Wisconsin Department of Transportation

## NOTICE TO ALL CONTRACTORS:

Proposal \#44: 8680-00-71, WISC 2016503
City of Superior, Belknap Street
Banks Avenue - Hill Avenue
USH 2
Douglas County
Division of Transportation Systems Development
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8680-00-72
City of Superior, Belknap Street
Banks Avenue - Hill Avenue
USH 2
Douglas County

8998-00-24, WISC 2016506
City of Superior, Belknap Street
Side Streets
Banks Avenue - Hill Avenue
USH 2
Douglas County

## Letting of December 13, 2016

This is Addendum No. 01, which provides for the following:

## Special Provisions

| Revised Special Provisions |  |
| :---: | :--- |
| Article <br> No. | Description |
| 22 | Notice to Contractor - Coordination with Ground Vibration Isolation/Attenuation <br> Research |
| 70 | Seismograph/Vibration Monitoring, Item SPV.0045.002 |
| 94 | Connect to Existing Sanitary Sewer Service, Item SPV.0060.042; Connect to Existing <br> Sanitary Main, 18-inch, Item SPV.0060.043; 20x30-inch, Item SPV.0060.044; 72-inch, <br> Item SPV.0060.045. |


| Added Special Provisions |  |
| :---: | :--- |
| Article <br> No. | Description |
| 178 | Lighting Unit Type Special 4, Item SPV.0060.087 |
| 179 | Lighting Unit Type Special 5, Item SPV.0060.088 |
| 180 | Concrete Knee Wall, Item SPV.0090.070 |

## Schedule of Items

| Revised Bid Item Quantities |  |  |  |  |  |  |  |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Bid Item | Item Description | Unit | Old <br> Quantity | Revised <br> Quantity | Proposal <br> Total |  |  |
| 205.0100 | Excavation Common | CY | 77,902 | 2,686 | 80,588 |  |  |
| 208.1100 | Select Borrow | CY | 28,254 | 761 | 29,015 |  |  |
| 305.0120 | Base Aggregate 1 1/4-Inch | TON | 49,718 | 346 | 50,064 |  |  |
| 455.0605 | Tack Coat | GAL | 12,709 | 43 | 12,752 |  |  |
| 465.0105 | Asphaltic Surface | TON | 1855 | 192 | 2047 |  |  |
| 637.2210 | Signs Type II Reflective H | SF | 1276.72 | 2.50 | 1279.22 |  |  |
| 638.2602 | Removing Signs Type II | EACH | 218 | 1 | 219 |  |  |
| 638.3000 | Removing Small Sign Supports | EACH | 111 | 1 | 112 |  |  |
| 643.0410 | Traffic Control Barricades Type II | DAY | 4,880 | 762 | 5,642 |  |  |
| 643.0900 | Traffic Control Signs | DAY | 41,134 | 762 | 41,896 |  |  |
| 643.0920 | Traffic Control Covering Signs Type II | EACH | 44 | 2 | 46 |  |  |
| 647.0156 | Pavement Marking Arrows Epoxy Type 1 | EACH | 9 | 1 | 10 |  |  |
| 647.0166 | Pavement Marking Arrows Epoxy Type 2 | EACH | 69 | 1 | 70 |  |  |
| 647.0356 | Pavement Marking Words Epoxy | EACH | 16 | -1 | 15 |  |  |
| 647.0706 | Pavement Marking Diagonal Epoxy 6-Inch | LF | 1,417 | -74 | 1,343 |  |  |
| 652.0205 | Conduit Rigid Nonmetallic <br> Schedule 40 3/4-Inch | LF | 29 | 131 | 160 |  |  |
| 652.0225 | Conduit Rigid Nonmetallic <br> Schedule 40 2-Inch | LF | 26,919 | 51 | 26,970 |  |  |
| 653.0145 | Pull Boxes Steel 24"x48" | EACH | 31 | 2 | 33 |  |  |
| 655.0615 | Electrical Wire Lighting 10 AWG | LF | 3,786 | 726 | 4,512 |  |  |
| SPV.0060.040 | Removing Sanitary Manholes | EACH | 1 | 1 | 2 |  |  |
| SPV.0060.043 | Connect to Existing Sanitary Main <br> 6-Inch to 18-Inch | EACH | 1 | 2 | 3 |  |  |
| SPV.0060.065 | Gate Valve and Box, 6-Inch | EACH | 6 | 1 | 7 |  |  |
| SPV.0090.005 | Removing Sanitary Sewer Pipe <br> 4-Inch to 30 Inch | LF | 304 | 8 | 312 |  |  |
| SPV.0090.010 | Sanitary Sewer Main 18-Inch | LF | 8 | 8 | 16 |  |  |


| Added Bid Item Quantities |  |  |  |  |  |
| :---: | :--- | :---: | :---: | :---: | :---: |
| Bid Item | Item Description | Unit | Old <br> Quantity | Revised <br> Quantity | Proposal <br> Total |
| 204.0170 | Removing Fence | LF | 0 | 65 | 65 |
| 645.0140 | Geotextile Type SAS | SY | 0 | 3,970 | 3,970 |
| SPV.0060.087 | Lighting Unit Type Special 4 | EACH | 0 | 2 | 2 |
| SPV.0060.088 | Lighting Unit Type Special 5 | EACH | 0 | 1 | 1 |
| SPV.0090.070 | Concrete Knee Wall | LF | 0 | 34 | 34 |

## Plan Sheets

| Revised Plan Sheets |  |
| :---: | :--- |
| Plan <br> Sheet | Plan Sheet Title (brief description of changes to sheet) |
| 19 | Revised Typical Section: Revised and combined with Typicals from Sheet 20 |
| 30 | Revised Typical Section for Cathedral Parking Lot West side of Baxter Avenue |
| 34 | Revised Construction Detail, missing data placed |
| 63 | Intersection Detail: Added Removing Fence, removed elevation label |


| 153 | Water main Plan and Profile: revisions made to one line |
| :--- | :--- |
| 250 | Permanent Signing Sheet: Parking Signs removed, added in new location |
| 265 | Lighting Plan Sheet: Added Note for Lighting Sign |
| 270 | Lighting Plan Sheet: Added Note for Lighting Sign |
| 276 | Lighting Detail Sheet: Added Detail for Lighting Unit Type Special 4 |
| 279 | Lighting Detail Sheet: Added Detail for Lighting Unit Type Special 5 |
| 411 | Pavement Marking Sheet: Bus Turnout Removed, and Bus Turnout Shifted |
| 507 | MQ Sheet: Revised to add Unusable Cut volumes, added additional excavation for parking <br> lots and driveways |
| 508 | MQ Sheet: Revised to add Unusable Cut volumes, added additional excavation for parking <br> lots and driveways |
| 518 | MQ Sheet: Revised - Rearranged Asphaltic Surface Temporary Quantity tables |
| 519 | MQ Sheet: Revised Asphaltic Surface, Select Borrow and Base Aggregate Quantities |
| 537 | MQ Sheet: Revisions made to add parking signs and revised bus turnouts |
| 542 | MQ Sheet: Revisions made to add parking signs and revised bus turnouts - totals |
| 551 | MQ Sheet: Revisions made to bus turn out \& parking, revised arrows in parking lot |
| 560 | MQ Sheet: Revisions made to Sanitary main and Manhole |
| 615 | MQ Sheet: Revisions made to Water main, revised gate valve \& box quantity |
| 620 | MQ Sheet: Revisions made to Water main, revised gate valve \& box quantity |
| 631 | MQ Sheet: Categories revised, Item Number for entry column corrected. |


| Added Plan Sheets |  |
| :---: | :--- |
| Plan <br> Sheet | Plan Sheet Title (brief description of why sheet was deleted) |
| 41A | Construction Detail Added to show Knee Wall Detail |
| 41B | Construction Detail Added to show Landscape edging details |
| 168A | Sanitary Sewer Detail Added |
| 427A | Temporary Signing Sheet - No parking on Tower Avenue Added |
| 519A | MQ Sheet: Revised Asphaltic Surface, Select Borrow and Base Aggregate Quantities |
| 558A | MQ Sheet: Added New MQ Sheet for New Item Concrete Knee Wall, Removing Fence, <br> Additional Traffic Control Items on Tower Avenue, Lighting Item revisions |
| 709A | SDD 9C12 Sheet a: Added detail needed for traffic signal plans |
| 709B | SDD 9C12 Sheet b: Added detail needed for traffic signal plans |


| Deleted Plan Sheets |  |
| :---: | :---: |
| Plan <br> Sheet | Plan Sheet Title (brief description of why sheet was deleted) |
| 20 | Typical Section: Combined onto Typical Section Sheet 19 |

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

## 8680-00-71, 8680-00-72, 8998-00-24

December 5, 2016

## Special Provisions

## 22. Notice to Contractor - Coordination with Ground Vibration Isolation/Attenuation Research

The Wisconsin Department of Transportation (WisDOT) and the Construction \& Materials Support Center University of Wisconsin Madison will perform Ground Vibration Isolation/Attenuation Research for the USH 2 Belknap Street project.

During construction, a series of test procedures will be conducted. Due to the urban setting of this project, there are several historical, and many non-historical structures that are located in close proximity ( 15 feet or less) to the proposed construction activities along the corridor. Specific construction activities have the potential to produce vibration levels that could cause damage to existing structures if appropriate precautions are not taken. One of the primary environmental commitments of the Belknap Street construction project will be to maximize protection of historic structures (and all properties) along the limits of construction.

The contractor shall be responsible for the construction of test ground vibration isolation systems utilizing open or filled trenches as a barrier to surface (Rayleigh) waves. Construct Ground Vibration Isolation Trenches at the 7 locations along the project alignment during year 1 of construction (2017) per plan details. The sites are from Station 205+75 to 210+03 LT and RT.

During and after ground vibration isolation trench construction, the contractor shall run a set of construction equipment along a construction equipment test zone, see special provision SPV.0075.00 Construction Equipment Test Zone. Ground Vibration Isolation/Attenuation Researchers will need to be on site to document construction-induced vibration levels of the following activities and equipment:

Pavement removal
Compaction activities
Jackhammers
Hydraulic breakers
Hoe rams
Vibratory rollers
Large truck
Dozer
Excavator operations
Paving
Layout of the proposed ground vibration isolation trenches and the construction equipment test zones will be done by others. Collection of seismograph data will be done by others.

Contact WisDOT Soils at least two weeks in advance of starting concrete removal operations work on US 2/Belknap Street, to arrange for layout of trenches and test zones.

Ground Vibration Isolation/Attenuation Research Offers Test Opportunities
The ground vibration testing would be an ideal opportunity for the Contractor to assess and plan equipment/operations for work near historic buildings and properties. The test ground vibration research data would provide information to the Contractor for the Vibration-Inducing Work Activity Plan required in SPV.0045.002.

The Contractor shall be advised it may take extraordinary measures when construction is within vicinity of buildings/structures, listed in Table SPV.0045.002-C4.2 Historic Properties, especially near the Harrington Arts Center building located at 1401 Belknap Street.

The "Harrington Arts Center Art Glass Survey Report" is available upon request. Contact WisDOT Project Manager Brendan Dirkes at (715) 225-9314.

## 70. Seismograph/Vibration Monitoring, Item SPV.0045.002.

## A Description

This special provision describes furnishing a seismograph(s) and employing trained operators to monitor construction-induced vibrations on buildings/structures, and submittal of all required documentation.

Whenever there is a potential for vibration damage to adjacent buildings, structures, or utilities, monitor the vibration source with an approved seismograph, located, in a direct line between the vibration source and the point or area of the closest buildings/structures subject to vibration damage, and as close as practical to the subject structure.

Peak particle velocity shall not be allowed to exceed the maximum limits, seen in tables SPV.0045.002-C4.1 Maximum Peak Particle Velocities and SPV.0045.002-C4.2 Historic Properties, of the nearest buildings/structures subject to vibration damage.

## B Materials

Use digital seismographs that are in accordance to Wisconsin Department of Safety and Professional Services (SPS) 307.43, Wisconsin Administrative Code, and are continuous data loggers supplied with all the accessories necessary for making vibration and noise monitoring observations.

## C Construction

All vibration-inducing work performed shall be done in compliance with Wisconsin Department of Safety and Professional Services SPS 307.44, unless otherwise noted in the plan documents.

Place the seismograph to continuously monitor all construction activities or as directed by the engineer. Seismograph for continuous project monitoring shall be placed 5 ' behind proposed sidewalk at begin of construction operations. Monitor all forms of construction operations to determine that peak particle velocity shall not exceed the maximum limits listed in Table SPV.0045.002-C4.1 Maximum Peak Particle Velocities and Figure SPV.0045.002-C4.3. The qualified vibration specialist shall review and report data daily. Review and report exceedances immediately to Engineer in the field. If monitoring shows construction operation staying at or below peak particle velocity then monitoring can cease until different construction operation begins or as directed by the Department or Engineer in the field.

When use of construction equipment approaches buildings/structures, listed in Table SPV.0045.002C4.2 Historic Properties, within 350 feet of the operations monitoring shall resume. For buildings/structures, listed in Table SPV.0045.002-C4.2 Historic Properties, place the seismograph on a stable surface within 3 feet of the building/structure nearest to the construction operation. The qualified vibration specialist shall review and report data hourly. Review and report exceedances immediately to Engineer in the field.

## C.1. Vibration-Inducing Work Activity Plan Submittal

When construction is within vicinity of buildings/structures, listed in Table SPV.0045.002-C4.2 Historic Properties, especially near the Harrington Arts Center building located at 1401 Belknap Street, the Contractor shall be advised it may take extraordinary measures to work in these areas due to worksite conditions.

The "Harrington Arts Center Art Glass Survey Report" is available upon request. Contact WisDOT Project Manager Brendan Dirkes at (715) 225-9314.

Not less than two weeks prior to commencing vibration-inducing work operations, during each year of construction, submit a Vibration-Inducing Work Activity Plan to the engineer for review, for properties listed in Table SPV.0045.002-C4.2 - Historic Properties. The plan shall contain full details vibrationinducing work operations and the methods employed to control and monitor vibration levels. The vibration-inducing work activity plan shall contain the following minimum information:

1. Listing and description of equipment and tools used.
2. Description of proposed vibration-inducing work activity methods and operations.
3. Discussion of methods employed to control and monitor vibration levels.

The plan submittal is for quality control and record keeping purposes. Review of this plan by the engineer shall not relieve the contractor of his responsibility for the accuracy and adequacy of the plan when implemented in the field.

## C.2. Condition Surveys

For construction vibration-inducing work, conduct and document pre-construction and post-construction surveys of nearby structures or buildings that have a potential for vibration damage. The Engineer may require condition surveys of facilities not deemed to have damage potential by the contractor. Make right of entry arrangements with the property owners for these condition surveys. Prior to any removallconstruction work, the pre-construction survey records shall be made available to the Engineer for review. After completion of the removallconstruction operations, perform a post-construction survey and make these records available to the engineer for review. Be responsible for any damage resulting from excessive vibration-causing operations.

These condition surveys shall consist of visually inspecting and recording all existing defects in the structures before and after removal, construction, and/or vibration causing operations. Photographs and/or videotape may be used to assist in documentation. Submit a written report to the department detailing the visual and photographic investigation of potentially affected structures. This report shall include copies of the pre-construction and post-construction surveys and discuss any discrepancies and findings of these surveys.

## C.3. Safety

The engineer will, at all times, have the authority to prohibit or halt the contractor's operations or other vibration-inducing construction activities; if it is apparent that through the methods being employed, the safety and convenience of the traveling public is being jeopardized or that vibration levels are excessive or above allowable levels.

## C.4. Vibration Monitoring

Vibration monitoring shall be performed by a qualified vibration specialist, subject to the Engineer's approval. The vibration specialist shall monitor vibration levels in accordance with SPS 307.44 of the Wisconsin Administrative Code and interpret the seismograph records to insure that the seismograph data shall be effectively utilized in the control of construction operations with respect to the existing buildings/structures and utilities.

Wisconsin Department of Safety and Professional Services SPS 307.44 states that the maximum allowable limit on ground vibration for buildings/structures not listed in SPS 307.44 shall be established using Table SPV.0045.002-C4.1 Maximum Peak Particle Velocities below and after consulting with the engineer in the field or utility. In no case shall these vibration limits exceed the following criteria:

Table SPV.0045.002-C4.1 Maximum Peak Particle Velocities

| Building/Structure Type | Maximum <br> Peak Particle <br> Velocity <br> (Inches per <br> second) |
| :--- | :--- |
| Reinforced Concrete Structures, Unoccupied | 4.0 |
| Steel Structures, Unoccupied | 4.0 |
| Buried Utilities | 2.0 |
| Wells and Aquifers | 2.0 |
| Green Concrete (less than 7 days) | 1.0 |
| Non-historic buildings | 2.0 |
| Historic buildings that have standard vibration sensitivity (in <br> good state of maintenance) | 0.5 |
| Historic buildings with greater potential for <br> damage/sensitivity (deteriorated state of maintenance) | 0.20 |

Table SPV.0045.002-C4.2 Historic Properties

| Address | Historic Property | Recommended <br> Levels PPV |
| :--- | :--- | :--- |
| $1424-1430$ <br> Tower Ave | New Jersey Block | Below 0.5 |
| 1501-1511 <br> Tower Ave | Minnesota Block | Below 0.5 |
| $1517-1523$ <br> Tower Ave. | Washington Block | 2.0 |
| 1313 Belknap St. | Douglas County Courthouse | 2.0 |
| 1503 Belknap St. | Masonic Temple (Elks Lodge) | Below 0.5 |
| 1513-1515 John <br> Ave. | Watkins Duplex | 2.0 |
| 1517 John Ave. | Brown Bros. | 2.0 |
| 1401 Belknap St. | Hammond Avenue Presbyterian <br> Church (Harrington Arts Center) | Below 0.3 |
| 1115 Belknap St. | Cathedral of Christ the King | 2.0 |
| 1419 Baxter <br> Ave. | Cathedral School | 2.0 |
| 1416 Cumming <br> Ave | Catholic Charities Bureau | 2.0 |

Monitoring procedures shall be in accordance with SPS 307.44 and conducted as follows: Take seismograph readings prior to construction activities to establish an ambient or background index.

During construction, place the seismograph to monitor all vibration-inducing construction activities or as directed by the engineer. At a minimum utilize one seismograph per location of construction operation. Additional seismographs may be requested by the engineer. If more than one major construction activity per day is taking place, multiple seismographs may be required.

Data recorded for each vibration occurrence shall be furnished to the Engineer, within 24 hours of data collection, and shall include the following:

1. Identification of vibration monitoring instrument used.
2. Description of equipment used by the contractor.
3. Name of qualified observer and interpreter.
4. Distance and direction of recording station from the vibration area.
5. Type of ground at recording station and material on which the instrument is sitting.
6. Peak particle velocity and principal frequency in each component.
7. A dated and signed copy of records of seismograph readings,
8. A comparison (plot) of measured seismograph readings to maximum allowable readings identified on Figure SPV.0045.002-C4.3.
9. If the maximum allowable vibration levels are exceeded, halt further vibration-causing work and document the operational changes to reduce the next vibration levels measured to below or not to exceed acceptable levels.
10. Copy of Vibration-Inducing Work Activity Plan, noting corrections made in the field to equipment, tools, work activity methods and operations
11. A digital copy is required of all information submitted. All data types required shall be on a single portable electronic media device compatible with Microsoft Windows. Media with a USB connector or read on CD or DVD optical drive are acceptable. Media on blu-ray discs is not acceptable.

If construction activities generate ground vibration in excess of the Peak Particle Velocity Limits as shown in Figure SPV.0045.002-C4.3 or as specified in table SPV.0045.002-C4.1 Maximum Peak Particle Velocities and SPV.0045.002-C4.2 Historic Properties in this special provision, stop the construction operation in progress and implement alternate construction methods to produce results within the allowable Peak Particle Velocity Limits.

Figure SPV.0045.002-C4.3
(Source FIGURE 7.44 - Blasting Level Chart, contained in Wisconsin Administrative Code, Chapter SPS 307)

## D Measurement

The department will measure Seismograph/Vibration Monitoring bid item by the day of work acceptably completed. The measured quantity will equal the number of calendar days, for each device, from the date the device is placed into operation through the date the device is removed from operation at each location.

## E Payment

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

| ITEM | DESCRIPTION | UNIT |
| :--- | :--- | :--- |
| NUMBER | Seismograph/Vibrating Monitoring | DAYS |

Payment is full compensation for developing and furnishing the work plans; conducting and providing the pre/post construction surveys; furnishing and operating a seismograph(s), any operator(s), and producing documentation reports.
94. Connect to Existing Sanitary Sewer Service, Item SPV.0060.042; Connect to Existing Sanitary Main, 18-inch, Item SPV.0060.043; 20x30-inch, Item SPV.0060.044; 72-inch, Item SPV.0060.045.

Revise Title of the article to the following:
Connect to Existing Sanitary Sewer Service, Item SPV.0060.042; Connect to Existing Sanitary Main 6-Inch to 18-Inch, Item SPV.0060.043; 20x30-inch, Item SPV.0060.044; 72-inch, Item SPV.0060.045.

Replace entire section titled E Payment with the following:

## E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:
ITEM NUMBER DESCRIPTION UNIT
SPV.0060.042
Connect to Existing Sanitary Service
SPV. 0060.043
Connect to Existing Sanitary Main 6-Inch to 18-Inch
EACH
SPV.0060.044 Connect to Existing Sanitary Main 20x30-Inch EACH
SPV.0060.045 Connect to Existing Sanitary Main 72-Inch EACH
Payment is full compensation for connecting to existing sanitary pipe, furnishing, hauling and placing all materials, for furnishing all excavation, backfilling and disposing of excess material; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

## 178. Lighting Unit Type Special 4, Item SPV.0060.087.

## A Description

This special provision describes furnishing and installing lighting units complete with 38-watt LED flood luminaires, stanchion mounts, and concrete foundations.

## B Materials

Lighting Units to withstand the maximum loading applied as the standard detail drawings included in the plans show. Apply design factors to this structure conforming to the latest AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, together with a wind pressure based on a wind velocity of 90 mph plus gust factor. Luminaires shall be as shown in the Plan details and Lighting Unit Schedule.

The luminaires shall be a type DFL7. The luminaires shall be "UL" listed and equipped with an internal universal voltage (120-277V) LED driver, surge protection, and 4000 Kelvin LED lamps. Flood luminaire shall have no less than 16 LEDs with a metal core printed circuit board. LEDs shall be driven at no more than 700 mA .

The optical system shall have a rectangular medium flood distribution. Optics shall be composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution.

The housing shall be constructed of a single piece low copper die cast aluminum allow for a high resistance to corrosion. The housing shall also act as a heat sink. The lens assembly shall be a heat and impact resistant $1 / 8^{\prime \prime}$ thick tempered glass lens with a one-piece silicon gasket that is mechanically secured to the door frame providing an IP66 seal.

The knuckle shall feature an integral cULus recognized splicing compartment. A single captive $3 / 16^{\prime \prime}$ stainless steel allen-head bolt and stainless steel nut shall securely lock the knuckle aiming teeth in $5^{\circ}$ increments. The knuckle assembly shall be fully gasketed to provide a wet location seal.

Luminaires and accessories shall have a textured black finish. The stanchion mount shall be no more than 18 " and be rated for in-ground concrete burial mounting.

Furnish shop drawings as specified in 506.3.2, except submit 5 copies with the materials list. Ensure the drawings contain sufficient detail to allow satisfactory review and show the dimensions of all equipment shown in the plans.

All threaded equipment mounting hardware shall be stainless steel.
Ensure that all castings are clean and smooth, and that all details are well-defined and true to pattern.

## C Construction

Under the bid items Lighting Unit Type Special 4 furnish and install luminaires, concrete foundations, and all necessary miscellaneous accessories and hardware to complete the installation of the poles as shown in the plan details.

Three $1 / \mathrm{c}$ No. 10 stranded wires shall be used to connect the luminaires to their respective branch conductors.

Contractor is responsible for establishing set-back, installation location, and aiming of lighting units. See Landscape Plans for additional information.

All threaded stainless steel hardware and dissimilar metal, threaded hardware shall be coated with an approved zinc-based anti-seize compound (Loctite or Jet-Lube) by the Contractor.

The Contractor shall provide a concrete foundation for the flood light and stanchion as detailed in the Plans.

After completing installation, ensure the centerline of the stanchion is vertical.
The Contractor shall follow manufacturer's instructions regarding luminaire installation.

## D Measurement

The department will measure Lighting Unit Type Special 4 as each individual lighting unit acceptably completed.

## E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:
ITEM NUMBER
SPV. 0060.087
DESCRIPTION
Lighting Unit Type Special 4

UNIT
Each
Payment is full compensation for furnishing and installing all materials, including luminaires, stanchion, concrete foundation, and all accessories, hardware and fittings necessary to install the lighting unit in a workable first class condition, and for furnishing all labor, tools, equipment and incidentals necessary to complete the contract work.

## 179. Lighting Unit Type Special 5, Item SPV.0060.088.

## A Description

This special provision describes furnishing and installing lighting units complete with LED tape lights, power supplies, and vaults.

## B Materials

Lighting Units shall be as shown in the Plan details and Lighting Unit Schedule.
The Led tape light shall be a type iQ68. The tape light shall be "UL" listed and equipped with 3500 Kelvin LED lamps. Tape light shall be IP68 rated and operate at 24VDC. LED life span shall be no less than 40,000 hours and have an operating temperature range of $-4^{\circ} \mathrm{F}$ to $113^{\circ} \mathrm{F}$. Tape light shall be flexible and have cut points every 3.94". Luminaire shall have a manufacturer's warranty of no less than 3 years.

The max run of the tape lights shall be no less than 21 feet. CRI shall be no less than 90 . The tape light shall be rated at $4.4 \mathrm{~W} / \mathrm{ft}$ and 219 lumens/ft.

The tape light shall have an external power supply that is rated for direct burial and outdoor use when installed in the accompanying vault. The power supply shall have an input voltage of 120-277VAC and an output voltage of 24 VDC . Power supply shall be fully potted and have an operating temperature range of $-4^{\circ} \mathrm{F}$ to $104^{\circ} \mathrm{F}$.

The vault shall be an IP68 wet-listed direct burial transformer/power supply center and shall house the electronic power supply previously mentioned. The vault shall house up to (2)24VDC electronic power supplies. The vault shall be completely watertight. The vault shall have (2) $1 / 2$ " NPT knockouts and (4) $3 / 4$ " NPT knockouts for conduit entries. Vault shall have a one-piece gasket sealing the cover to the enclosure.

Furnish shop drawings as specified in 506.3.2, except submit 5 copies with the materials list. Ensure the drawings contain sufficient detail to allow satisfactory review and show the dimensions of all equipment shown in the plans.

All threaded equipment mounting hardware shall be stainless steel.

## C Construction

Under the bid items Lighting Unit Type Special 5 furnish and install tape light, power supplies, vaults, and all necessary miscellaneous accessories and hardware to complete the installation of the lighting units as shown in the plan details.

Contractor is responsible for establishing set-back, installation location, and aiming of lighting units. See Landscape Plans for additional information.

All threaded stainless steel hardware and dissimilar metal, threaded hardware shall be coated with an approved zinc-based anti-seize compound (Loctite or Jet-Lube) by the Contractor.

The Contractor shall follow manufacturer's instructions regarding tape light, power supply, and vault installation.

## D Measurement

The department will measure Lighting Unit Type Special 5 as each individual lighting unit acceptably completed.

## E Payment

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

Payment is full compensation for furnishing and installing all materials, including tape light, power supplies, vault, and all accessories, hardware and fittings necessary to install the lighting unit in a workable first class condition, and for furnishing all labor, tools, equipment and incidentals necessary to complete the contract work.
180. Concrete Knee Wall, Item SPV.0090.070.

## A Description

This special provision describes furnishing and installing a concrete knee wall as shown on the plans and as hereinafter provided.

## B Materials

The formwork materials, reinforcing materials, concrete and accessories necessary for knee wall is to be constructed per the plan details. Contractor to provide list of materials, shop drawings if necessary and material samples to Landscape Architect or Engineer in the field for review and approval prior to the ordering of materials and/or commencing of fabrication.

Concrete - Shall conform to section 501 of the standard specifications and be hand finished, demonstrate form layout and installation method to Landscape Architect or Engineer in the field for review and approval prior to fabrication.

Reinforcing steel - Shall conform to section 505 of the standard specifications.

## B. 1 Concrete

Materials shall conform to section 501 of the standard specifications.

## C Construction

## C. 1 Concrete Knee Wall

Construct Concrete knee wall as shown in the plan details and in accordance to section 504 of the standard specifications

## C. 2 Finish

Hand rub all visible above grade finished concrete, construct smooth finished concrete foundation conforming to the requirements in section 502.3.7.3 of the standard specifications.

## D Measurement

The department will measure concrete knee wall by the linear foot measured along center of the wall acceptably completed.

## E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:
ITEM NUMBER DESCRIPTION UNIT
SPV.0090.070
Concrete Knee Wall
LF
Payment is full compensation for providing all materials, including formwork materials, reinforcing materials, concrete and accessories, for the wall, for sawing, excavating and preparing the site work; backfilling and disposing of surplus material; for placing, finishing, protecting, and restoring the site, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

## Schedule of Items

Attached, dated December 5, 2016, are the revised Schedule of Items Pages 3, 4, 10 -15, 22, 23, 26, 35, and 36.

## Plan Sheets

The following $81 / 2 \times 11$-inch sheets are attached and made part of the plans for this proposal: Revised: 19, 30, 34, 63, 153, 250, 265, 270, 276, 279, 411,507, 508, 518, 519, 537, 542, 551, 560, 615, 620, and 631.
Added: 41A, 41B, 168A, 427A, 519A, 558A, 709A and 709B.


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Addendum No. 01 ID 8680-00-72
Revised Sheet 153
December 5, 2016











Addendum No. 01 ID 8680-00-71
Revised Sheet 551
December 5, 2016
$\cdots$


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| NOTES |  |
| :---: | :---: |
| 1 | TO BE USED FOR TEMPORARY ROADWAY AREAS AS SHOWN IN THE PLAN FOR SIDE STREET CONNECTIONS. RESTORATION AREAS FOR SERVICE CONNECTIONS, ETC. ARE INCLUDED IN EXCAVATION AREA BID ITEMS. |
| 2 | ASSUMES 16' UNIFORM WIDTH TRENCH FOR 14 SIDE STREETS. |
| 3 | ASSUMES 16' WIDTH $\times 33^{\prime}$ 'LENGTH AREA FOR 14 SIDE STREETS AND |
| 4 | INCLUDES BOTH DI AND HDPE PIPE LEADS. USE DI LEADS IN CONTAMINATED AREAS. |
| 5 | TO BE USED IN NON-CONTAMINATED AREAS. |
| 6 | TO BE USED IN CONTAMINATED AREAS. |
| NOTES: |  |
| EXACT ALIGNMENT OF ALL WATER SERVICES TO BE COORDINATED by CONTRACTOR WITH EXISTING AND PROPOSED UTILITIES AS WELL AS PROPOSED LANDSCAPING FEATURES. |  |
| minimum 18" CLEAR REQUIRED at all storm and Sanitary Crossings. PIPE INVERTS SHOWN ARE AT REFERENCE LINE OF ROADWAY AND DO NOT ACCOUNT FOR PIPE THICKNESS. |  |
| CONTRACTOR TO VERIFY aLL anticipated SERVICES CONNECTIONS SHOWN IN PLAN. |  |
| removal or abandonment of all pipes 2-INCH and smaller is INCIDENTAL. |  |
| BENDS SHOWN, PREFERABLE TO DEFLECT HDPE PIPE AT BEND LOCATIONS IF feasible. no payment shall be made for method selected. |  |




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Proposal Schedule of Items
Page 3 of 36
Proposal ID: 20161213044
Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items
Alt Set ID: Alt Mbr ID:

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

Proposal Schedule of Items
Page 4 of 36
Proposal ID: 20161213044
Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items Alt Set ID: 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 10 of 36
Proposal ID: 20161213044
Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items Alt Set ID: Alt Mbr ID:

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

Proposal Schedule of Items

Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items Alt Set ID: Alt Mbr ID:

| Proposal Line Number | Item ID <br> Description | Approximate Quantity and Units | Unit Price | Bid Amount |
| :---: | :---: | :---: | :---: | :---: |
| 1500 | 643.0420 | 34,337.000 |  |  |
|  | Traffic Control Barricades Type III | DAY |  |  |
| 1510 | 643.0500 | 706.000 |  |  |
|  | Traffic Control Flexible Tubular Marker Posts | EACH |  |  |
| 1520 | 643.0600 | 706.000 |  |  |
|  | Traffic Control Flexible Tubular Marker Bases | EACH |  |  |
| 1530 | 643.0705 | 68,674.000 |  |  |
|  | Traffic Control Warning Lights Type A | DAY |  |  |
| 1540 | 643.0715 | 10,364.000 |  |  |
|  | Traffic Control Warning Lights Type C | DAY |  |  |
| 1550 | 643.0900 | 41,896.000 |  |  |
|  | Traffic Control Signs | DAY |  |  |
| 1560 | 643.0920 | 46.000 |  |  |
|  | Traffic Control Covering Signs Type II | EACH |  |  |
| 1570 | 643.1000 | 472.000 |  |  |
|  | Traffic Control Signs Fixed Message | SF |  |  |
| 1580 | 643.1051 | 762.000 |  |  |
|  | Traffic Control Signs PCMS with Cellular Communications | DAY |  |  |
| 1590 | 643.2000 | 1.000 |  |  |
|  | Traffic Control Detour (project) 001. 8680-00-71 | EACH |  |  |
| 1600 | 643.3000 | 102,760.000 |  |  |
|  | Traffic Control Detour Signs | DAY |  |  |
| 1610 | 645.0111 | 11,486.000 |  |  |
|  | Geotextile Type DF Schedule A | SY |  |  |
| 1620 | 645.0120 | 10.000 |  |  |
|  | Geotextile Type HR | SY |  |  |
| 1630 | 646.0106 | 100,986.000 |  |  |
|  | Pavement Marking Epoxy 4-Inch | LF |  |  |
| 1640 | 646.0126 | 4,879.000 |  |  |
|  | Pavement Marking Epoxy 8-Inch | LF |  |  |
| 1650 | 646.0600 | 4,837.000 |  |  |
|  | Removing Pavement Markings | LF |  |  |

Proposal Schedule of Items
Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items Alt Set ID: 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 13 of 36
Proposal ID: 20161213044
Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items Alt Set ID: Alt Mbr ID:

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

Proposal Schedule of Items

Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items Alt Set ID: 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 15 of 36
Proposal ID: 20161213044
Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items
Alt Set ID: Alt Mbr ID:

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

Proposal Schedule of Items

Project(s): 8680-00-71, 8680-00-72, 8998-0024

Alt Set ID: Alt Mbr ID:

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

Proposal Schedule of Items

Project(s): 8680-00-71, 8680-00-72, 8998-0024

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

Proposal Schedule of Items

Project(s): 8680-00-71, 8680-00-72, 8998-0024

Alt Set ID: 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 35 of 36
Proposal ID: 20161213044
Project(s): 8680-00-71, 8680-00-72, 8998-0024

SECTION: 0001 Contract Items
Alt Set ID: Alt Mbr ID:

| Proposal <br> Line <br> Number | Item ID <br> Description | Approximate Quantity and Units | Unit Price | Bid Amount |
| :---: | :---: | :---: | :---: | :---: |
| 4820 | SPV. 0165 | 17,815.000 |  |  |
|  | Special 007. Temporary Pedestrian Access - Intersection | SF |  |  |
| 4830 | SPV. 0165 | 2,500.000 |  |  |
|  | Special 008. Concrete Sidewalk HES 6Inch | SF |  |  |
| 4840 | SPV. 0165 | 1,146.000 |  |  |
|  | Special 009. Concrete Curb Median 3Inch Sloped | SF |  |  |
| 4850 | SPV. 0180 | 53,060.000 |  |  |
|  | Special 001. Concrete Pavement 10-Inch Special | SY | - |  |
| 4860 | SPV. 0180 | 2,577.000 |  |  |
|  | Special 002. Concrete Pavement 9-Inch Special | SY |  |  |
| 4870 | SPV. 0180 | 2,568.000 |  |  |
|  | Special 003. Hydroseeding | SY |  |  |
| 4880 | SPV. 0195 | 773.000 |  |  |
|  | Special 002. Over Excavation Hauling And Disposal Of Contaminated Soil | TON |  |  |
| 4890 | SPV. 0195 | 24,405.000 |  |  |
|  | Special 003. Excavation, Hauling, and Disposal of Contaminated Soil | TON |  |  |
| 4900 | SPV. 0195 | 108.000 |  |  |
|  | Special 004. HMA Pavement 3 MT 58-28 H | TON |  |  |
| 4910 | 204.0170 | 65.000 |  |  |
|  | Removing Fence | LF |  |  |
| 4920 | 645.0140 | 3,970.000 |  |  |
|  | Geotextile Type SAS | SY |  |  |
| 4930 | SPV. 0060 | 2.000 |  |  |
|  | Special 087. Lighting Unit Type Special 4 | EACH |  |  |
| 4940 | SPV. 0060 | 1.000 |  |  |
|  | Special 088. Lighting Unit Type Special 5 | EACH |  |  |
| 4950 | SPV. 0090 | 34.000 |  |  |
|  | Special 070. Concrete Knee Wall | LF |  |  |
|  | Section: 000 |  | otal: |  |

Total Bid:

