



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

April 26, 2023

SUBJECT: Route FAU 5560 (Dixon Avenue)
Section 17-00228-00-BR
Whiteside County
Contract No. 85734
Item 130
April 28, 2023 Letting
Addendum C

NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Revised pages 6 – 10 of the Special Provisions.

Prime contractors must utilize the enclosed material when preparing their bid and must include any changes to the Schedule of Prices in their bid.

Very truly yours,

A handwritten signature in black ink, appearing to read "Jack A. Elston".

Jack A. Elston, P.E.
Bureau Chief, Design and Environment

used to lift the individual prefabricated bridge superstructure units shall be in accordance with the approved shop drawings. The prefabricated superstructure units shall not be placed until they are inspected for damage at the jobsite by the Engineer. The units shall be inspected for damage again after being set in place and prior to installing forms for the bridge deck and backwall joints. Damage noted by the Engineer shall be repaired by the Contractor to the satisfaction of the Engineer at no additional cost to the project.

After completion of erection, nonshrink grout shall be furnished and cast into any formed holes provided in the bridge deck to accommodate rigging used to facilitate lifting the prefabricated bridge superstructure units. The nonshrink grout shall conform to the requirement listed in the shop drawings.

b. Basis of Payment. The completed work will be paid for at the contract unit price, Sq. Ft. for ERECTING SUPERSTRUCTURE, which includes all labor, equipment, materials, loading and delivery of the girders to the project site and testing necessary to complete the described work, including polymer concrete deck joints. All other related appurtenances for the Press Brake Formed Tub Girders (PBFTG) shown in the plans and specifications including any bracing, fasteners, side retainers, anchors, washers, bearing pads, etc. shall be provided by the contractor. All work shall be included in ERECTING SUPERSTRUCTURE.

~~CLOSURE POUR MATERIAL:~~

~~a. Description. This work consists of providing and casting Closure Pour Material into the bridge deck and backwall joints of the prefabricated bridge superstructure units to form a complete superstructure system. The material shall be as specified in the shop drawings by the Fabricator's SE. The work also includes furnishing the specified material for test specimens and job site trial batches that simulate field casting the material. Work for the trial batches shall be done at least three (3) weeks prior to erecting the prefabricated bridge superstructure units at the project site. The following information pertaining to materials, equipment, and construction data shall be submitted for review and approval a minimum of 90 days prior to the estimated date for casting the joints of the prefabricated units.~~

~~b. Materials Data.~~

~~Closure Pour Material shall be 100% reactive, rapid setting, solvent-free methyl methacrylate (MMA) polymer concrete system that can be used as a repair for partial or full depth patching, grouting, and structural applications. This system is to be used on horizontal concrete surfaces, on grade, above and below grade.~~

~~The polymer concrete shall consist of a two-component system. The liquid component shall consist of a solvent free 100% reactive, low viscosity methyl methacrylate (MMA). The powder component shall consist of a prepackaged blend of sand, inert fillers, polymers, and initiators. The material can be applied at a minimum 1/2" (13 mm) thickness. For deeper patching, the material should be extended with a special aggregate.~~

~~c. Application Procedure~~

~~Surface Preparation: All surfaces that are to receive the material must be thoroughly clean, dry and free of all dirt, grease, rust and other contaminants that might interfere with the proper adhesion of the polymer concrete. All damaged or deteriorated concrete shall be removed using jack hammers or any other means and cut back to sound concrete.~~

CLOSURE POUR MATERIAL:

Material to be used for the longitudinal and transverse closure pours and sling holes shall be Transpo T 17, Kwik Bond PC 1121, or approved equal. Closure pour material shall be stored, mixed, and installed in accordance with the manufacturer's requirements, including preparation of surfaces and any application of recommended priming or bonding agents.

Quality Control. Submit a copy of a quality control plan for the material. Quality control records shall be submitted to the Engineer within 24 hours after the date of material placement covered by the record.

Compression Testing Requirements. A minimum of three sets of compressive strength test samples shall be made for each day of placement. Test sample requirements and method for conducting the compression test shall be specified. Each set shall consist of at least three samples. All test samples must be cured using the same method of curing as outlined in the quality control plan. The compressive strength tests must be conducted on a minimum of three samples.

This work will not be paid for separately, but shall be considered as included in the contract unit price per SF for ERECTING SUPERSTRUCTURE, and no additional compensation will be allowed.

~~Priming: Priming is done with a MMA primer using either rollers or brushes at a rate of 100 ft²/gal. The primer resin shall be mixed with an appropriate amount of powder hardener (BPO) as shown in Table 1 below. The prime coat must be allowed to cure tack free before application of the patching material.~~

~~Table 1: Mixing Instructions for Primer~~

~~Ambient Temperature °F No. of 30g Bags of BPO per gal of Resin~~

~~14 — 35 6
36 — 55 5
56 — 75 4
76 — 100 3~~

~~Mixing: A rotary drum mortar mixer may be used for mixing. The inside of the mixer should be clean and dry. Prior to mixing, the mixer should be pre-wet with a quart of T-17 liquid. Add appropriate amount of liquid to the mixer, the powder component, and mix until uniform consistency. Next, add the additional coarse aggregate and re-mix for another minute. The amount of aggregate and resin added per bag of powder depends on the depth of the patch. Refer to Table 2 for suggested mix ratios.~~

~~Table 2: Mixing Instructions per 50 pound bag of powder~~

| Depth of Patch (in) | % Extension | Agg. Size (in) | Amt. Agg. (lb) | T-17 Liquid (gal) | Yield (ft³) |
|--------------------------------|------------------------|---------------------------|---------------------------|------------------------------|-----------------------------------|
| 2 and above | 100% | 3/4 x 3/8 | 50 | 0.875 | 0.72 |
| 1 — 2 | 50% | 3/8 x 3/16 | 25 | 0.750 | 0.56 |
| 1/2 — 1 | 0% | - | - | 0.625 | 0.40 |

~~d. Finishing:~~

~~Typical concrete finishing tools can be used to place and finish the polymer concrete. Steel trowels, floats, or screeds can be used to obtain a "closed" surface. Pencil vibrators may be used if the pour is over six inches thick or reinforcing steel clearance is less than or equal to the size of the coarse aggregate in the mix. Do not overwork the materials. Tinning or broom finishing is not recommended.~~

~~e. Packaging:~~

~~The standard packaging shall consist of a powder component, coarse aggregate, and a liquid component in the following sizes:~~

| | | |
|-------------------------------------|---------------------|-----------------------|
| Powder: 50 pound bags | | |
| Aggregate: 50 pound bags | | |
| Liquid: Liquid 55 | Gal Drum | 5 Gal Pail |
| Gross Weight (lb) | 457 | 42.6 |
| Net Weight (lb) | 420 | 38 |
| Nominal Volume (gal) | 54.1 | 4.9 |

~~Table 3: Physical Properties~~

| Property | Unit of Measure | Test |
|---|---|-------------------------------|
| Primer/Sealer | | |
| Viscosity | 40 – 100 cps(mpa S) Test | Brookfield |
| Density | 8.16 lb/gal (0.98 g/mL) | ASTM D2849 |
| Pot Life @ 70°F (21°C) | 8 – 15 minutes | AASHTO T237 |
| Solids Content | 100% | ASTM D1644 |
| Resin | | |
| Viscosity | 10 – 12 cps(mpa S) | Brookfield |
| Density | 7.63 lb/gal (0.91 g/mL) | ASTM D2849 |
| Pot Life @ 70°F (21°C) | 24 minutes | AASHTO T237 |
| Solids Content (w/catalyst) | 100% | ASTM D1644 |
| Mortar (No Extension) | | |
| Compressive Strength | 8000 – 9000 psi (55 – 62 MPa) | ASTM C579 Method B |
| Flexural Strength | 1800 – 2500 psi (13 – 17 MPa) | ASTM D790 |
| Linear Shrinkage | <0.2% | DuPont |
| Tensile Strength | 1000 – 1200 psi (6.90 – 8.25 MPa) | ASTM D638 Type I |
| Compressive Modulus | 1.1 – 1.2 x 10⁶ (7.50 – 8.50 GPa) | ASTM C579 Method B |
| Tensile Adhesion (pull-off concrete) | >250 psi (>1.7 MPa) | ACI 503R |

~~* To be used as general guidelines only~~

~~f. Equipment Data. Specify size and type of equipment that will be used to mix and place the material.~~

~~g. Construction Data:~~

~~1. Storage. Indicate storage requirement of constituent materials, fibers, and additives as required by the manufacturer's specifications in order to protect materials against exposure to moisture and loss of physical and mechanical properties.~~

~~2. Temperature Limitations. Indicate ambient air and concrete substrate temperature requirements necessary for placing the material.~~

~~3. Mixing Protocol. Specify a mixing protocol that provides direction for any required sequence of mixing together the material components.~~

~~4. Forms. Specify any formwork requirements including the need to be watertight, coated to prevent absorption of water, and/or resistance needed for the hydraulic pressure of the mix.~~

~~5. Quality Control. Submit a copy of a quality control plan for the material. Quality control records shall be submitted to the Engineer within 24 hours after the date of material placement covered by the record.~~

~~6. Compression Testing Requirements. A minimum of three sets of compressive strength test samples shall be made for each day of placement. Test sample requirements and method for conducting the compression test shall be specified. Each set shall consist of at least three samples. All test samples must be cured using the same method of curing as outlined in the quality control plan. The compressive strength tests must be conducted on a minimum of three samples.~~

~~7. Casting Process. Specify any casting requirements such as pouring the material in incremental lifts, pour length limitations, vibrating the material, surface finish, and/or the need to pour thicker/higher than the adjacent concrete. If the material is required to be poured thicker/higher than the adjacent concrete, specifications shall also be provided for grinding the top of the bridge deck joints flush with the top of the precast bridge decks. Consideration shall also be given to final surface preparation requirements indicated below~~

~~8. Curing. Specify curing requirements including the use and/or suitability of curing compounds, curing blankets, and/or moisture requirements. The timing and duration of the required curing shall also be specified.~~

~~9. Final Surface Preparation. Specify final surface preparation of the bridge deck joints required following curing.~~

~~The trial batch shall consist of the Contractor building two (2) forms on site and out of the influence area of active construction where the Closure Pour Material trial batch can be placed for curing and testing. The forms shall simulate the field casting that will be required for the prefabricated superstructure units.~~

~~1. Form 1 shall be a minimum 3 ft long representation of the longitudinal joint between the precast deck panels.~~

~~2. Form 2 shall be a minimum 3 ft long representation of the vertical keyway joint between the precast concrete backwall units.~~

~~The forms shall be built on a flat surface. The top concrete surface shall be hand troweled smooth immediately after pouring. All exposed concrete surfaces shall have standard curing compound applied after pouring and finishing. In lieu of building the forms onsite, the forms may be precast and shipped to the project site.~~

~~Perform the trial batch under similar ambient conditions (e.g. time of day, weather, etc.) as anticipated during construction. Include documentation of ambient condition at the time of the trial batch and anticipated ambient conditions at time of trial placement with the submittal to the Engineer.~~

~~Prepare compression testing samples and test samples per compression testing requirements. Provide the results of temperature, slump, density (unit weight), and compressive strength testing at 4 and 7 days (at a minimum). Each compressive strength test must be conducted according to subsection d.6 of this special provision. Submit the results of all tests above to the Engineer for review and approval a minimum of 10 calendar days prior to casting the Closure Pour Material into the bridge deck and backwall joints. The Engineer will perform Quality Assurance testing over the course of 21 days after the casting is completed. The trial placement must be witnessed by the Engineer.~~

~~The trial placement must use the same equipment, forming, casting, and curing procedures that will be used during construction.~~

| | | |
|---------------------|-----------|----------------|
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~~To be considered a successful trial batch, the compressive strength must meet the values specified in the shop drawings by the Fabricator's SE and manufacturer at 4 days and 7 days and there must also be no segregation of the Closure Pour Material and no visible voids when the forms are removed. If the trial batch does not meet these requirements, discard the material and repeat the trial batch.~~

~~Once the testing is complete, it will be the Contractor's responsibility to remove and dispose of the test members off site as part of this pay item.~~

~~This work will not be paid for separately, but shall be considered as included in the contract unit price Sq. Ft. for ERECTING SUPERSTRUCTURE, and no additional compensation will be allowed.~~

PROPOSED STORM SEWER CONNECTION TO EXISTING STORM SEWER:

Description. This work shall consist of the connection of proposed storm sewer pipes to existing storm sewer pipes and manholes.

Materials. Portland cement concrete shall be Class SI concrete meeting the requirements of Section 1020 of the Standard Specifications for Road and Bridge Construction. Cement Mortar, cement/concrete block, and precast concrete barrel sections shall meet the materials requirements of Article 602.02 of the Standard Specifications for Road and Bridge Construction.

Construction. This work will be performed per the requirements of the applicable articles of Sections 550 and 602 of the Standard Specifications for Road and Bridge Construction.

The connection of proposed storm sewer to existing storm sewers shall be achieved via concrete collar. All concrete collars shall be constructed to provide a minimum of 6" of encasement around the outside diameter of the pipe and shall extend a minimum of 12" to either side of the pipe joint.

Concrete collars will be provided with a minimum of 24 hours of cure time before being backfilled, no exceptions. Reinforcement bars will not be required.

Method of Measurement. This work will be paid for by each complete connection regardless of pipe or structure size installed or material required.

Basis of Payment. This work will be paid for at the contract unit price per Each for PROPOSED STORM SEWER CONNECTION TO EXISTING STORM SEWER.

WASHOUT BASIN:

a. Description. This work consists of providing, operating and maintaining concrete washout facilities, such as washout pits and vinyl or metal washout containers. Washout basins shall be placed in locations that provide convenient access to concrete trucks, preferably near the area where concrete is being poured.

Washout basins shall not be placed within 50 feet of storm drains, open ditches, or waterbodies. Appropriate gravel or rock should cover approaches to concrete washout facilities when they are located on undeveloped property. On large sites with extensive concrete work, washouts must be placed at multiple locations for ease of use by ready mixed truck drivers and approved by the Resident Engineer. If the washout facility is not within view from the pour location, signage shall direct the truck drivers.

Concrete washout facilities shall be inspected after each use and after heavy rains for leaks, damage to plastic linings and sidewalls by construction activities, and to determine whether they have been filled to over 75 percent capacity. When the washout container is filled to over 75 percent of its capacity, the wash water must be vacuumed off or allowed to evaporate to avoid overflows. When the remaining cementitious solids have hardened, they must be removed and disposed of properly. Damage to the container must be repaired promptly. Before heavy rains, the washout container's liquid level should be lowered or the