



# Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

October 29, 2012

SUBJECT: FAP Route 757(IL 100/IL 106)  
Section (20)I  
Scott & Pike Counties  
Contract No. 72F75  
Item No. 85, November 9, 2012 Letting  
Addendum A

## NOTICE TO PROSPECTIVE BIDDERS:

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

1. Revised sheets 3, 15, 16 & 17 of the Plans.
2. Revised page i of the Table of Contents to the Special Provisions.
3. Revised pages 7-19 of the Special Provisions.
4. Added page 45 to the Special Provisions.

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

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

John Baranzelli,  
Acting Engineer of Design and Environment

A handwritten signature in cursive script, reading "Ted B. Walschleger P.E." with a small "P.E." to the right.

By: Ted B. Walschleger, P. E.  
Engineer of Project Management

cc: Roger Driskell, Region 4, District 6; Mike Renner; D. Carl Puzey:  
Estimates

dr

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River Level. Due to unpredictable weather conditions, work may have to be stopped until the river level returns to normal pool elevations. This decision will be made by the Coast Guard.

U. S. Coast Guard Contact Person.

The contact person from the Coast Guard for this rehabilitation project is:

Mr. Eric Washburn  
U.S. Coast Guard  
Coast Guard 8<sup>th</sup> District  
1222 Spruce Street  
St. Louis, Missouri 63103  
Phone: (314) 269-2300 Ext. 2378

Basis of Payment. All costs incurred by the Contractor in complying with the above requirements shall be considered as completely covered by the prices bid for the various items of work included in the contract.

## **MECHANICAL INSTALLATION SPECIFICATION**

### **1. GENERAL**

The Illinois Department of Transportation (IDOT) shall supply the following machinery items to be installed and aligned by the Contractor:

- (8) New 13 ¾" Bore Plain Journal Trunnion Bearings, Bushings, and associated liners, shim packs, and cap bolts
- (8) New Thrust Plates for Trunnion Shaft ends and associated shims and fasteners.
- (32) New 2" Counterweight Ropes, EIPS 6x25 filler wire construction, with fiber core, complete with closed spelter sockets with pins one end, and open spelter sockets with pins opposite end.
- (4) Rehabilitated counterweight trunnion sheaves with trunnions installed. Sheave grooves shall be reworked, trunnion journals and thrust faces shall be re-turned and refinished.

The Contractor shall supply new trunnion bearing mounting hardware, including new turned body studs and all other necessary parts. All other materials, lubricants, labor, and equipment necessary to perform the work shall be provided by the Contractor. Erection, installation, lubrication, testing and alignment shall be provided by the Contractor for all components, including those supplied by IDOT.

#### **1.1 DESCRIPTION OF WORK**

- A. Receiving, storage and protection of IDOT supplied trunnion bearings, thrust plates, sheaves, and counterweight rope assemblies. Fabricator to deliver new components to job site. Contractor shall provide 10 day notice of when new components must be delivered. Contractor shall provide location for unloading and storage as needed.

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- B. Verify all details and dimensions shown on the Contract Drawings through field measurements. All field measurements shall be submitted to IDOT.
- C. Remove and reinstall the counterweight sheave covers.
- D. Remove existing, and install the new, counterweight rope assemblies.
- E. Remove existing, and install the new, counterweight sheaves, trunnions, trunnion bearings and thrust plates.
- F. Strain gage testing of the lift span after installation of new counterweight ropes and sheave/bearing assemblies to measure span balance and friction of new machinery components.
- G. Proper disposal of all materials that are not to be re-used.

## 1.2 REFERENCES

Where not otherwise specified herein, workmanship, materials, and fabrication of the new bridge components shall be in accordance with the requirements of The American Association of State Highway and Transportation Officials LRFD Movable Highway Bridge Design Specifications (AASHTO), 2<sup>nd</sup> Edition (2007).

Other applicable standards:

American Society for Testing and Materials (ASTM), latest edition of all applicable standards.

American National Standards Institute (ANSI), latest edition of all applicable standards.

American Welding Society (AWS): Bridge Welding Code, D1.1-2009.

American Iron and Steel Institute (AISI), latest edition of all applicable standards.

American Institute of Steel Construction (AISC), latest edition of all applicable standards.

Federal Specifications (Fed. Spec.), latest edition of all applicable standards.

## 1.3 SUBMITTALS

### A. Procedures

The Contractor shall submit a procedure to IDOT for approval prior to commencing construction for all work shown on the Contract Drawings and herein. This shall include but not be limited to:

- Existing Machinery Precision Survey Procedure
- Counterweight Rope Installation and Tensioning Procedure (Tension Verification)
- New Machinery Precision Survey Procedure / New Machinery Alignment Procedure
- Lubrication Plan
- Strain Gage Span Balancing Procedure

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B. Standard Items

1. The Contractor shall submit copies of producer or manufacturer data according to these "Contract Specifications." These shall include specifications, tests and installation instructions for the following items, but not excluding other items or materials not specifically mentioned:
  - a) Mill reports and physical tests of all metals.
  - b) Bolts, nuts, washers, pins, sleeves and other fasteners.
  - c) Paint.
  - d) Lubricants as endorsed by machinery manufacturers.
  - e) Standard stocked items.
2. The Contractor shall prepare a complete list of all machinery items which require lubrication. The list shall contain the type of lubricant used and the date it was installed and lubricated by the Contractor, and shall be given to IDOT prior to start up and testing of the machinery.

C. Fabricated Items

1. The Contractor shall submit shop drawings to IDOT, as per Article 505.03 of the Standard Specification and modified herein, for approval in accordance with these specifications. These shall include complete details, classification of materials, schedules for fabrication and shop assembly, procedures and diagrams showing sequence and details for erection and approval. All shop drawings, layout drawings, as-built drawings, etc. shall be submitted in both paper format as well as CAD format with line types, layers, fonts, etc. conforming to IDOT established CAD standards.
2. Shop drawings shall be given a suitable title to describe the parts detailed thereon, and each drawing shall be identified by the complete project name and number. Shop drawings shall include the following information:
  - a) Reference to the standard material specifications for each item.
  - b) The surface finish of machined surfaces and tolerances for each dimension for which a specific fit is required. A general tolerance block shall be used to define the tolerances of all other dimensions. Fits and finishes shall be as defined in Section 6.7.8 of AASHTO, or as specified by the manufacturer, whichever is more rigorous.
  - c) Quantity required for each item.
  - d) Heat treatment or specific hardness requirements where applicable.

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- e) The Contractor shall furnish complete data on the design and construction of any unit furnished as part of the machinery under this Contract, including material specifications, cross section assembly drawings, detail drawings, and dimensions of principal elements.
- f) Complete shop bills of materials shall be included for all machinery parts. If the bills are not shown on the shop drawings, prints of the bills shall be furnished for approval in the same manner as specified for the drawings. The computed weight of each piece of machinery shall be stated on the shop drawing upon which it is detailed.
- g) Complete assembly and erection drawings shall be furnished. These drawings shall give identifying marks and essential dimensions for locating each part of assembled unit with respect to the bridge or foundation.
- h) Shop drawings which have not been approved or require correction shall be resubmitted until such time as they are acceptable to IDOT, and such procedure shall not be considered a cause for delay. The Contractor shall bear all costs or damages which may result from the ordering or fabrication of any materials prior to the acceptance of the shop drawings. As a means of expediting delivery prior to acceptance of the shop drawings, the Contractor may request in writing from IDOT approval to order raw materials of the correct type for later fabrication from accepted shop drawings. Such approval by IDOT shall be in writing. After acceptance of the shop drawings, the Contractor shall supply IDOT with additional copies of the accepted drawings as may be required.

#### D. Source Quality Control

1. Inspection: Materials and fabrication procedures are subject to inspection and testing in the mill, shop and field by IDOT. Such inspections and tests will not relieve the Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements.
2. Design of Items and Connections: All details shown on the Contract Drawings are typical and apply to general conditions on the bridge, unless otherwise indicated. All dimensions and details shall be verified at the site before proceeding with any work and to avoid causing subsequent delay in work.  
  
IDOT shall be notified immediately for clarification whenever any portion of work is not clearly or accurately defined or dimensioned.
3. Certified Test Reports: As used herein, certified test reports refer to reports of tests conducted on previously manufactured materials or equipment identical to that proposed for use. Revised 10/29/2012

4. Factory Tests: As used herein, factory tests refer to tests required to be performed on the actual materials or equipment proposed for use. Results of the tests shall be submitted in accordance with the provisions of this Contract for laboratory test results.
5. Quality Assurance Testing: IDOT or designated engineering inspectors may select sample materials for quality assurance testing for specification compliance. Testing may be on-site or by an independent laboratory. Test results shall be furnished to IDOT for reference or for other applicable disposition if not in compliance.
6. Warranty: The Contractor shall remedy defects due to quality of work, erection, or design for a period of one year after final tests and acceptance have been made, at his own expense. The Contractor shall furnish a satisfactory guarantee to ensure correction of defects. If necessary, such defects may be corrected by other capable contractors, as approved by IDOT, at the expense of the Contractor.

E. Contractor Experience

The following lists of Contractor experience shall be submitted to the IDOT.

1. The Contractor shall submit a tabulation of experience in the installation of movable bridge components, specifically for vertical lift bridges. The experience shall specifically show past projects involving vertical lift bridge counterweight rope and sheave change out as well as working in a United States Coast Guard marine outage.
2. The strain gage testing subcontractor shall have a minimum of 5 years experience in strain gage balancing vertical lift bridges.
3. The counterweight rope tensioning subcontractor shall have a minimum of 5 years experience in measuring and directing the adjustment of counterweight rope tensions on vertical lift bridges.
4. The onsite supervisory personnel of the machinery installation and operation shall each have a minimum of five years of experience in the installation of movable bridge operating machinery, specifically for vertical lift bridges.

2. PRODUCTS

2.1 MATERIALS

A. General

All materials shall be new and conform to standard ASTM and other specifications included previously and indicated on the drawings and herein, or as may be otherwise applicable.

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No item shall be fabricated or machined without sufficient advance notification to IDOT to permit scheduling of required inspection. The Contractor shall furnish all facilities and provide for the free access at the plant or shop for the inspection of material and workmanship. Inspection and testing shall conform to the following requirements:

- 1) Inspection at the plant or shop will not relieve the Contractor from responsibility for furnishing satisfactory materials and workmanship. Acceptance of a material or item shall not prevent subsequent rejection if material is found defective. The Contractor shall remedy defects due to workmanship, erection, or design for a period of one year after final tests and acceptance have been made, at his own expense. The Contractor shall furnish a satisfactory guarantee to ensure correction of defects. If necessary, such defects may be corrected by others at expense to the Contractor.
- 2) The Contractor shall furnish IDOT with the number of copies of purchase orders as may be required.
- 3) Unless otherwise provided, the Contractor shall furnish without charge, test specimens required herein, and all labor, testing machines, tools and equipment necessary to prepare the specimens and to make the physical tests and analyses. Two copies of test reports and chemical analyses shall be furnished to IDOT.

**B. Standard Products**

Materials and equipment shall be essentially the standard cataloged products of manufacturers regularly engaged in production of such materials or equipment and shall be the manufacturer's latest design that complies with the specification requirements. Materials and equipment shall essentially duplicate items that have been in satisfactory commercial or industrial use at least two years prior to bid opening. Where two units of the same class of equipment are required, these units shall be products of a single manufacturer; however, the component parts of the system need not be the products of the same manufacturer. Each major component of equipment shall have the manufacturer's name and address and the model and serial number on a nameplate, securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.

**C. Manufacturer's Recommendations**

Where installation procedures or any part thereof are required to be in accordance with the recommendation of the manufacturer of the material being installed, printed copies of these recommendations shall be furnished to IDOT prior to installation. Installation of the item will not be allowed to proceed until the recommendations are received. Failure to furnish these recommendations can be cause for rejection of the material.

**D. Electrodes for Welding**

Electrodes for welding shall comply with AWS D1.1-2009.

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E. High Strength Bolts, Nuts and Washers

Heavy hexagonal head structural bolts, heavy hexagonal nuts, and hardened washers complying with ASTM A325 or ASTM A449, Type 3, A563, Grade C, and F436 respectively.

F. High Strength Turned Bolts and Studs

All turned bolts and turned studs shall be made from material and have a strength equal to ASTM A449, Type 3.

G. Shims

Where shown on the drawings, all machinery shims required for leveling and alignment of equipment shall be ASTM A167, Type 316.

## 2.2 DETAILS AND WORKMANSHIP

The machinery shall be finished, assembled, and adjusted in an approved manner and according to the best machine shop practice. The limits of accuracy which are to be observed in machining the work, and the allowances for all metal fits shall be placed on the Contractor's working drawings. Fits and finishes of machinery parts shall be as called for on the Contract Drawings or as specified in AASHTO Section 6.7.8.

Where surface finishes are indicated in the Contract Drawings or specified herein, the symbols used for finishes specified are in accordance with ANSI B46.1, "Surface Texture." Values of roughness height are specified in micro-inches as an arithmetical average deviation from the mean line. Roughness specified is the maximum value, and any smoother finish will be satisfactory. Compliance with specified surface will be determined by trained sense of feel and by visual inspection of the work compared to a standard roughness gage and in accordance with the provisions of ANSI B46.1. Values of roughness width and waviness are not specified, but shall be consistent with the general type of finish specified by the roughness height. Flaws such as scratches, ridges, holes, peaks, cracks or checks which will make the part unsuitable will be cause for rejection.

Where finish is not indicated or specified, the finish shall be that type which is most suitable for the application, and shall be consistent with the class of fit required. Parts of machinery in contact with other machinery parts or with supports shall be machined so as to provide even, true bearing. Surfaces in rotating or sliding contact with other surfaces shall be finished true to dimensions given and highly polished. Surfaces to be machine-finished shall be indicated on shop drawings by symbols which conform to ANSI B46.1.

So far as practicable, all work shall be laid out to secure proper matching of adjoining unfinished surfaces. Where there is a large discrepancy between adjoining surfaces, they shall be chipped and ground smooth, or machined, to secure proper alignment. Unfinished surfaces shall be true to the lines and dimensions shown on the shop drawings and shall be chipped or ground free of all projections and rough spots. Depressions or holes not affecting the strength or usefulness of the parts may be filled in a manner approved by IDOT.

A. Shims.

All machinery shims shall be neatly trimmed to the dimensions of the assembled parts and drilled for all bolts that pass through the shims. Shims shall be placed to provide full contact between machinery and machinery supports.

B. Turned Bolts and Turned Studs.

The body of the turned bolts and studs shall be finished to 63 micro-inches or better, as defined by AASHTO Section 6.7.8. Threads for the turned bolts and studs and nuts shall conform to the Unified Thread Standards, coarse thread series with a Class 2A tolerance for bolts and Class 2B tolerance for nuts, in accordance with ANSI B1.1, unless otherwise specified. Turned bolts and studs are designated by their nominal thread size. The turned bolt and stud body shall be 1/16th of an inch larger in diameter than the nominal size specified, and shall have an LC6 fit with holes reamed for the body diameter. Bolt head and nut bearing surfaces shall be flat and square with the axis of the bolt holes and shall be spot faced if necessary. Machinery mounting bolts shall be turned bolts unless otherwise noted on the Contract Drawings. Positive type locking shall be provided. Double nuts are preferred. Where double nuts are used, heavy hex and jam nuts shall be used. Alternate locking methods shall be submitted to IDOT for approval.

C. Welding

Welding materials and methods required herein or called for on the Contract Drawings shall comply with AWS D1.1 2009.

3 EXECUTION

3.1 GENERAL

Erection work shall not commence until the required items have been completed and approved for installation, and until preparations by others where required have been satisfactorily completed.

The Contractor shall provide personnel and supervising engineers familiar and experienced in the installation of movable bridges and their components, especially for vertical lift bridges. The Contractor shall provide all equipment that may be required for the proper and accurate installation of the components.

Throughout the installation, bolts and nuts shall be adjusted or tightened only with wrenches that fit; tightening with chisels and hammers will not be permitted.

A. Lift Span Strain Gage Testing

After completing the new machinery installation (sheaves, trunnions, trunnion bearings, and wire ropes) the Contractor shall measure the lift span balance and new system friction using the strain gage method. Span imbalance and friction shall be determined for each end of the lift span from data collected for at least three complete lift cycles to ensure repeatability. A full strain gage report, including graphs illustrating torque, strain, and imbalance plotted against height of lift, shall be submitted to IDOT.

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Measured friction shall be reported as a coefficient of friction value for the trunnion bearings. The design value of the coefficient of dynamic friction, which is conservatively high, is 0.09. Measured values in excess of the design value may require investigation and corrective action performed by the Contractor of the trunnion bearing alignment and lubrication, depending on the severity of the excess.

#### B. Precision Survey

An initial precision survey of the existing sheave, trunnion, and trunnion bearing alignments shall be performed by the Contractor. This survey shall locate the sheaves, trunnions and trunnion bearings in each tower with respect to permanent reusable bench mark(s) installed by the Contractor. All results shall be submitted to the IDOT for review. After jacking the counterweight the precision survey shall be repeated to determine the effects of the shift and reduction of dead load. All survey data shall be submitted to the IDOT for review. The Contractor shall propose the preliminary location (prior to applying the full dead load of the lift span) of all new machinery with respect to the permanent bench mark(s).

#### C. Sheaves, Trunnions, Trunnion Bearings, and Thrust Plates

The machinery: sheaves and trunnions, trunnion bearings, thrust plates, wire ropes, and associated components shall be erected and adjusted by competent mechanics and millwrights skilled in the type of work involved. They shall be provided with all necessary precision measuring and leveling instruments as may be required. The machinery shall be erected with exactness so the various parts are truly aligned in their proper positions and, when entirely assembled, will operate smoothly without binding or undue looseness of the parts.

All parts of the machinery shall be erected in accordance with erection marks and match marks. When the final position of the machinery will change upon application of the full dead load, the final adjustments shall be made after the dead load is fully applied. Before final drilling or reaming, all parts shall be adjusted to exact alignment by means of shims furnished for each part. After final alignment and bolting, all parts shall operate smoothly.

Before erection, all finished surfaces, which were coated by a rust inhibiting coating, shall have the coating removed with an approved solvent. Shaft journals and bearing bushings shall be coated with grease prior to installation. The grease used shall be the same grease approved for use after the installation. While machinery parts are being erected, and work is interrupted, they shall be covered by a sound tarpaulin or other durable waterproof covering.

Bolt holes in structural steel for connecting machinery with turned bolts/studs shall, in general, be drilled after final alignment of the machinery. Sufficient erection holes, sub-drilled 1/8 to 1/4 of an inch undersize for temporary bolts, may be used for erection and alignment of the machinery. When the machinery is aligned in its final position, full size holes for the permanent turned bolts shall be sub-drilled and reamed, full size bolts/studs installed, and the temporary bolts/studs removed. The Contractor shall provide appropriate tooling and drilling fixtures as necessary to drill and ream for turned bolt holes through new and existing steel.

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The sheave/trunnion assembly and trunnion bearings shall be carefully located and adjusted so that both sheaves in each tower are accurately aligned. The alignment of the sheaves shall be obtained vertically, transversely, and longitudinally such that, when the full dead load of the lift span and counterweights is carried by the sheaves/trunnions, the axes of the two sheave trunnions of each tower will be level horizontal lines at right angles to the centerline of the bridge, parallel to within 1/16" total offset in any direction. Vertical adjustment shall be obtained by use of full size shims. In setting the sheave/trunnion and bearings, allowance shall be made for the anticipated movement of the assemblies under the deformations of all the supporting members due to the total dead load of the span, counterweights, sheaves, ropes and bearings. The Contractor shall submit a detailed assembly and alignment procedure for installation of the sheave/trunnion assemblies to IDOT for approval.

The sheave/trunnion assemblies and their bearings shall be assembled, erected, aligned, and adjusted at the bridge site. IDOT shall be afforded every opportunity and facility to satisfy themselves that the work is being done in accordance with the Contract Drawings, specifications, and acceptable construction practices.

#### D. Installation of the Counterweight Ropes

Rope length shall not be adjusted after shipment from the manufacturer.

The counterweight ropes shall be carefully removed from reels or coils by revolving them and shall be erected as to avoid any kinks or bends. The ropes shall not be pulled through dirt or water. The stripe painted on each rope in the shop shall be straight and facing outwards after the rope is installed. The contractor shall show the erection procedure for the counterweight ropes on the shop drawings.

**The length of the existing turnbuckles at the counterweight connection shall be documented and submitted to IDOT prior to the removal of the existing ropes.**

When the counterweight ropes have been removed at each location, the equalizer plates, linkages, and associated pivots shall be lubricated and moved until no pivot points are seized. Each linkage should pivot to permit rope tension equalization during installation. There are eleven pivots per corner of the bridge.

**The existing turnbuckles shall be lubricated to ensure freedom of adjustment and movement prior to the installation of the new counterweight ropes. After lubrication of the turnbuckles is complete, each turnbuckle length shall be verified and adjusted as necessary to match the documented length prior to removal of the existing ropes.**

The lifting girder connection points and rope splay plates shall be cleaned and all sharp edges removed prior to the installation of the new counterweight ropes. Rope contact areas shall be lubricated. All other exposed surfaces shall be painted.

The counterweights shall be jacked and shimmed to permit the removal of existing wire ropes (~~including turnbuckles at counterweight connection~~) and installation of the new wire ropes. **The existing turnbuckles shall remain installed and be reused with the new wire ropes.**

After the lift span is in operating condition, the Contractor shall properly clean all new ropes of all foreign material and shall furnish and apply hot, in an approved manner, and when weather conditions are suitable, one coat of lubricant that is compatible with that applied during rope fabrication and recommended by the wire rope manufacturer in writing. The Contractor shall remove all seizing at all sockets, properly clean the area, and apply an approved sealing compound at the end of the sockets as per the wire rope manufacturers recommendations. The Contractor shall furnish copies of letters from the wire rope manufacturer endorsing the lubricants and sealants used.

#### E. Transferring Load to New Counterweight Ropes

The complete counterweight loads shall be transferred to the counterweight ropes in the following recommended order:

The counterweight shall be jacked and the shims removed. Then the counterweight shall be lowered onto the new counterweight ropes. The position of the lift span shall be monitored during the counterweight load transfer to ensure that the lift span is not raised off of the temporary lift span support at any time during or after the full transfer of the counterweight load.

After completing the load transfer of the counterweight to the new ropes, the Contractor shall prepare the lift span and counterweight for final strain gage balance and friction testing.

Once the lift span balance and friction testing is completed and accepted by IDOT the Contractor can proceed with test operating the span as required in the Rope Tensioning section below.

#### F. Rope Tensioning

The Contractor may propose alternative methods to IDOT for approval. Tension tests shall be performed after the bridge has been operated through no less than 15 operating cycles.

Place the span in the fully seated position with the entire weight of the counterweight transferred to the ropes on each tower.

Induce vibrations in the span side length of each wire rope, one at a time. Using a stopwatch and touching or holding the ropes, record the time for twenty vibrations (first order "free vibrations"). Conduct three separate tests for each rope and calculate the average number of vibrations per second. Any approved method may be used to establish the vibrations in the ropes; the frequency of the vibrations does not depend upon the method used. Useable vibrations will be noticeable to the touch and must be first-order.

Adjustments to the equalizer plates and linkages may be necessary if linkages are bound. Adjustments to equalize the tensions should be conducted and the span operated at least three times. Each rope shall then be retested as required until the average frequency for each individual rope is within 5% of the average frequency for all of the ropes on one tower. Adjustments to the equalizer plates and linkages may include use of penetrating lubricant or use of an approved adjustment procedure.

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**If necessary, the turnbuckles at the counterweight rope connections may be used to adjust the tension in the event that the rope equalizers do not provide adequate rope tension adjustment.**

All tension measurements, including any tension adjustments performed, shall be submitted to IDOT in a report contain graphs showing the distribution of the rope tensions.

Perform this procedure on both towers.

### 3.2 DELIVERY, STORAGE and HANDLING

- A. Fabricator shall deliver new components to job site. Any special provisions used for material handling shall be provided by the Contractor.
- B. Components and materials shall be properly packaged and protected from initial pick up until the time of installation.
  - 1. Assembled units shall be mounted on skids or otherwise crated for protection during shipment and storage.
  - 2. Finished and unpainted metal surfaces that would be damaged by corrosion, shall be coated with a .030" minimum film thickness, as soon as practicable after finishing, of an approved wax based corrosion preventative treatment. This coating shall be removed from all surfaces prior to lubrication for operation and from all surfaces prior to painting after erection. If the anti-rust coating on any part becomes compromised prior to part installation, the coating shall be restored immediately. As an alternative, metallic components may be wrapped in paper treated with volatile corrosion inhibitors (VCIs) or polyethylene VCIs, and further wrapped in polyethylene. When weatherproof containers are used, they shall be lined with multiple bags of silica gel desiccant.
- C. Material storage on site shall afford easy access for inspection and identification, protection from the ground and prevent distortion or damage.
- D. The Contractor shall dispose of all removed materials in accordance with all pertinent existing legal and environmental requirements and guidelines for material disposal in effect at the time of letting. IDOT shall specifically identify which items are to be retained. Retained items shall be delivered and stored as directed by IDOT, and all others shall be properly discarded as required.

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4 BASIS OF PAYMENT

Payment for the Mechanical Installation will be made at the contract lump sum price bid for which price and payment shall be full compensation for furnishing all labor, materials, and equipment necessary to complete the work under the item in accordance with the Contract Drawings and these Specifications, including painting, testing, lubricating and all other features necessary to insure the satisfactory operation of the bridge.

Lubricants will not be measured for payment but the cost thereof shall be included in the prices stipulated.

Description	Units
Counterweight Wire Ropes – Install Only	Lump Sum
Trunnion Bearings – Install Only	Lump Sum
Trunnion/Sheave Assemblies – Install Only	Lump Sum

**AGREEMENT TO PLAN QUANTITY (BDE)**

Effective: January 1, 2012

Revise the second paragraph of Article 202.07(a) of the Standard Specifications to read:

“When the plans or work have been altered, or when disagreement exists between the Contractor and the Engineer as to the accuracy of the plan quantities, either party shall, before any work is started which would affect the measurement, have the right to request in writing and thereby cause the quantities involved to be measured. When plan quantities are revised by the issuance of revised plan sheets that are made part of the contract, and the Contractor and the Engineer have agreed in writing that the revised quantities are accurate, no further measurement will be required and payment will be made for the revised quantities shown.”

Revised 10/29/2102

## **WEIGHT AND HEIGHT INFORMATION**

The replacement sheave wheels were produced around 15 years ago by Youngberg Industries, Inc. out of Belvidere, IL and weigh approximately 17,750 lbs (est.) each. They are being painted and reconditioned by G&G Steel out of Russellville, AL.

The existing towers are approximately 97' from the center of the sheave wheel to the existing deck in the lowered position. The distance from the roadway to the low/high water is approximately 32'/12', leading to a total height from water elevation to center of sheave wheel of 129' to 109' at low and high water. It is the Contractor's responsibility to verify the height based on water levels at the time of construction.

Added 10/29/12