



## PROJECT DESCRIPTION

The Kane County Division of Transportation (KDOT) has approved the linked approved set of final plans for the above listed project as prepared by Hampton, Lenzini and Renwick, Inc. (HLR) and dated February 23, 2009. The Bowes Road over Fitchie Creek Bridge Replacement project consists of the removal and replacement of an existing bridge with a precast 3 sided structure. To further assist you in understanding the project we have included a brief summary of project 02-00293-00-BR as listed below:

The Bowes Road over Fitchie Creek Bridge Replacement project is a remove and replace project with removal of an old existing single span bridge on a skewed alignment and replacement with a more modern and larger precast 3 sided structure on the same alignment. The new structure will have poured in place footings on steel piles with precast sections and wing walls as well as a HS 20 rating. Class A4 Rip Rap will protect the new ends of the bridge from erosion and the occasional turbulent flows that may be associated with seasonal rainfall events. The project is located just west of the City of Elgin limits with a project length of approximately 350 feet immediately east and west of the existing structure on Bowes Rd between Randall and Corron Roads. The project spans approximately 0.06 miles with an estimated cost and duration of approximately 628,000 dollars and 5 months, respectively. The project will be constructed under closed road conditions with traffic control management via a posted detour route.

- a. The bridge replacement will require earth, structure, underwater structural and channel excavation, with furnished excavation and possible embankment trimming to maximize the creek flow into the new structure.
- b. In creek flows will be managed by a contractor installed diversion methods as per the plans and specs.
- c. Utility relocation/coordination Com Ed and possibly AT&T will be required which will necessitate co-ordination between the Contractor, the contractor's subs, the County and utility companies.
- d. Other project items include pavement and guardrail removal and replacement.
- e. Traffic control will involve establishment and maintenance of the approved detour route which uses Randall, Silver Glen and Corron Roads as alternates, as well as other temporary measures per the plans.
- f. Restoration and landscaping will entail topsoil, fertilizer, approximately 0.4 acres of seeding.
- g. Major design challenges involve design of a skewed structure, choice of detour route and restoration landscaping.
- h. Major construction challenges involve MOT, Construction of a skewed structure, management of excavated soil and embankments, potential staging of construction materials to minimize damage/disturbance to adjacent property during construction.
- l. Construction is scheduled to begin as early as May 2009. Documentation and field practices are per IDOT Standard Specifications for Road and Bridge Construction as well as other referenced sources per plans and specs. Additional details may be found in the attached set of approved plans.



- viii. Mark contract plans in red to provide record drawings (As-Built Plans) of the completed project for permanent record. Submit one set of As-Built Plans to the DEPARTMENT at the time of final payment.
  - ix. To prepare for and provide materials as directed by the DEPARTMENT for and attend the Pre-Construction Conference, and provide meeting minutes to the DEPARTMENT no later than 7 days from the date of the meeting.
  - x. To schedule, coordinate, and provide an agenda for weekly progress meetings. Also, to provide meeting minutes to the DEPARTMENT no later than 7 days from the date of the meeting.
  - xi. The basic survey notes and sketches, charts, computations and other data and records prepared or obtained by the CONSULTANT pursuant to this agreement will be made available upon request to the DEPARTMENT without cost and without restriction or limitation as to their use.
  - xii. To submit to the DEPARTMENT a list of the personnel and the equipment he/she proposes to use in fulfilling the requirements of this agreement.
- b. ( X ) Coordinate, furnish or cause to be furnished:
- i. Proportioning and testing of concrete mixtures in accordance with the “Manual of Instructions for Concrete Proportioning and Testing” issued by the Bureau of Materials and Physical Research of the Illinois Department of Transportation and promptly submit reports on forms prepared by said Bureau.
  - ii. Proportioning and testing of bituminous mixtures in accordance with the “Manual of instructions for Bituminous Proportioning and Testing” issued by the Bureau of Materials and Physical Research of the Illinois Department of Transportation and promptly submit reports on forms prepared by said Bureau.
  - iii. All compaction tests as required by the specifications or as directed by the DEPARTMENT and report promptly the same on forms prepared by the Bureau of Materials and Physical Research of the Illinois Department of Transportation.
  - iv. Quality and sieve analysis on local aggregates that are not from approved producers (as listed by the Bureau of Materials and Physical Research of the Illinois Department of Transportation) to see that they comply with the specifications contained within the contract.
  - v. Inspect all materials when the Bureau of Materials and Physical Research of the Illinois Department of Transportation do not provide inspection at the source and submit inspection reports to the DEPARTMENT in accordance with the policies of the said DEPARTMENT.

**B. REQUIRED SERVICES AND PROCEDURES FOR CONSULTED CONSTRUCTION MANAGEMENT/OBSERVATION**

The following **Guidelines for Construction Procedures** has been prepared to be used as a guide for prospective consultants during preparation of their Construction Supervision Contract Proposals. This outline will familiarize the consultant with **Kane County Division of Transportation's** policies and procedures for construction supervision. This outline is a generalized list of policies and procedures mostly based on the **Illinois Department of Transportation Division of Highways "CONSTRUCTION MANUAL"** and also the specific requirements and needs of this agency.

**1. DUTIES AND AUTHORITY OF THE RESIDENT ENGINEER/TECHNICIAN**

The Resident Engineer/Technician provided by the consultant, who from this point on shall be referred to, as the **Resident** along with his/her staff is responsible for all construction details on the project. He/she shall report directly to the **Kane County Division of Transportation (K.D.O.T.)** Construction Section Chief or his Supervising Field Engineer (**CC**). The **Resident** is expected to accept delegated responsibility and to make decisions within the authority delegated to him/her. A **Resident's** first duty is to enforce the contract and specification requirements. He/she shall assign and schedule all field and material inspection and must maintain daily contact with the Contractor's personnel to proficiently provide the engineering services necessary for the Contractor's continued progress.

In addition the **Resident** is expected to make the day-to-day decisions to the extent that his/her experience and construction knowledge permit. However, the **Resident** is not authorized nor should he/she attempt to revise, delete, or change the contract provisions. When contract, plan, or specification changes are anticipated the **Resident** should contact the **K.D.O.T. (CC)** for guidance. The **Resident** also shall schedule, attend, and provide meeting minutes for all necessary meetings.

The **Resident** shall be the **K.D.O.T.** public relations person when dealing those the contract may involve and inconvenience. The **Resident** shall assure contract compliance with respect to:

- a. Contract Proposal
  - i. Special Provisions
  - ii. Highway Standards
- b. Plans
  - i. General Notes
  - ii. Typical Sections
  - iii. Plan and Profile Sheets
  - iv. Cross Section Sheets
  - v. Highway Standards
  - vi. All Special Detail Sheets

- c. “Supplemental Specifications and Recurring Special Provisions”
- d. “Standard Specifications for Road and Bridge Construction”
- e. Payroll
- f. Pay Estimates
- g. Erosion Control/Drainage
- h. E.E.O. Bulletin Boards
- i. Traffic Control
- j. Documentation
- k. Inspection
  - i. Material
  - ii. Field (Various Construction Operations)
- l. Various Other Items

## 2. **MEETINGS**

Prior to the start of construction, the **K.D.O.T.** shall arrange a pre-construction conference. All personnel involved with the project, including all necessary utility representatives, Contractor’s personnel, construction supervision personnel, local agency representatives, and **K.D.O.T.** staff shall be requested to attend. The **Resident** shall be required to attend, run, provide agenda and take meeting minutes to be submitted to the **K.D.O.T.** with copies sent to all other attendees no later than 7 days after the date of the pre-construction conference.

Bi-weekly coordination meetings shall be scheduled and coordinated by the **Resident**. These meetings shall be for the purpose of coordinating construction activities for the upcoming two weeks, and any other important issues that may arise. The **Resident** shall be required to attend, run and also provide meeting minutes to be submitted to the **K.D.O.T.** no later than 7 days after the date of the coordination meeting.

## 3. **DOCUMENTATION**

- a. **Project Diary:** The Project Diary is one of the most essential records kept on the job. The Resident or a designated representative shall be required to keep a daily diary on each contract.

The diary shall be a bound hardback book; there must be a separate diary on each Contract and a separate diary for each year. All entries throughout the diary shall be in ink.

The first entry in the diary shall be on the inside cover. This entry shall include the year, the official designation of the section (County, Section number, Route, District number, Job number, and Contract number), the name of the Contractor, and the name and signature of the Resident. A list of all personnel (inspectors) assigned to or working on the project also shall be printed on the inside cover, and each person shall put his/her initials after his/her name. The local agency's (**K.D.O.T.**) return address shall be noted on the inside cover so that it may be returned if ever lost.

An entry must be made in the project diary for each day of the project, including weekends and holidays, except when the project is officially suspended. Entries must begin by the official start date or when the Contractor begins work, whichever is first. The diary shall contain a day-to-day record of all significant items relating to the project. The date and day of the week shall be shown on the top of the page. Also, the time(s) of arrival and departure of the Resident or staff shall be listed under the date. A description of the day activities, and the number and the type of workers for the general contractor and each of the subcontractors shall be recorded for each day. Other information that shall be documented in the project diary is:

- i. Weather.
  - ii. Progress schedule controlling item of work.
  - iii. Working days charged and reason for partial or non-working days.
  - iv. Traffic control inspections and changes.
  - v. Description and hours of material inspection (done by Material Consultants)
  - vi. Important discussions with Contractor(s).
  - vii. Official visitors and inspections.
  - viii. Opening and closing of detours.
  - ix. Work and materials rejected and reasons.
  - x. Time of discontinuing or resuming work and reasons.
  - xi. Account of any time spent by Contractor's workers or equipment on disputable items of work.
  - xii. The presence of railroad flaggers and whether the Contractor is to be reimbursed for their services.
  - xiii. Length and cause of any delay.
  - xiv. Dates on which payment began and end for Engineer's Field Office, or any other calendar-month item.
  - xv. Description of important faxes and telephone calls. Unusual conditions, if any, such as high water, bridge failures, accidents/injuries, etc.
- b. **Inspector's Daily Report (I.D.R.):** An Inspector's daily inspection field report shall be kept the Resident and or his/her staff for each contract. I.D.O.T. form BC-628 shall be used for the documentation of daily work. This form is available as a spreadsheet on Microsoft Excel and is available from the **K.D.O.T.** Completed I.D.R. forms shall be kept in chronological order in a 3-ring hard cover binder. The items shall be checked on the right side of the report when they are entered the Quantity Book. The information contained on this report shall identify:
- i. Date
  - ii. Name of Contractor/Sub-Contractor(s) that performs on pay items
  - iii. Weather
  - iv. Item #
  - v. Pay Item

- vi. Location of work
- vii. Quantity and Units
- viii. Evidence of Material Inspection.
- ix. Calculations and Sketches (if applicable)

Note: Calculations and sketches shall be used to justify quantities of all items having foot, Square foot, square yard, and cubic yard units. The calculations and sketches shall be based on accurate field measurements and shall be presented in a neat and concise manner on the bottom of the form, on the back page, and or on a separate additional sheet placed after I.D.R. form sheet. Someone other than the person who performed the original calculations shall check all calculations.

- c. **Quantity Book:** A Quantity Book shall be kept the Resident and or his/her staff for each contract. I.D.O.T. form OC-625 shall be used for the documentation of quantities for federally funded projects only. A similar **K.D.O.T.** Quantity Book Form shall be used for all other projects. The **K.D.O.T.** Quantity Book Form is available as a spreadsheet on Microsoft Excel and is available from the **K.D.O.T.** A separate Quantity Book sheet shall be provided for each contract pay item. A title page listing the official designation of the section, the name address, and telephone number of the Contractor, and the address of the local agency (**K.D.O.T.**) shall be provided. Also, a sheet index page listing item number, item, and page number shall be provided. The Quantity Book Sheets (in numerical order), title page, and sheet index page shall all be kept in a 3-ring binder. Quantities shall be placed in this form daily.
  - d. **Field Books:** Hard cover, bound field books shall be used by the Resident and or his/her staff to record all field measurements including but not limited to the following information:
    - i. Daily field measurements used to justify quantities shown in the I.D.R.
    - ii. Permanent survey records, layout checks, cross-sections
    - iii. P.C.C. paving summary
    - iv. Bituminous concrete paving summary
    - v. Pile driving records
    - vi. Depth checks (P.C.C. and bituminous paving, sub-base, topsoil, curb and gutter, etc.)
- All field books shall be identified with the following information and shall include:
- vii. Route(s) description, section number, year, and the field book number (Ex.: Field Book #1) shall be listed on the front cover with a black marker.
  - viii. Project designation and the local agency's (**K.D.O.T.**) address on the inside cover.
  - ix. An index page that contains enough detail to show a reviewer the contents and location of the contents within the field book.
- e. **Resident's Weekly Report:** A weekly report containing a record of the contractor's progress shall be kept by the Resident. I.D.O.T. form BC-239 shall be used for the Resident's Weekly Report. This report shall be filled out weekly, signed by the Resident, and a copy mailed to the Contractor's office as soon as possible (at no time

shall the Contractor receive the copy later than 7 days from the date of the report). Copies of the report shall marked c.c. for:

- i. Contractor
- ii. Project file (**K.D.O.T.**)
- iii. Resident's file

The Resident shall keep his/her copies in chronological order, and contained within a hard covered 3-ring binder.

#### 4. **CHANGE ORDERS**

Whenever it becomes apparent that extra work is necessary on a project, the Resident shall contact the **K.D.O.T.** The **K.D.O.T.** shall determine the appropriate course of action. Payment for extra work shall be classified as either an Agreed Unit Price or a Force Account. In the case when an Agreed Unit Price shall be used, The **Resident** shall submit a formal request letter to the Contractor. This letter shall list the requested item, unit, and estimated quantity for an Agreed Unit Price. Once the Contractor's Agreed Unit Price letter is received, the **K.D.O.T.** shall review it. If the Agreed Unit Price letter is found acceptable, an approval letter and notice proceed shall be sent to the Contractor. Once an Agreed Unit Price has been approved, the Resident shall prepare the appropriate Change Order form and submit it to the **K.D.O.T.**

In the case when a Force Account shall be used, the process shall be same as that of an Agreed Unit Price, except that the **Resident** shall submit a formal request letter to the Contractor requesting an estimated amount for time, equipment and material costs for the proposed Force Account work.

No extra work shall be permitted unless authorized by the **K.D.O.T.**

The Resident shall document this work daily by using I.D.O.T. form BC-635 and both the Contractor and the Resident will retain copies.

Materials used on Force Account work that will be incorporated in the job must meet with satisfactory inspection.

The amounts of Labor, Equipment and Materials claimed by the Contractor on his submitted itemized bill, which he prepares at the completion of the extra work, must agree with the daily amounts shown on the completed BC-635 forms.

Refer to Article 109.04 of the Standard Specifications.

The completed itemized bill shall be submitted to the **K.D.O.T.** for approval, and Change Order processing.

Once **K.D.O.T.** and/or **I.D.O.T.** (Bureau of Construction) have approved the Change Order, the Resident shall add the Agreed Unit Price(s) or Force Account(s) to the next pay estimate as a line item.

All Change Orders shall be either I.D.O.T. form BC-22 (for projects using Federal funds) or a **K.D.O.T.** Change Order form. The **K.D.O.T.** Change Order form is available as a spreadsheet on Microsoft Excel and can be obtained from the **K.D.O.T.**

## 5. PAY ESTIMATES

The Resident shall prepare an Engineer's Payment Estimate (pay estimate) for submittal and payment at least once a month for each contract. All documented partially and completed work that has all required material inspection should be shown for payment on the Engineer's Payment Estimate form. This form shall be used for all projects (except projects using Federal funds). The form is available as a spreadsheet on Microsoft Excel and is available from the **K.D.O.T.**

The pay estimate form for projects using Federal funds shall be received from I.D.O.T. (Bureau of Construction – FAUS Projects) once a month. The Resident shall write in the quantities, sign his/her name to the bottom of the form, and return it to I.D.O.T. (Bureau of Construction – FAUS Projects) for processing of payment. Also, the Resident shall send a copy to the **K.D.O.T.** for the job file, as well as retain a copy for Resident's file.

The Resident shall meet with the Contractor before the pay estimate is submitted to insure agreement of all quantities included in the pay estimate for the month. Any discrepancy or disagreement between the contractor and the consultant shall be immediately reported to the **K.D.O.T.**

The Resident shall then submit the pay estimate to the **K.D.O.T.** for review and processing of payment.

## 6. INSPECTION MATERIAL

An independent Materials Consultant shall perform all required material inspection for all projects. The Materials Consultant shall be under the direct employment of **Consultant** and shall be assigned by the **K.D.O.T.** The Resident shall coordinate direct, and schedule all material inspection with the Materials Consultant. The Material Consultant shall not be responsible for determining when, what, and where they should be performing material inspection. The Resident shall determine the type, frequency, and location as required by the I.D.O.T. Project Procedures Guide (Sampling Frequencies for Testing and Inspection) and/or the **K.D.O.T.**

All billings for material inspection services shall be checked and verified with the Project Diary by the Resident or his/her staff for correct dates, hours, and charges. Any disparities shall be reported to **K.D.O.T.** as soon as possible. Copies of all material inspection billings shall be kept in the Resident's file.

Materials inspection and documentation is the responsibility of the Materials Consultant. However, the Resident and his/her staff shall verify that the quality, quantity, and frequency of all material inspection reports meet the requirements of I.D.O.T. (Bureau of Materials). Copies of completed material inspection reports shall be retained in the Resident's file.

7. **PLAN QUANTITY ACCEPTANCE**

The acceptance of plan quantities as final quantities for a number of the pay items is acceptable providing that the agency (**K.D.O.T.**) and the Contractor agree in writing that the plan quantities are accurate and will be used as final quantities. The Resident shall receive a list of the items from the **K.D.O.T.** that the agency (**K.D.O.T.**) would like to agree upon.

The Resident and or his/her staff shall, from the plans, verify the accuracy of the quantity of each item on the list. The Resident shall then submit his/her findings, which shall include all calculations used to determine the accuracy of the quantity on the list to the **K.D.O.T.** The **K.D.O.T.** will review the Resident's calculations to determine which items to include on I.D.O.T. form BC-981. This form shall be presented to the Contractor at the Pre-Construction Conference and be reviewed, signed, and returned to the **K.D.O.T.** before any construction work has begun.

8. **CONSTRUCTION LAYOUT VERIFICATION**

All construction layout and staking shall normally be provided by the Contractor and paid for by the item "Construction Layout Stakes". The Resident and or his/her staff shall recover and identify all horizontal control points, benchmarks, and right-of-way corners (for newly acquired parcels) prior to construction. The Resident shall instruct Contractor to submit copies of all field book information regarding layout on a daily basis to be retained in the Resident's file. The Resident and or his/her staff shall use standard survey methods to randomly check all horizontal locations and elevations for every staking operation. The Resident and or his/her staff shall document all layout checks in a field book. In the event that an error is found, the Resident shall notify the Contractor immediately and insure that he/she corrects the error as soon as possible. If an unnecessary amount of layout errors persist, the Resident shall notify the **K.D.O.T.** as soon as possible.

9. **TRAFFIC CONTROL INSPECTION**

Inspection of all traffic control devices, signing, pavement marking, etc. shall be inspected by the Resident or his/her staff at least twice a day when the Contractor is working and once a day when is the Contractor not working. One of the traffic control inspections shall be done at the later part of the day, before the contractor leaves, to allow time for the contractor to correct any deficiencies before they leave at the end of the day. The Resident and or his/her staff shall verify that all traffic control is accordance with the Traffic Control plan, and all applicable standards. The Resident and or his/her staff shall notify the Contractor as soon as possible of any and all deficiencies including:

- a. Downed and/or damaged signs
- b. Downed and/or damaged barricades or sign panels
- c. Worn, missing or conflicting temporary pavement marking
- d. Malfunctioning or damaged temporary traffic signals and temporary roadway lighting

The Resident shall list the times of inspection, descriptions of any and all deficiencies, and description of conversation with Contractor in the Daily Diary.

#### 10. FINAL INSPECTIONS

- a. **Traffic Signal/Roadway Lighting Installation:** Once Traffic Signal/Roadway Lighting installation have been completed and energized, the Resident shall schedule a Pre-Turn On inspection with the Contractor and the **K.D.O.T.** The Contractor shall address any deficiencies that are discovered as soon as possible. Once all deficiencies have been addressed, the Resident shall schedule a Turn On inspection with the Contractor, Maintenance Contractor, I.D.O.T. representative, controller manufacturer's technician (Traffic Signals) and the **K.D.O.T.**
- b. **Overall Project Inspection (Final Walk-Through):** Upon notice from the Contractor of completion of the entire project, the Resident shall schedule a walk-through inspection with the Contractor, **K.D.O.T.**, and any local agency (Municipal, County, and State) representatives if there is any outside agency funding. The inspection shall consist of walking the length of all portions of roadway (both sides). The Resident shall include any and all deficiencies that are discovered in the Resident's Punch list. The Punch list shall be addressed to the Contractor and signed by the Resident. The Punch list shall be mailed to the Contractor, and a copy shall be sent to the **K.D.O.T.** Once all deficiencies have been addressed, the Resident shall conduct another inspection with the Contractor to insure that all the items on the punch list have been addressed.

#### 11. FINALING OUT OF PROJECTS

Upon receiving notice of project completion from the Contractor, the Resident shall schedule a meeting with the Contractor and the **K.D.O.T.** to finalize quantities for all items per contract. Once final quantities are agreeable with both the Contractor and **K.D.O.T.**, the Resident shall prepare an Engineer's Semi-Final Pay Estimate, which shall include all final quantities with 1% retainage. The Engineer's Semi-Final Pay Estimate shall then be submitted to the **K.D.O.T.** for review and processing of payment.

The **Resident** shall also prepare Engineer's Final Pay Estimate, which shall be the same as the Engineer's Semi-Final Pay Estimate with the exception that the retainage shall be reduced to 0%. This final pay estimate shall be presented on the Engineer's Final Pay Estimate form, which can be obtained from the **K.D.O.T.** The **Resident** shall also prepare and submit to the **K.D.O.T.** the following:

- a. Balance Authorization sheet(s)
- b. Explanations for changes in total dollar values that exceed \$2000.00 per item
- c. Any un-approved Change Orders

The Balance Authorization form is available as a spreadsheet on Microsoft Excel and can be obtained from the **K.D.O.T.**

Once the Engineer's Final Pay Estimate is submitted to I.D.O.T. for approval, the Bureau of Materials shall check all items for the required materials inspection and certification. The Resident shall receive a list of material deficiencies from the **K.D.O.T.** The

**Resident** then shall make a formal request to the Contractor and or the Materials Consultant for all needed material inspection and certification. Once the Resident receives all requested material inspection and certification, he/she shall submit it directly to I.D.O.T. (Bureau of Materials).

12. **RECORD DRAWINGS**

The Resident and or his/her staff shall provide a complete set of record drawings (as built plans) to **K.D.O.T.** for their records. The record drawings shall be marked as "RECORD DRAWINGS" dated and initialed by the individual(s) who prepared them. All sheets, regardless of whether they will be modified, shall be marked as revised in an appropriate box or space, The drawings shall consisting of a 24"x 36" size set of project plans that have all changes and additions tagged by clouds or similar easy to see markings in red ink. A CD of the scanned record drawings in PDF format shall also be submitted with the plan set.