Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

September 14, 2011

SUBJECT: FAP Route 112 (IL 53/Ruby St.)
Section M-BDR-1
Will County
Contract No. 62714
Item No. 15, September 23, 2011 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. Replaced the Schedule of Prices.
2. Revised sheets 1, 2, 5, 10 & 40 of the Plans.
3. Added sheets 9A, 57A & 57B to the Plans.
4. Revised page ii of the Table of Contents to the Special Provisions.
5. Revised pages 44 - 47 of the Special Provisions.
6. Added page 112 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,

Scott E. Stitt, P.E.
Acting Engineer of Design and Environment

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

cc: Diane O'Keefe, Region 1, District 1; Mike Renner; D.Carl Puzey; Estimates

TBW:MS:jc

ILLINOIS DEPARTMENT OF TRANSPORTATION
SCHEDULE OF PRICES
CONTRACT NUMBER - 62714

State Job # - C-91-115-04
PPS NBR - 1-02960-0100
County Name - WILL- -
Code - 197 - -
District - 1 - -
Section Number - M-BDR-1

Project Number

Route FAP 112

*** REVISED: SEPT 13, 2011**

Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
X0325204	TIMBER SDWLK REM REPL	L SUM	1.000				
X0327286	SUBSTR REP GROUT BAGS	L SUM	1.000				
X7010216	TRAF CONT & PROT SPL	L SUM	1.000				
Z0003801	BEARING RETROFIT	L SUM	1.000				
Z0007112	C&D LEAD PT CL RES	L SUM	1.000				
Z0007750	BRDG TNDR HOUSE REHAB	L SUM	1.000				
Z0010501	CLEAN & PT STL BR N1	L SUM	1.000				
Z0012754	STR REP CON DP = < 5	SQ FT	3.000				
Z0015550	DEBRIS REMOVAL	CU YD	40.000				
Z0027725	GEAR REDUCER SERVICE	L SUM	1.000				
Z0029603	HANDRAIL REPAIRS	L SUM	1.000				
Z0030850	TEMP INFO SIGNING	SQ FT	48.000				
Z0033750	MACH B BRG GRS GRV CL	L SUM	1.000				
Z0068508	STEEL GRID DECK REPRS	L SUM	1.000				
Z0069900	SUMP PUMP REPLACEMENT	L SUM	1.000				

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Item Number	Pay Item Description	Unit of Measure	Quantity	x	Unit Price	=	Total Price
*ADD Z0073500	TEMP SUPPORT SYSTEM	L SUM	1.000				
Z0076700	TRN BRG GRS GRV CLN	L SUM	1.000				
67000400	ENGR FIELD OFFICE A	CAL MO	4.000				
67100100	MOBILIZATION	L SUM	1.000				

PROJECT LABOR AGREEMENT 84
404 PERMIT 97
TEMPORARY SUPPORT SYTEM 112

Revised 09/14/2011

BEARING RETROFIT (MAIN PINION BEARINGS)
Revised: September 9, 2011.

Description
This Special Provision defines the materials, tolerances and procedures for the replacement of the out-of-tolerance main pinion shaft bronze bearings.

a. *Bearing and liner materials.* The main bearings shall conform to ASTM B271 Copper Alloy C92200 Navy "M" Bronze for centrifugal castings or ASTM B 584 Copper Alloy C92200 Navy "M" Tin Bronze for sand castings. Castings in their final machined state shall be free of porosity, voids, injurious non-metallic inclusions such as sand, chills or other debris. The castings shall be ultrasonically tested for the presence of flaws. Internal flaws larger than 3/16" in diameter shall be cause for ejection of the casting. Grain size shall be kept to its smallest size in accordance with the casting process.

   Each bearing shall be machined to match with its respective bearing support, such that the internal radii of each bearing cap and support matches that of its corresponding outer radii of its matching bearing. Each bearing shall carry a mark of correspondence with a particular bearing and support, such as NE-U, SE-L, NW-U, etc.

   Liner bars shall be free-cutting brass, conforming to ASTM B16 Copper Alloy C36000 Half-Hard Temper, 1.5" thick x 6.13" wide. Surface roughness of the liner bars shall be 63 microinches or better, and shall be flat and parallel within 0.002" over a distance of 20".

b. *Removal and inspection of bearing caps and pinion shafting.* After one leaf is blocked and supported with a structure conforming to paragraph a., the bearing caps shall be removed and inspected for any flaws, cracks or other defects which could preclude their further operation. If any bearings exhibit such defects, their nature and extent shall be reported to the Resident Engineer for determination of repair procedures. Any repairs required shall be a separate pay item.

   If there are no defects discovered, the bearing caps shall be cleaned and remachined if necessary to fit the new bearings. The bearing cap exteriors shall be painted with machinery grey paint.

   The existing main pinion shafts shall be examined for any external gouges, score marks or cracks, particularly in the main bearing zone. This zone shall be examined by dye penetrant for any suspicious areas of distress. The large end of the shaft shall be examined by ultrasonic testing, noting any internal indications larger than ½" as to position in the shaft and size. The ultrasonic testing shall employ the use of blocks or bars with known indications for calibration purposes. The operator shall be qualified at least an ASNT Level II for ultrasonic inspection. The ultrasonic testing shall provide a report of indications noted and their location for all four main pinion shafts.

   The pinion shafts shall be hoisted or elevated to permit removal of the bottom portion of the existing bronze bearing. The Contractor shall submit a plan for elevating and supporting the pinion shafts. The plan shall be reviewed by the Engineer for adequacy.

Revised 09/14/2011

The Engineer shall provide written approval to the Contractor prior to commencement of work. After raising the pinion shafts, each bronze bearing shall be inspected for excessive scoring and wear. The bearing support shall be inspected for any cracking, excessive wear or distortion. The radius of the existing bearing support shall be measured to verify that it is 11.000". If not, the bearing support shall be re-machined by line boring at the bridge. The new radius shall conform to its corresponding new bearing. New grease port exit holes shall be drilled into the existing bearing support frame to correspond with the grease channel lines in the new bearings, and then tapped with ½"-NPT threads for plugs.

Existing bearings that are salvageable shall be retained by the Department as spares for emergency purposes. If the bearings are salvageable and wear is not severe and no loss of circularity, they shall be lightly machined to remove score marks and polished to a 16 µin finish. Grease grooves shall be cleaned and re-cut to increase their depth by 1/32" (0.031"). Salvageable bearings may have a clearance not to exceed RC7. Bearings which exceed an RC7 clearance shall be considered as scrap.

c. *Ultrasonic testing (UT), magnetic particle testing (MT) and liquid penetrant testing (LT).* The inspections shall be carried by operators and technicians skilled in the application of ultrasonic testing equipment, including transducers, back reflection methods, calibration devices and interpretation. Magnetic particle test technicians shall be knowledgeable in the use of electrical prods, magnetic cable wrapping, wet fluorescent particles, UV light and flaw interpretation. Liquid penetrant technicians shall be familiar with dye penetrants, developers, and flaw interpretations. The Contractor shall submit the qualifications of the technicians and operators on behalf of their subcontractor intended for this work. Certifications of skill by the American Society for Non-Destructive Testing (ASNT) Central Certification Program at Level II shall be submitted to demonstrate experience in the three techniques cited above, and will be considered mandatory for this work.

d. *Bearing temperature monitors.* A small diameter hole shall be drilled into each bearing cap which is 1/32" larger than the thermocouple diameter. The bearing cap hole shall be at the top of the cap and located 3" away from the flare of the bearing on the large end of the pinion shaft. A bayonet-style thermocouple shall be in contact with the bronze bearing. The temperature range of the thermocouple shall be at least from -40ºF to +300ºF, with an accuracy of ±2ºF. Part of the thermocouple shaft shall be threaded, permitting it to be secured into the bearing cap. The thermocouple shall be ungrounded to prevent bearing and noise interference, and be Omega Engineering BT-000-J-60-2 with a Style 2 termination or approved equivalent. A transmitter device shall be mounted nearby the mean bearing shafting for each main pinion bearing. Transmitter devices shall function on the voltage recommended by the manufacturer. Thermocouple transmitters shall be Omega Engineering UWTC-2-NEMA or approved equal. The receiver shall be capable of receiving at least four separate bearing temperatures, and provide a digital display of temperature. The receiver shall be equivalent or better than an Omega Engineering wi833-U receiver. The receiver shall be mounted in the operator's house within close proximity and sight of the operator's console.

Revised 09/14/2011

e. *Main pinion gear tooth measurements.* The teeth of each main pinion spur gear shall be measured at its pitch line to determine the extent of wear. The Contractor shall use a tooth thickness caliper accurate to 0.001", and provide a report to the Department for each gear.

f. *Bearing lubricants.* Bearing lubricants shall be high-to-extreme pressure lubricants, exhibiting anti-wear properties, with excellent adhesion to metallic surfaces, and resistance to water-washout. The lubricants shall contain molybdenum disulfide for load resistance. The lubricants must contain corrosion inhibitors to minimize any damage or pitting to polished steel or bronze bearing surfaces.

(1). Viscosity. Lubricants shall be formulated for lower speed, higher bearing pressure applications, and shall have a minimum ASTM D 445 viscosity of 320 centistokes at 40°C and 30 centistokes at 100°C.

(2). Flash point. The minimum flash point shall be at least 135°C.

(3). Operating Range. The range of operation shall be -20°C to +120°C. Approved greases are Mobil Centaur Moly 2 or ChevronTexaco Starplex Moly MPGM2 or Timken Construction and Off-Highway Grease GR219 or SKF LGEM 2 Grease. An approved equal shall be acceptable upon submission of technical data sheets to verify conformance to the requirements of this specification.

g. Open gear lubricants. Open gear lubricants shall be applied to racks and pinion Lubricants shall be extreme pressure type, exhibiting anti-wear properties, and have resistance to water-washout. The lubricants shall have a high tack, with excellent adhesion to gear teeth. The lubricants must contain corrosion inhibitors, and shall have the following minimum properties:

(1). Viscosity. The minimum viscosity according to ASTM D445 shall be at least 900 centistokes at 40°C with solvent and 90 centistokes at 100°C.

(2). Flash Point. The minimum flash point shall be at least 93°C.

(3). Operating Range. The range of operation shall be -18°C to +90°C. Approved grease lubricants are: Conoco Gearshield NCW or Mobiltac MM, or approved equal upon submission of technical data sheets to verify conformance to requirements of this specification.

Basis of Payment. This work will be paid for at the contract lump sum price for BEARING RETROFIT, which shall be payment in full for furnishing all labor and equipment as herein specified.

Support of each leaf while work is being done is not included in this item; see the special provision entitled TEMPORARY SUPPORT SYSTEM.

Revised 09/14/2011

STEEL GRID DECK REPAIRS
Effective: January, 2008

Description: This item shall consist of furnishing all material, equipment and labor to re-secure the steel grid deck panels to the underlying superstructure and to each other as directed by the Engineer.

Construction Requirements: The Engineer shall locate and mark all locations where the existing bolts attaching the steel grid deck to the stringers or bolts holding the deck panels together are not properly tightened and is allowing the panels to move under live load.

The Contractor shall mechanically remove the existing fasteners at the locations marked. No flame cutting of the fasteners will be allowed. New fasteners of the proper size and type shall be installed at each location and properly tightened. Where the steel grid is bolted to the top flange of the stringers, shims may be required to achieve the proper alignment of the grid.

Basis of Payment: The work as specified herein shall include all materials, equipment and labor necessary to satisfactorily secure the steel grid deck panels and shall be paid for at the contract lump sum price for STEEL GRID DECK REPAIRS.

TIMBER SIDEWALK REMOVAL AND REPLACEMENT

This item shall consist of the removal and disposal of the existing timber sidewalk, and its associated hardware according to the requirements of Section 501 of the "Standard Specifications", replacement with treated timber and its associated hardware according to the requirement of Section 507 of the "Standard Specifications" with a treatment suitable for human contact.

The Contractor shall perform this work in such a manner that debris is not dropped into the river.

Basis of Payment. This work will be paid for at the contract lump sum price for TIMBER SIDEWALK REMOVAL AND REPLACEMENT, which shall be payment in full for furnishing all labor and equipment as herein specified.

BRIDGE TENDER HOUSE REHABILITATION
Effective: Sept. 24, 2001

Description. This work shall consist of repairs to the Bascule Bridge Operator's House as shown on the plans and as specified herein. These repairs shall include replacing the electric incinerating toilet, replacing the electric furnace and air conditioning units, removing and replacing or repairing plaster walls and ceiling, painting the interior second floor of the tender house, tuck pointing the exterior wall of the tender house all collateral work, labor, materials and equipment necessary to complete the repairs.

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TEMPORARY SUPPORT SYTEM
Revised: September 9, 2011

Description: This item shall consist of furnishing all material, equipment and labor to lock in place at a raised position of 35 degrees the movable span leaves of the Ruby Street bridge over the Des Plaines River (SN 099-9901), located in Joliet for the removal and replacement of the main pinion shaft bronze bearings and the removal of the trunnion bearing caps for lubrication..

Construction Requirements: Because navigational requirements established by the US Coast Guard for the Des Plaines River, a navigable river routinely carrying barge traffic in the Joliet area, the spans must be in the raised position at 35 degrees for river passage while completing this work.

The Contractor shall submit details and calculations, prepared and sealed by an Illinois Licensed Structural Engineer, of the support system he/she proposes to use for approval of the Engineer prior to ordering of material and implementation. Such approval shall in no way relieve the Contractor of responsibility for the safety of the structure. The Temporary Support System shall consist of a steel framework designed to support the longitudinal and diagonal wind loads specified in the contract plans. Reactions for different wind load speeds have been provided. It is the responsibility of the Structural Engineer to determine which wind speed to design the Temporary Support System for and his choice must be justified in his calculations.

Two alternate schematic systems have been included in the plans for the engineer's information. The structure shall be anchored at the live load anchor points located on the river side of the counterweight pit, and blocking restraints shall be attached to the counterweight of the leaf span, and anchored to the counterweight pit concrete.

The contractor is responsible for all field measurements on both sides of the bridge used in the live load bearing and counterweight support plans at the 35° raised leaf position. This must be done on both sides of the bridge as dimensions may vary in the counterweight pit and the live load bearing clearances at 35°.

Basis of Payment: The work specified herein, as shown on the plans and as directed by the Engineer, shall be paid for at the contract unit price each for TEMPORARY SUPPORT SYSTEM for each leaf.