENUE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2460	01643		JUNCTION BOX-24 IN	6.00	EACH		\$	
2470	02231		STRUCTURE GRANULAR BACKFILL	229.60	CUYD		\$	
2480	03299		ARMORED EDGE FOR CONCRETE	69.10	LF		\$	
2490	04797		CONDUIT-3 IN	549.00	LF		\$	
2500	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2510	08020		CRUSHED AGGREGATE SLOPE PROT	271.00	TON		\$	
2520	08033		TEST PILES	439.00	LF		\$	
2530	08052		PILES-STEEL HP14X117	2,684.00	LF		\$	
2540	08095		PILE POINTS-14 IN	32.00	EACH		\$	
2550	08100		CONCRETE-CLASS A	187.30	CUYD		\$	
2560	08104		CONCRETE-CLASS AA	449.20	CUYD		\$	
2570	08141		MECHANICAL REINF COUPLER #6 EPOXY COATED	1,662.00	EACH		\$	
2580	08150		STEEL REINFORCEMENT	27,812.00	LB		\$	
2590	08151		STEEL REINFORCEMENT-EPOXY COATED	160,270.00	LB		\$	
2600	08301		REMOVE SUPERSTRUCTURE	1.00	LS		\$	
2610	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	4.00	EACH		\$	
2620	22585NN		MICROPILE PROOF TEST	2.00	EACH		\$	
2630	23378EC		CONCRETE SEALING	14,477.00	SQFT		\$	
2640	23744EC		EPOXY INJECTION CRACK REPAIR	30.00	LF		\$	
2650	23981EC		PPC I-BEAM TYPE HN 42-49	1,085.30	LF		\$	
2660	24006EC		MICROPILE VERIFICATION TEST	1.00	EACH		\$	
2670	25034ED		MICROPILE BOND ZONE	4.00	EACH		\$	
2680	26209EC		MICROPILES-9 5/8 IN-COMMON	496.00	LF		\$	
2690	26210EC		MICROPILES-9 5/8 IN-SOLID ROCK	16.00	LF		\$	
2700	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS		\$	

Section: 0009 - BRIDGE - OVER MOCKINGBIRD VALLEY ROAD

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2710	01643		JUNCTION BOX-24 IN	4.00	EACH		\$	
2720	02231		STRUCTURE GRANULAR BACKFILL	196.00	CUYD		\$	
2730	03299		ARMORED EDGE FOR CONCRETE	58.90	LF		\$	
2740	08003		FOUNDATION PREPARATION	1.00	LS		\$	
2750	08020		CRUSHED AGGREGATE SLOPE PROT	199.00	TON		\$	
2760	08033		TEST PILES	424.00	LF		\$	
2770	08052		PILES-STEEL HP14X117	2,656.00	LF		\$	
2780	08095		PILE POINTS-14 IN	32.00	EACH		\$	
2790	08100		CONCRETE-CLASS A	158.80	CUYD		\$	
2800	08104		CONCRETE-CLASS AA	224.90	CUYD		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2810	08150		STEEL REINFORCEMENT	22,168.00	LB		\$	
2820	08151		STEEL REINFORCEMENT-EPOXY COATED	47,686.00	LB		\$	
2830	08301		REMOVE SUPERSTRUCTURE	1.00	LS		\$	
2840	08669		PRECAST PC BOX BEAM SB21	632.70	LF		\$	
2850	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	4.00	EACH		\$	
2860	22146EN		CONCRETE PATCHING REPAIR	203.00	SQFT		\$	
2870	23378EC		CONCRETE SEALING	8,731.00	SQFT		\$	
2880	23744EC		EPOXY INJECTION CRACK REPAIR	16.00	LF		\$	
2890	24902EC		PVC CONDUIT-3 IN-SCHEDULE 80	318.00	LF		\$	
2900	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT	1.00	LS		\$	

Section: 0010 - SIGNING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
2910	04903		REFERENCE MARKER	24.00	EACH		\$	
2920	04904		BARRIER MOUNTING BRACKET	12.00	EACH		\$	
2930	06400		GMSS GALV STEEL TYPE A	3,191.00	LB		\$	
2940	06405		SBM ALUMINUM PANEL SIGNS	3,038.00	SQFT		\$	
2950	06406		SBM ALUM SHEET SIGNS .080 IN	301.80	SQFT		\$	
2960	06407		SBM ALUM SHEET SIGNS .125 IN	1,005.90	SQFT		\$	
2970	06410		STEEL POST TYPE 1	1,654.00	LF		\$	
2980	06412		STEEL POST MILE MARKERS	4.00	EACH		\$	
2990	06415		OSS GALV STEEL CANTILEVER	4.00	EACH		\$	
3000	06441		GMSS GALV STEEL TYPE C	598.00	LB		\$	
3010	06449		REM OVERHEAD SIGN SUPPORT STR	5.00	EACH		\$	
3020	06450		REM OVERHEAD STRUC CONC BASE	5.00	EACH		\$	
3030	06451		REMOVE SIGN SUPPORT BEAM	10.00	EACH		\$	
3040	06475		OSS GALV STEEL 60 FT TRUSS	2.00	EACH		\$	
3050	06490		CLASS A CONCRETE FOR SIGNS	186.30	CUYD		\$	
3060	06491		STEEL REINFORCEMENT FOR SIGNS	14,708.00	LB		\$	
3070	20418ED		REMOVE & RELOCATE SIGNS	4.00	EACH		\$	
3080	20419ND		ROADWAY CROSS SECTION	19.00	EACH		\$	
3090	20912ND		BARRIER WALL POST	5.00	EACH		\$	
3100	21373ND		REMOVE SIGN	14.00	EACH		\$	
3110	21596ND		GMSS TYPE D	29.00	EACH		\$	
3120	24631EC		BARCODE SIGN INVENTORY	148.00	EACH		\$	

Section: 0011 - LIGHTING - ZORN AVE INTERCHANGE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3130	04710		POLE 80 FT MTG HT HIGH MAST	4.00	EACH		\$	
3140	04780		FUSED CONNECTOR KIT	18.00	EACH		\$	
3150	04800		MARKER	10.00	EACH		\$	
3160	04820		TRENCHING AND BACKFILLING	3,575.00	LF		\$	
3170	04940		REMOVE LIGHTING	1.00	LS		\$	
3180	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	11.00	EACH		\$	

Report Date 10/21/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3190	20392NS835		ELECTRICAL JUNCTION BOX TYPE C	2.00	EACH		\$	
3200	20410ED		MAINTAIN LIGHTING	1.00	LS		\$	
3210	21543EN		BORE AND JACK CONDUIT	1,240.00	LF		\$	
3220	23161EN		POLE BASE-HIGH MAST	20.00	CUYD		\$	
3230	23778EC		WIRE-NO. 10	2,025.00	LF		\$	
3240	24749EC		HIGH MAST LED LUMINAIRE	16.00	EACH		\$	
3250	24851EC		CABLE-NO. 10/3C DUCTED LIGHTING - ZORN INTERCHANGE ONLY	5,415.00	LF		\$	
3260	24901EC		PVC CONDUIT-2 IN-SCHEDULE 80	610.00	LF		\$	
3270	24902EC		PVC CONDUIT-3 IN-SCHEDULE 80	1,050.00	LF		\$	

Section: 0012 - TRAFFIC LOOPS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3280	04793		CONDUIT-1 1/4 IN	80.00	LF		\$	
3290	04795		CONDUIT-2 IN	20.00	LF		\$	
3300	04811		ELECTRICAL JUNCTION BOX TYPE B	2.00	EACH		\$	
3310	04820		TRENCHING AND BACKFILLING	90.00	LF		\$	
3320	04829		PIEZOELECTRIC SENSOR	6.00	EACH		\$	
3330	04830		LOOP WIRE	2,650.00	LF		\$	
3340	04895		LOOP SAW SLOT AND FILL	600.00	LF		\$	
3350	20359NN		GALVANIZED STEEL CABINET	2.00	EACH		\$	
3360	20360ES818		WOOD POST	4.00	EACH		\$	

Section: 0013 - INTELLIGENT TRANSPORTATION SYSTEMS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3370	02187		SITE PREPARATION	1.00	EACH		\$	
3380	04740		POLE BASE	1.00	EACH		\$	
3390	04795		CONDUIT-2 IN	525.00	LF		\$	
3400	04811		ELECTRICAL JUNCTION BOX TYPE B	1.00	EACH		\$	
3410	04820		TRENCHING AND BACKFILLING	525.00	LF		\$	
3420	04835		WIRE-NO. 4	1,050.00	LF		\$	
3430	08100		CONCRETE-CLASS A	39.70	CUYD		\$	
3440	08150		STEEL REINFORCEMENT	2,779.00	LB		\$	
3450	21059ND		CCTV ASSEMBLY	2.00	EACH		\$	
3460	21066ND		MODEL 336 ENCLOSURE	2.00	EACH		\$	
3470	21069ND		SURGE DEVICE 120 VOLT	2.00	EACH		\$	
3480	21071ND		DATA SURGE DEVICE	2.00	EACH		\$	
3490	21072ND		VIDEO SURGE DEVICE	2.00	EACH		\$	
3500	23842EC		POLE 50 FT-INSTALL	1.00	EACH		\$	
3510	23945EC		INST VARIABLE MESSAGE SIGN-EXIST TRUSS	1.00	EACH		\$	

Section: 0014 - TRAINEES

Report Date 10/21/25

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3520	02742		TRAINEE PAYMENT REIMBURSEMENT CEMENT MASON	1,400.00	HOUR		\$	

Section: 0015 - DEMOBILIZATION &/OR MOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
3530	02568		MOBILIZATION	1.00	LS		\$	
3540	02569		DEMOBILIZATION	1.00	LS		\$	

GENERAL SUMMARY													
ITEM	DESCRIPTION	UNIT	MAINLINE	RAMP 1	RAMP 3	RAMP 5	RAMP 7	ZORN AVENUE	MELLWOOD AVENUE	④ MOT	MULTI-USE PATH		PROJECT TOTALS
02731	REMOVE STRUCTURE (STA 548+03, 153.2' RT ABND R/R BRIDGE OVER MUDDY FORK)	LS	1										1
02898	RELOCATE CRASH CUSHION	EACH											7
02998	MASONRY COATING	SQYD	11,547							7			11,547
05950	EROSION CONTROL BLANKET	SQYD	10,528						114				10,642
05952	TEMP MULCH	SQYD	154,357										154,357
05953	TEMP SEEDING AND PROTECTION	SQYD	115,265										115,265
05963	INITIAL FERTILIZER	TON	4.9										4.9
05964	MAINTENANCE FERTILIZER	TON	2.9										2.9
05985	SEEDING AND PROTECTION	SQYD	95,011										95,011
05992	AGRICULTURAL LIMESTONE	TON	58.9										58.9
06404	FLEXIBLE DELINEATOR POST-M/Y	EACH			16	21	18		1,178				55
06510	PAVE STRIPING-TEMP PAINT-4 IN	LF											1,178
06511	PAVE STRIPING-TEMP PAINT-6 IN	LF								194,500			194,500
06530	PAVE STRIPING REMOVAL-4 IN	LF							1,178				1,178
06531	PAVE STRIPING REMOVAL-6 IN	LF		1,323		521		883	801	56,052			59,580
06542	PAVE STRIPING-THERMO-6 IN W	LF	31,419	1,746	2,238	1,987	2,181	2,775	1,022				43,368
06543	PAVE STRIPING-THERMO-6 IN Y	LF	24,181	956	924	1,038	841	2,400	684				31,024
06546	PAVE STRIPING-THERMO-12 IN W	LF	2,358	184	269	391	441	375					4,018
06547	PAVE STRIPING-THERMO-12 IN Y	LF	54	54	55	47	76	167					399
06568	PAVE MARKING-THERMO STOP BAR-24IN	LF		12	12	12		138					162
06569	PAVE MARKING-THERMO CROSS-HATCH	SQFT	1,949	254	0	306	0		110				2,619
06573	PAVE MARKING-THERMO STR ARROW	EACH							4				4
06574	PAVE MARKING-THERMO CURV ARROW	EACH		8		10		8					30
06585	PAVEMENT MARKER TY IVA-MM/ TEMP	EACH	156	34		27		44	39				300
06586	PAVEMENT MARKER TY IVA-MY TEMP	EACH	169	48					83				300
06600	REMOVE PAVEMENT MARKER TYPE V	EACH	920	42	40	58	75						1,135
06610	INLAID PAVEMENT MARKER-MW	EACH	636										636
06611	INLAID PAVEMENT MARKER-MY	EACH	292										292
06613	INLAID PAVEMENT MARKER-B W/R	EACH	22	8	3	15	8	22					78
06614	INLAID PAVEMENT MARKER-B Y/R	EACH	0	13	12	13	10						48
08003	FOUNDATION PREPARATION	LS	1										1
15094	S MANHOLE ADJUST TO GRADE	EACH						1					1
10020NS	FUEL ADJUSTMENT	DOLL	102,385										102,385
10030NS	ASPHALT ADJUSTMENT	DOLL	240,409										240,409
20191ED	OBJECT MARKER TY 3	EACH					1	3					4
20257NC	SITE PREPARATION	LS	1										1
20259ED	TEMPORARY MEDIAN CROSSOVER	EACH								2			2
20411ED	LAW ENFORCEMENT OFFICER	HOURL	400										400
20432E5112	REMOVE CRASH CUSHION	EACH	11										11
20521NS719	REMOVE BRIDGE END CONNECTOR	EACH	33	1	1								35
20550ND	SAWCUT PAVEMENT	LF	24,912	424		300			421				26,057
21590EN	SOUND BARRIER WALL	SQFT	72,846										72,846
22045NN	FLUME INLET TY 2-MOD	EACH	1										1
22520EN	PAVE MARKING-THERMO YIELD BAR-36 IN	LF		14	16	14	15	51	34				144
22880ED	BARRIER WALL TRANSITION	LF	73										73
23148EN	END ANCHORS	EACH	2										2
23158E5505	DETECTABLE WARNINGS	SQFT									122		122
23253E5717	PAVE MARK TY 1 TAPE CROSS HATCH	SQFT	62					110					172
23496EC	MEDIAN CROSSOVER REMOVAL	EACH								2			2
23607EC	PAVE MARK THERMO-LANE REDUCTION ARROW	EACH	3										3
23875NC	REMOVE THERMOPLASTIC ARROWS	EACH	2										2

- GENERAL SUMMARY NOTES
- ①

QUANTITIES BROUGHT FORWARD FROM EROSION CONTROL SHEETS
- ④

FOR MAINTENANCE OF TRAFFIC
- ⑤

SEE SPECIAL NOTE FOR SOUND BARRIER WALL & SHEETS R31-R40

FOR TRIMARC QUANTITIES -
SEE TRIMARC SUMMARY SHEET R111

FOR PAVING QUANTITIES -
SEE PAVING SUMMARY SHEET R02G

GENERAL SUMMARY													
ITEM	DESCRIPTION	UNIT	MAINLINE	RAMP 1	RAMP 3	RAMP 5	RAMP 7	ZORN AVENUE	MELLWOOD AVENUE	④ MOT	MULTI-USE PATH		PROJECT TOTALS
02731	REMOVE STRUCTURE (STA 548+03, 153.2' RT ABND R/R BRIDGE OVER MUDDY FORK)	LS	1										1
02898	RELOCATE CRASH CUSHION	EACH											7
02998	MASONRY COATING	SQYD	11,547							7			11,547
05950	EROSION CONTROL BLANKET	SQYD	10,528						114				10,642
05952	TEMP MULCH	SQYD	154,357										154,357
05953	TEMP SEEDING AND PROTECTION	SQYD	115,265										115,265
05963	INITIAL FERTILIZER	TON	4.9										4.9
05964	MAINTENANCE FERTILIZER	TON	2.9										2.9
05985	SEEDING AND PROTECTION	SQYD	95,011										95,011
05992	AGRICULTURAL LIMESTONE	TON	58.9										58.9
06404	FLEXIBLE DELINEATOR POST-M/Y	EACH			16	21	18		1,178				55
06510	PAVE STRIPING-TEMP PAINT-4 IN	LF											1,178
06511	PAVE STRIPING-TEMP PAINT-6 IN	LF								194,500			194,500
06530	PAVE STRIPING REMOVAL-4 IN	LF							1,178				1,178
06531	PAVE STRIPING REMOVAL-6 IN	LF		1,323		521		883	801	56,052			59,580
06542	PAVE STRIPING-THERMO-6 IN W	LF	31,419	1,746	2,238	1,987	2,181	2,775	1,022				43,368
06543	PAVE STRIPING-THERMO-6 IN Y	LF	24,181	956	924	1,038	841	2,400	684				31,024
06546	PAVE STRIPING-THERMO-12 IN W	LF	2,358	184	269	391	441	375					4,018
06547	PAVE STRIPING-THERMO-12 IN Y	LF		54	55	47	76	167					399
06568	PAVE MARKING-THERMO STOP BAR-24IN	LF		12	12	12		138					162
06569	PAVE MARKING-THERMO CROSS-HATCH	SQFT	1,949	254	0	306	0		110				2,619
06573	PAVE MARKING-THERMO STR ARROW	EACH							4				4
06574	PAVE MARKING-THERMO CURV ARROW	EACH		8		10		8					30
06585	PAVEMENT MARKER TY IVA-MM/ TEMP	EACH	156	34		27		44	39				300
06586	PAVEMENT MARKER TY IVA-MY TEMP	EACH	169	48					83				300
06600	REMOVE PAVEMENT MARKER TYPE V	EACH	920	42	40	58	75						1,135
06610	INLAID PAVEMENT MARKER-MW	EACH	636										636
06611	INLAID PAVEMENT MARKER-MY	EACH	292										292
06613	INLAID PAVEMENT MARKER-B W/R	EACH	22	8	3	15	8	22					78
06614	INLAID PAVEMENT MARKER-B/Y/R	EACH	0	13	12	13	10						48
08003	FOUNDATION PREPARATION	LS	1										1
15094	5' MANHOLE ADJUST TO GRADE	EACH						1					1
10020NS	FUEL ADJUSTMENT	DOLL	102,385										102,385
10030NS	ASPHALT ADJUSTMENT	DOLL	240,409										240,409
20191ED	OBJECT MARKER TY 3	EACH					1	3					4
20257NC	SITE PREPARATION	LS	1										1
20259ED	TEMPORARY MEDIAN CROSSOVER	EACH								2			2
20411ED	LAW ENFORCEMENT OFFICER	HOURL	400										400
20432E5112	REMOVE CRASH CUSHION	EACH	11										11
20521NS719	REMOVE BRIDGE END CONNECTOR	EACH	33	1	1								35
20550ND	SAWCUT PAVEMENT	LF	24,912	424		300			421				26,057
21590EN	SOUND BARRIER WALL	SQFT	72,846										72,846
22045NN	FLUME INLET TY 2-MOD	EACH	1										1
22520EN	PAVE MARKING-THERMO YIELD BAR-36 IN	LF		14	16	14	15	51	34				144
22880ED	BARRIER WALL TRANSITION	LF	73										73
23148EN	END ANCHORS	EACH	2										2
23158E5505	DETECTABLE WARNINGS	SQFT									122		122
23253E5717	PAVE MARK TY 1 TAPE CROSS HATCH	SQFT	62					110					172
23496EC	MEDIAN CROSSOVER REMOVAL	EACH								2			2
23607EC	PAVE MARK THERMO-LANE REDUCTION ARROW	EACH	3										3
23875NC	REMOVE THERMOPLASTIC ARROWS	EACH	2										2

- GENERAL SUMMARY NOTES
- ①

QUANTITIES BROUGHT FORWARD FROM EROSION CONTROL SHEETS
- ④

FOR MAINTENANCE OF TRAFFIC
- ⑤

SEE SPECIAL NOTE FOR SOUND BARRIER WALL & SHEETS R31-R40

FOR TRIMARC QUANTITIES -
SEE TRIMARC SUMMARY SHEET R111

FOR PAVING QUANTITIES -
SEE PAVING SUMMARY SHEET R02G

GENERAL SUMMARY

[illegible]

GENERAL SUMMARY NOTES

④ FOR MAINTENANCE OF TRAFFIC

⑤ FOR FENCE WOVEN WIRE TY 1 & GATE

⑦ FOR MUP HANDRAIL ANCHORING

⑧ SEE NOTE ON R008

(10) TEMPORARY MSE RETAINING WALL

FOR TRIMARC QUANTITIES -
SEE TRIMARC SUMMARY SHEETS

FOR PAVING QUANTITIES -
SEE PAVING SUMMARY SHEET

GENERAL SUMMARY

[illegible]

GENERAL SUMMARY NOTES

④ FOR MAINTENANCE OF TRAFFIC

⑤ FOR FENCE WOVEN WIRE TY 1 & GATE

⑦ FOR MUP HANDRAIL ANCHORING

⑧ SEE NOTE ON R008

⑩ TEMPORARY MSE RETAINING WALL

FOR TRIMARC QUANTITIES -
SEE TRIMARC SUMMARY SHEETS

FOR PAVING QUANTITIES -
SEE PAVING SUMMARY SHEET