Wisconsin Department of Transportation

February 22, 2017
Division of Transportation Systems Development
Bureau of Project Development 4802 Sheboygan Avenue, Rm 601 P O Box 7916
Madison, WI 53707-7916
Telephone: (608) 266-1631
Facsimile (FAX): (608) 266-8459

## NOTICE TO ALL CONTRACTORS:

Proposal \#02: 1007-10-86, WISC 2017091 Illinois State Line - Madison CTH N Interchange IH 39
Dane County

1007-11-81, WISC 2017092
Illinois State Line - Madison CTH N Interchange Area IH 39
Dane County

Letting of March 14, 2017
This is Addendum No. 01, which provides for the following:

## Special Provisions:

| Added Special Provisions |  |
| :---: | :--- |
| Article <br> No. | Description |
| 85 | Optimized Aggregate Gradation and Concrete Mixtures |
| 86 | Installing Temporary Lighting System |

## Schedule of Items:

| Revised Bid Item Quantities |  |  |  |  |  |  |  |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Bid Item | Item Description | Unit | Old <br> Quantity | Revised <br> Quantity | Proposal <br> Total |  |  |
| 455.0605 | Tack Coat | Gal | 7,546 | 146 | 7,692 |  |  |
| 460.6223 | HMA Pavement 3 MT 58-28 S | Ton | 5,914 | 409 | 6,323 |  |  |
| 460.6224 | HMA Pavement 4 MT 58-28 S | Ton | 4,645 | 327 | 4,972 |  |  |
| 652.0225 | Conduit Rigid Nonmetallic Schedule 40 2- <br> inch | LF | 9,159 | -353 | 8,806 |  |  |
| 654.0106 | Concrete Bases Type 6 | Each | 47 | -2 | 45 |  |  |
| 655.0610 | Electrical Wire Lighting 12 AWG | LF | 8,886 | -330 | 8,556 |  |  |
| 655.0625 | Electrical Wire Lighting 6 AWG | LF | 11,238 | -393 | 10,845 |  |  |
| 655.0630 | Electrical Wire Lighting 4 AWG | LF | 19,128 | -786 | 18,342 |  |  |
| 657.0255 | Transformer Bases Breakaway 11 1/2-inch <br> Bolt Circle | Each | 52 | -6 | 46 |  |  |
| 657.0327 | Poles Type 6-Aluminum | Each | 47 | -2 | 45 |  |  |
| 657.0715 | Luminaire Arms Truss Type 4 1/2-inch Clamp <br> 15-ft | Each | 50 | -2 | 48 |  |  |
| 659.1120 | Luminaires Utility LED B | Each | 50 | -2 | 48 |  |  |
| SPV.0060.351 | Pull Boxes Non-conductive 24x42-inch | Each | 22 | -2 | 20 |  |  |


| Added Bid Item Quantities |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Bid Item | Item Description | Unit | Old <br> Quantity | Revised <br> Quantity | Proposal <br> Total |
| 405.0100 | Coloring Concrete WisDOT Red | CY | 0 | 579 | 579 |
| SPV.0105.350 | Installing Temporary Lighting System | LS | 0 | 1 | 1 |

Plan Sheets:

| Revised Plan Sheets |  |
| :---: | :--- |
| Plan Sheet | Plan Sheet Title (brief description of changes to sheet) |
| $\mathbf{1 0 0 7 - 1 0 - 8 6}$ |  |
| 92 | Plan Detail Infiltration Area Grading, Southeast (revised grading limits) |
| 156 | Signing (removed two proposed lighting units) |
| 157 | Signing (removed two proposed lighting units) |
| 176 | Lighting (removed two proposed lighting units) |
| 245 | Traffic Control Stage 1 (removed two proposed lighting units) |
| 256 | Traffic Control Stage 2A (removed two proposed lighting units) |
| 265 | Traffic Control Stage 2B (removed two proposed lighting units) |
| 270 | Trafic Control Stage 2C (temporary lighting note added) |
| 271 | Trafic Control Stage 2C(temporary lighting note added) |
| 273 | Traffic Control Stage 2C (removed two proposed lighting units) |
| 274 | Traffic Control Stage 2C (temporary lighting added) |
| 278 | Traffic Control Stage 2D(temporary lighting note added) |
| 279 | Traffic Control Stage 2D(temporary lighting note added) |
| 281 | Traffic Control Stage 2D (removed two proposed lighting units \& added temp lights) |
| 282 | Traffic Control Stage 2D (temporary lighting added) |
| 289 | Traffic Control Stage 2E (removed two proposed lighting units) |
| 303 | Traffic Control Detour (revised two signs) |
| 328 | Miscellaneous Quantities (revised earthwork summary) |
| 329 | Miscellaneous Quantities (revised concrete pavement items schedule) |
| 330 | Miscellaneous Quantities (revised asphalt items schedule) |
| 331 | Miscellaneous Quantities (revised asphalt items schedule) |
| 352 | Miscellaneous Quantities (revised lighting item schedules) |
| 353 | Miscellaneous Quantities (revised lighting item schedules) |
| 628 | Structure Plan R-13-312 (revised to include wall painting) |
| 629 | Structure Plan R-13-312 (revised to include wall painting) |
| $677-698$ | Earthwork Data (revised data) |
|  |  |
| $\mathbf{1 0 0 7 - 1 1 - 8 1}$ |  |
| $33-34$ | Plan Details (revised proposed fencing location) |
| 182 | Plan and Profile (revised proposed fencing location) |


| Added Plan Sheets |  |
| :---: | :---: |
| Plan Sheet | Plan Sheet Title (brief description of why sheet was added) |
| 1007-10-86 |  |
| 698 A | Earthwork Data (added sheet for drainage ditch DDW) |
| 939A-939F | Cross Sections (added sheets for drainage ditch DDW) |

The responsibility for notifying potential subcontractors and suppliers of these changes remains with the prime contractor.

Sincerely,

## Mike Coleman

Proposal Development Specialist
Proposal Management Section

## ADDENDUM NO. 01

## 1007-10-86/1007-10-81

February 22, 2017

## Special Provisions

## 85. Optimized Aggregate Gradation and Concrete Mixtures

## Description

This special provision describes optimized aggregate gradation, optional optimized mixture designs, and associated additional requirements for class 1 concrete used in concrete pavements. Conform to standard specification part 7 and as follows:

## Optimized Aggregate Gradation

A Job Mix Formula (JMF) contains all of the following:
Proportions for each aggregate fraction conforming to Table 1.
Individual gradations for each aggregate fraction.
Composite gradation of the combined aggregates including working ranges on each sieve in accordance with Table 2.
Submit the target JMF and aggregate production gradation test results to the engineer for review 10 business days before initial concrete placement.

TABLE 1 TARANTULA CURVE GRADATION BAND

| SIEVE SIZES | PERCENT RETAINED |
| :---: | :---: |
| $2 \mathrm{in}$. | 0 |
| $11 / 2 \mathrm{in}$. | $\leq 5$ |
| 1 in. | $\leq 16$ |
| $3 / 4 \mathrm{in}$. | $\leq 20$ |
| $1 / 2 \mathrm{in}$. | $4-20$ |
| $3 / 8 \mathrm{in}$. | $4-20$ |
| No. 4 | $4-20$ |
| No. $8{ }^{[1]}$ | $\leq 12$ |
| No. $16^{[1]}$ | $\leq 12$ |
| No. $30^{[1][2]}$ | $4-20$ |
| No. $50^{[2]}$ | $4-20$ |
| No. $100^{[2]}$ | $\leq 10$ |
| No. $200^{[2]}$ | $\leq 2.3$ |

${ }^{[1]}$ Minimum of $15 \%$ retained on the sum of the \#8, \#16, and \#30 sieves.
${ }^{[2]}$ Conform to $24-34 \%$ retained of fine sand on the \#30-200 sieves.

TABLE 2 JMF WORKING RANGE

| SIEVE SIZES | WORKING RANGE ${ }^{[1]}$ <br> (PERCENT) |
| :---: | :---: |
| $2 \mathrm{in}$. | $\pm 5$ |
| $11 / 2 \mathrm{in}$. | $\pm 5$ |
| 1 in. | $\pm 5$ |
| $3 / 4 \mathrm{in}$. | $\pm 5$ |
| $1 / 2 \mathrm{in}$. | $\pm 5$ |
| $3 / 8 \mathrm{in}$. | $\pm 5$ |
| No. 4 | $\pm 5$ |
| No. 8 | $\pm 4$ |
| No. 16 | $\pm 4$ |
| No. 30 | $\pm 4$ |
| No. 50 | $\pm 3$ |
| No. 100 | $\pm 2$ |
| No. 200 | $\leq 1.6$ |

${ }^{[1]}$ Working range limits of composite gradation based on moving average of 4 tests. Test each component aggregate once per 1,500 cubic yards during concrete production. Take samples by one of the following sampling methods:

1. At the belt leading to the weigh hopper.
2. Working face of the stock piles at the concrete plant if approved by the engineer.

The department will take independent QV samples using the same sampling method the contractor uses for QC sampling. QV samples may be taken by the contractor's QC personnel if witnessed by the department's QV personnel. The department will split each QV sample and retain half for all dispute resolutions. If QV test results conform to the specification, the department will take no further action. If QV test results are nonconforming, add the QV to the QC test results as if it were an additional QC test.
If, during concrete production, the moving average of four for any sieve fall outside the allowable JMF working range do the following:

1. Notify the engineer of the test results within 1 business day from the time of sampling.
2. Make immediate adjustments to the JMF, within the limits specified in Table 3;
3. Review JMF adjustments with the engineer. Both the contractor and engineer will sign the adjusted JMF if the adjustments comply with Table 3.
4. If the moving average of four falls outside the adjusted allowable working range, stop production and provide a new mix design including JMF to the engineer.

TABLE 3 ALLOWABLE JMF ADJUSTMENTS

| SIEVE SIZES | ALLOWABLE ADJUSTMENT <br> (PERCENT) |
| :---: | :---: |
| $\geq$ No. 4 | $\pm 5$ |
| No. $8-$ No. 30 | $\pm 4$ |
| No. 50 | $\pm 3$ |
| No. 100 | $\pm 2$ |

## Dispute Resolution

The department will resolve disputes as specified in standard spec 106.3.4.3.5 using QV split samples.

## Sublot and Lot Size

A sublot consists of up to 1,500 cubic yards. A lot consists of two sublots.

## Optimized Concrete Mixtures

The contractor may use a reduced cementitious content for concrete pavement placed if the contractor does the following:

1. Use an optimized aggregate gradation as defined in this special provision.
2. Conform to the additional testing requirements for flexural strength as specified in the contract special provisions.
3. Submit aggregate gradation result records no more than 2 years old when developing the mix design.
4. Determine the volume of voids in the optimized aggregates using ASTM C29.
5. Download and follow the instructions tab of the Optimized Gradation and Mix Design Spreadsheet located at:
http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx
6. Design an appropriate paste content based upon the Performance-based PCC Mix Design Guide located at:
http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx
7. Provide a minimum Vpaste/Vvoids of 1.25. (Paste/Void ratio equals the volume of paste divided by the volume of voids.).
8. Evaluate workability of trial batches by following section 6.8 of AASHTO Draft Performance Engineered Concrete Pavement Mixtures Specifications located at:
http://wisconsindot.gov/Pages/doing-bus/eng-consultants/cnslt-rsrces/qmp/default.aspx
9. Submit trial batch workability results when submitting the mix design.
10. Submit the CP Tech center computer spreadsheet concrete mix design to the engineer for review at least 3 business days before producing concrete.
11. Provide a minimum cement content of 520 pounds per cubic yard, except if using type I, IL, or III cement in a mix where the geologic composition of the coarse aggregate is primarily igneous or metamorphic materials, provide a minimum cement content of 660 pounds per cubic yard.
12. The contractor may use class $C$ fly ash or grade 100 or 120 slag as a partial replacement for cement. For binary mixes use up to $30 \%$ fly ash or slag. For ternary mixes use up to $30 \%$ fly ash plus slag in combination. Replacement values are in percent by weight of the total cementitious material in the mix.
13. See CMM 8-70.2.2.3 for additional guidance.

## 86. Installing Temporary Lighting System SPV.0105.350.

## A Description

This special provision describes the installation and removal of a temporary lighting system. Lighting system shall be provided complete with all circuitry, controls, luminaires, arms, poles, terminations, trenching, directional boring and conduit sealing required for an operational, temporary lighting system for the duration of the project and as hereinafter provided.

## B Materials

Provide all necessary materials required to install a complete and operational temporary lighting system consisting of any combination of the following new or existing lighting equipment: wood poles, metal poles, direct buried metal or fiberglass poles, luminaires, luminaire arms, pole accessories,
screw-in or concrete pole bases, overhead or underground conductors, conduit, guy wires, pull boxes, controls, circuit breakers, enclosures, metering, and all necessary equipment and connections.

Temporary HPS luminaries shall be a minimum of 250 W HPS. Temporary LED luminaires shall have equivalent delivered output to those identified on the current WisDOT Qualified Products List as LED Type $B$. The use of project specified LED cobrahead luminaires will be allowed if all luminaires are in their final specified locations along the roadway that is designated to provide temporary lighting.

Temporary lighting circuitry shall consist of temporary underground or overhead, or permanent underground conductors as proposed for the final project, and be in compliance with the current NEC.

## C Construction

The electric utility will be conducting a major renovation of their overhead distribution system. Coordinate with utility for construction schedule, potential locations for a temporary service, and clearance requirements from their overhead distribution lines. Portions of CTH N and the I-39 ramps will be open to traffic during construction operations. Construct the temporary lighting system to illuminate the traffic conflict areas as shown in the Temporary Lighting Plan, or as directed by the Department project engineer.

Temporary lighting circuitry shall be new circuitry and may be routed underground or overhead or a combination of both. Provide all labor and materials needed to properly hang and support conductors from poles if circuitry is installed overhead. Provide all labor and material to trench or bore conductors underground or in conduit. Provide conduit or u-guard to protect conductors externally mounted to poles to a point 10' above ground.

The temporary lighting units at the locations identified in the Plan shall remain operational every night to the satisfaction of the Department project engineer for the duration of the project as long as the roadway affected by the temporary lighting is in use. Overnight outages are not allowed.

After the permanent lighting system has been installed, energized, and approved for each roundabout; remove completely all temporary equipment and circuitry used for the temporary lighting.

## D Measurement

The department will measure Installing Temporary Lighting Systems in accordance with the contract and accepted, as an installed, operational, and completely removed unit.

## E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

| ITEM NUMBER | DESCRIPTION | UNIT |
| :--- | :--- | :--- |
| SPV.0105.350 | Installing Temporary Lighting System | LS |

Payment is full compensation for furnishing, installing, and removing all materials, including, poles, arms, luminaires, lamps, fusing, overhead or underground wiring, excavation, backfill and compaction, pole bases, pole accessories, hardware and fittings; and for all labor, tools, equipment, incidentals, necessary to complete the contract work.

## Schedule of Items

Attached, dated February 22, 2017, are the revised Schedule of Items Pages 4, 20, 21, 23, and 25.

## Plan Sheets

The following $81 / 2 \times 11$-inch sheets are attached and made part of the plans for this proposal:
Revised (1007-10-86): 92, 156, 157, 176, 245, 256, 265, 270, 271, 273, 274, 278, 279, 281, 282, 289, 303, 328, 329, 331, 352, 353 and 677-698.
Revised (1007-11-81): 33, 34, and 182.
Added (1007-10-86): 698A and 939A-939F.





















Addendum No. 01
ID 1007-10-86
Revised Sheet 677
February 22, 2017




Addendum No. 01 ID 1007-10-86 Revised Sheet 684
February 22, 2017







Addendum No. 01 ID 1007-11-81 Revised Sheet 34
February 22, 2017
FILE NAME : 021200_PD.(PLAN DETAILS NB).OWG
Addendum No. 01 ID 1007-11-81

Proposal Schedule of Items
Page 4 of 25
Proposal ID: 20170314002 Project(s): 1007-10-86, 1007-11-81
Federal ID(s): WISC 2017091, WISC 2017092

SECTION: 0001
Alt Set ID:

ROADWAY ITEMS
Alt Mbr ID:

| Proposal <br> Line | Item ID <br> Dumber | Approximate <br> Quantity and <br> Units | Unit Price |
| :--- | :--- | ---: | :--- |

Proposal Schedule of Items
Page 20 of 25
Proposal ID: 20170314002 Project(s): 1007-10-86, 1007-11-81
Federal ID(s): WISC 2017091, WISC 2017092

SECTION: 0001
Alt Set ID:

ROADWAY ITEMS
Alt Mbr ID:

| Proposal <br> Line | Item ID <br> Description | Approximate <br> Quantity and <br> Units | Unit Price |
| :--- | :--- | ---: | :--- |

Proposal Schedule of Items
Page 21 of 25
Proposal ID: 20170314002 Project(s): 1007-10-86, 1007-11-81
Federal ID(s): WISC 2017091, WISC 2017092

SECTION: 0001
Alt Set ID:

ROADWAY ITEMS
Alt Mbr ID:

| Proposal <br> Line <br> Number | Item ID <br> Description | Approximate <br> Quantity and <br> Units | Unit Price |
| :--- | :--- | ---: | :--- |

Proposal Schedule of Items
Page 23 of 25
Proposal ID: 20170314002 Project(s): 1007-10-86, 1007-11-81
Federal ID(s): WISC 2017091, WISC 2017092

SECTION: 0001
Alt Set ID:

ROADWAY ITEMS
Alt Mbr ID:

| Proposal Line Number | Item ID Description | Approximate Quantity and Units | Unit Price | Bid Amount |
| :---: | :---: | :---: | :---: | :---: |
| 3320 | SPV. 0060 | 30.000 |  |  |
|  | Special 002. CPM Progress Schedule Updates and Accepted Revisions | EACH |  |  |
| 3330 | SPV. 0060 | 4.000 |  |  |
|  | Special 003. Test Pits | EACH | * | . |
| 3340 | SPV. 0060 | 2.000 |  |  |
|  | Special 004. Landmark Reference Monuments Special | EACH | —— | - |
| 3350 | SPV. 0060 | 2.000 |  |  |
|  | Special 005. Sawing Concrete Barrier | EACH |  |  |
| 3360 | SPV. 0060 | 353.000 |  |  |
|  | Special 200. Barrier Wall Delineation | EACH | - |  |
| 3370 | SPV. 0060 | 1.000 |  |  |
|  | Special 350. Lighting and Ramp Gate Control Cabinet 120/240v 30-Inch | EACH | . | . |
| 3380 | SPV. 0060 | 20.000 |  |  |
|  | Special 351. Pull Boxes Non-Conductive 24x42-Inch | EACH | - | . |
| 3390 | SPV. 0060 | 1.000 |  |  |
|  | Special 401. Pull Boxes Non-Conductive 24×36-Inch | EACH | - | - |
| 3400 | SPV. 0060 | 1.000 |  |  |
|  | Special 402. Fiber Tracer Marker Post | EACH |  | $\because-$ |
| 3410 | SPV. 0060 | 1.000 |  |  |
|  | Special 403. Install Cellular Modem | EACH |  | - |
| 3420 | SPV. 0060 | 1.000 |  |  |
|  | Special 404. Remove Poles Wood | EACH | - | - |
| 3430 | SPV. 0060 | 1.000 |  |  |
|  | Special 405. Remove Electrical Service Meter Breaker Pedestal | EACH | - | - |
| 3440 | SPV. 0060 | 2.000 |  |  |
|  | Special 700. Anchor Bolt Assembly Sign Bridge | EACH | - | - |
| 3450 | SPV. 0090 | 3,660.000 |  |  |
|  | Special 001. Fill Existing Rumble Strips | LF |  | - |
| 3460 | SPV. 0090 | 503.000 |  |  |
|  | Special 002. Concrete Curb \& Gutter OSOW **P** | LF | 侕 | - |

Proposal Schedule of Items
Page 25 of 25
Proposal ID: 20170314002 Project(s): 1007-10-86, 1007-11-81
Federal ID(s): WISC 2017091, WISC 2017092
SECTION: 0001
ROADWAY ITEMS
Alt Set ID: Alt Mbr ID:

| Proposal <br> Line | Item ID <br> Dumber | Approximate <br> Quantity and <br> Units |
| :--- | :--- | ---: | :--- |
| 3610 | SPV.0165 <br> Special 001. Wall Modular Block Gravity <br> LRFD | Unit Price |

