



Chapter Thirteen

PROJECT IMPLEMENTATION

BUREAU OF LOCAL ROADS AND STREETS MANUAL

Chapter Thirteen
PROJECT IMPLEMENTATION - MFT and State Funds

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13-1 PRECONSTRUCTION CONSULTATION

Some form of preconstruction consultation is advisable for any project that is accomplished by contract. The consultation may be formal or informal, depending upon the complexity of the project.

When a day labor project involves furnishing and spreading materials, it is advisable to discuss project specifics with the material supplier prior to commencing work. The supplier and the local agency should agree upon scheduling of the work, method of handling traffic control, and method of payment for materials delivered. To avoid future conflicts, document these agreements in the project file.

13-1.01 Formal Preconstruction Consultation

Formal preconstruction conferences are typically held for complex contract projects. The purpose of the preconstruction conference is to arrive at acceptable solutions to potential conflicts by discussing the plans and specifications, any unusual conditions, the method and schedule of operations, mobilization of equipment, labor requirements, traffic control, and any applicable federal, State, or local requirements. As soon as practical after award, the local agency should arrange a conference with the contractor and district prior to commencing the work. On very large and complex projects, it may be desirable to hold additional separate conferences for individual operations (e.g., paving, roadside planting, electrical work). The following sections describe the procedures for conducting the preconstruction conference.

13-1.01(a) Preparation

Consider the following when preparing for the preconstruction conference:

5. Progress Schedule. The contractor should prepare a schedule that details the proposed work sequence to complete the contract work items within the allotted time (e.g., number of working days, completion date). The contractor will submit the schedule to the local agency, which will use it as a basis for checking construction progress. The contractor should include the production rates to complete each sequence of work in the progress schedule. Form BC-255 may be used for the progress schedule.

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6. Conference Attendance. Determine who should attend the conference. Typically, the following individuals are invited to attend the meeting:

- local agency representatives,
- district local roads personnel,
- resident engineer designated for the project,
- contractor,
- subcontractors and agents, as approved,
- utility/railroad representatives, where these facilities are affected, and
- other interested parties.

13-1.01(b) Discussion

Figure 13-1A illustrates a typical preconstruction conference agenda, which may be customized for individual projects. During the meeting, special emphasis should be placed on the following items:

1. Traffic Control. The Traffic Control Plan (TCP) should be a primary topic of discussion. The contractor will furnish the name of the individual in his direct employment who is to be responsible for the installation and maintenance of the traffic control for the project. Remind the contractor of the obligation to provide certified flaggers who have been instructed in the fundamentals of correct flagging procedures.
2. Commitments. Regardless of the fund type used, any commitments made during the planning, design, or right-of-way acquisition stages must be carried through to completion of the project. Review any commitment list, compiled prior to award of the contract, to determine if there are any commitments not included in the contract that must still be considered. Retain a copy of the commitment list to ensure satisfactory completion of all contract requirements.
3. Erosion Control Measures. At the meeting, if applicable, include a discussion of:
 - plan provision for temporary and permanent erosion and sediment control with pay items,
 - relationship of the temporary and permanent erosion and sediment control measures to the sequence of construction operation,
 - need for the contractor to supplement information in the Storm Water Pollution Prevention Plan (SWPPP) on the specific sequence of construction operations proposed for the project,
 - any project-specific concerns, problem areas, or commitments, and
 - arrangements for a field review for erosion and sediment control aspects.

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These discussions should be reflected in the meeting minutes.

Section 13-4.05 provides further guidance on the necessary measures required for erosion and sediment control.

4. Permits Required. Provide a list of the applicable permits that are required for the projects. The following applies:
 - U.S. Army Corps of Engineers (USACE) – Section 404 Permit,
 - Illinois Environmental Protection Agency (IEPA) – NPDES permit, and
 - other permits.
5. Material Suppliers and Inspection Requirements. The contractor should present a list of the material suppliers. Any special testing requirements including quality control/quality assurance requirements and procedures should be discussed. Borrow pit locations and their environmental review should be discussed.

13-1.01(c) Documentation

Include written minutes of the preconstruction conference in the permanent project file. Provide copies of the minutes to the district, the contractor, and to each individual or agency represented. The project personnel involved should also initial the minutes involving instructions to the contractor. Include these instructions in the project file.

13-1.02 Informal Preconstruction Consultation

When a formal preconstruction conference is not held, the representative for the local agency and the contractor should confer and agree upon the scheduling of the work, method of handling traffic, sources of materials, public access, and method of payment for work accomplished. Document any agreements in the project file for future reference.

1. Contact Names and Telephone Numbers
 - a. Local Agency
 - b. District
 - c. Design Engineer
 - d. Contractor
 - e. Subcontractors
 - f. Material suppliers
 - g. Utilities
 - h. Railroads
 - i. Emergency service agencies
 - j. Mass transit agencies
 - k. Schools, mail services
 - l. Others

2. Order of Work
 - Award, execution, and start dates
 - Working days, completion date, incentive/disincentive
 - Proposed Sequence of Operations
 - Progress schedule

3. Right-of-Way and/or Easements
 - a. Is the property clear
 - b. Are there any restrictions to use
 - c. Disposition of any right-of-way conflicts or prior commitments by the local agency on behalf of property owners

4. Utilities/Railroads/Mass Transit
 - a. Status of any utility/railroad conflicts affecting the project
 - b. List of affected services and representatives to be contacted
 - c. Location of underground services
 - d. Notification time required by organizations
 - e. Resolution schedule
 - f. Railroads
 - (1) Submittal procedures
 - (2) Restrictions
 - (3) Construction/protection requirements
 - (4) Rail flagger requirements
 - (5) Insurance requirements, if any
 - g. Notification of all emergency service agencies
 - h. Notification of mass transit agencies affected by the project

PRECONSTRUCTION CONFERENCE AGENDA**Figure 13-1A**

5. Agreements
 - a. Local agency
 - b. Haul road use and maintenance
 - c. Jurisdictional transfer
 - d. Railroad
6. EEO and Labor Compliance
 - a. See Construction Memorandum 24, "Equal Employment Opportunity Contract Provisions and District Responsibilities" for details. Schedule a separate meeting, if necessary.
- a. Sub-Contractors and Agents
 - a. List of proposed sub-contractors
 - b. Request for approval for each sub-contractor
 - c. Nature of work to be performed by each
 - d. Subcontractor's correspondence route via prime contractor
 - e. Prime contractor representative with authority on the job at all times (designated by letter)
 - f. Minority subcontract work — in-depth discussion including conditions of award, if any
7. Materials
 - a. List of approved material suppliers
 - b. Request any special requirements and/or testing
 - c. Designate contractor's representative to be contacted concerning failing field or plant tests.
 - d. Locations and approval listing of borrow pits and testing procedures
 - e. Provide contractor with QC/QA requirements and procedures
 - f. Material safety data sheets (MSDS) and their location

Note: Remind the contractor and sub-contractors to provide inspected materials and sufficient advance notification to arrange inspection of plants and mixtures.

PRECONSTRUCTION CONFERENCE AGENDA

Figure 13-1A
(Continued)

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9. Records and Reports

- a. Wage rate interviews, if required
- b. Falsework plans, if required
- c. Submission for approval for source of materials
- d. Procedures to be used for pay-item documentation
- e. Required forms to be submitted to contractor
- f. All reports to be handled through prime contractor's office
- g. Stormwater Pollution Prevention Plan (SWPPP)
- h. Shop drawing requirements, timing number required, submittal/review/approval process and conditions

10. Traffic Control and Safety

- a. *Illinois Manual on Uniform Traffic Control Devices* will control signing placement not detailed in the plans
- b. Review and discussion of Traffic Control Plan (TCP)
- c. Safety control on structures
- d. Flaggers requirements (i.e., certification, training, flagger apparel)
- e. Form BT-725
- f. Speed regulation of construction equipment
- g. Name of the contractor's person responsible for traffic control
- h. Safety and health requirements
- i. Request police to report all work zone crashes to the contracting authority
- j. Contractor's proposed method of addressing traffic control
- k. Local access through the work site
- l. Access for emergency vehicles through the work site
- m. Responsibility for signing and maintaining temporary run-arounds or detours
- n. Contractor is responsible for complying with Construction Memorandum 63, "Construction Safety"
- o. Pedestrian access through the work site

11. Erosion Control

- a. Plan (temporary and permanent controls)
- b. On-site meeting
- c. Stormwater Pollution Prevention Plan (SWPPP)
- d. National Pollution Discharge Elimination System for Stormwater Discharge

PRECONSTRUCTION CONFERENCE AGENDA

**Figure 13-1A
(Continued)**

12. Commitments

- a. Review Commitment file
- b. *IDOT Standard Specifications* and Special Provisions
- c. Contractor responsibility to obtain permits
 - (1) 404 Permit and/or stream crossings
 - (2) Open Burning of Organic Waste permit
 - (3) the resident engineer/resident technician will inspect the burn facility to ensure compliance with the Statewide permit and will document the inspection in the contract diary
 - (4) The resident engineer/resident technician will notify the Supervising Field Engineer of non-compliance
 - (5) Non-compliant facilities will cease operations until corrections are made
- d. Environmental issues and concerns
- e. Reports of citizen complaints will be forwarded to IEPA within one working day

13. Dismiss Disinterested Parties (List those leaving)

14. Reopen with Specific Construction ITEM Discussion

- a. Have the contractor explain the sequence of work
- b. Review of anticipated construction problems

PRECONSTRUCTION CONFERENCE AGENDA

Figure 13-1A
(Continued)

13-2 CONSTRUCTION PROCEDURES

13-2.01 Project Supervision

Every local agency, when using MFT or State funds for a project, has an obligation to ensure that the project is completed according to the approved plans and specifications. The local agency should provide a resident engineer/technician that is responsible for the administration of the contract. The local agency is responsible for providing survey control points to guide the contractor in its operations. It is also the agency's duty to perform any required compaction tests, thickness measurements, area or volume measurements, and other tests to determine compliance with the plans and specifications. If the local agency does not have qualified personnel on its staff to accomplish the project supervision, it should employ a consulting engineer to provide the necessary supervision. The agency, in consultation with IDOT, should determine the level of supervision required and arrange to provide the necessary personnel.

IDOT, through the Central BLRS, provides an annual program of training classes for local agencies and consultant personnel. The program provides training in a variety of skills that relate to project supervision and inspection. Information on these classes is available on IDOT's website.

13-2.02 Project Documentation

Every project undertaken by a local agency has the potential to become the subject of controversy and, possibly, litigation, regardless of the source of funding for the project. The manner in which project records are maintained may have a significant impact upon the outcome of these confrontations.

IDOT does not prescribe a specific method of project documentation for MFT or State funded local projects. However, the documentation required must be kept in the project file and be available to IDOT upon request. IDOT's *Construction Manual* can be used as a guide. This *Manual* provides a method of documentation for projects where IDOT is the awarding authority. The level of documentation is primarily determined by the complexity of the work. A routine seal coat operation would most likely require only traffic control documentation and collection of weight tickets. For a major new construction or reconstruction project, IDOT's method, or a similar procedure, is recommended to provide an acceptable level of confidence. Material inspection documentation must follow IDOT's *Project Procedures Guide*; see Section 13-3.

13-2.03 Contract Changes

13-2.03(a) **Changed Conditions, Alterations, or Cancellation of Contracts**

Subsequent to the award of a contract or a proposal to furnish materials, the local agency or contractor may become aware of circumstances that substantially affect the performance of the work. Any alterations of contracts or agreements to cancel contracts must be accomplished

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according to the provisions of the *IDOT Standard Specifications*. The inability to produce or purchase necessary materials meeting the contract specifications is not sufficient cause to cancel a contract by mutual agreement.

13-2.03(b) Changes in Specifications

After the contract or material proposal has been awarded, any major change (e.g., a change that will affect the performance, life expectancy, lower the design strength of a product) to the specifications or any change to the material specifications will require approval of IDOT. If it is deemed necessary that a change in specifications is required, the local agency may submit a request to the district providing one or more of the following conditions is met:

- the project cannot reasonably be constructed or maintained as specified,
- a substantially equal product can be obtained at a savings to the project, or
- a vastly superior product can be obtained at the original contract price.

Furnish any supporting data to substantiate the requested change. If approved, the district will advise the local agency to submit Change in Plans according to Section 13-2.03(c).

13-2.03(c) Change in Plans

1. In accordance with the Change Orders section of the Criminal Code of 1961, 720 ILCS 5/33E-9, it is the responsibility of the local agency official signing the change order to provide a written determination for all change orders or series of change orders that authorize a net increase or decrease in the cost of a local agency contract by a total of \$10,000 or more, or an increase or decrease in the time of completion by 30 days or more. Written determinations of the change order must contain one of the following depending upon the circumstances of the change:

- The undersigned has determined that the circumstances that necessitate this change were not reasonably foreseeable at the time the contract was signed.
- The undersigned has determined that the circumstances that necessitate are germane to the original contract.
- The undersigned has determined that this change is in the best interest of the local agency and is authorized by law.

IDOT will not approve contract changes unless the written determination required by the Criminal Code is in place. It is important to note that compliance with the prior written determination mandated by the Criminal Code is separate from the Change in Plans approved by IDOT. The approval outlined in the Criminal Code must be done regardless of approval of Change in Plans by IDOT.

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2. For any contract project or day labor construction project, IDOT requires the submission of a Change in Plans form BLR 13210 to document any plan changes.

a. Types of Changes. Changes in plans may be classified as major or minor:

- Major Change. A major change applies to extra work or a quantity change that:

- modifies the approved design geometrics or changes the typical section above the subgrade,
- alters the intent or scope of the contract or character of work (e.g., extending or shortening contract length, adding work that is not required to complete the contract as awarded),
- alters specifications, special provisions, or other contract requirements, see Section 13-2.03(b), or
- results in added quantities, agreed unit prices, or an agreement to perform work by force account methods that exceed the contract award or approved estimate amount by 10% or \$20,000, whichever is less.

- Minor Change. A minor change applies to extra work or a quantity change that is:

- an authorization that adjusts small changes in plan quantities to final as-built quantities, except where the change in plans alters the contract to include work locations not in the original proposal or denies the competitive bidding process,
- work accomplished at unit prices, agreed unit prices, or on a force account basis that does not classify as major and does not exceed the contract award or approved estimate amount by 10% or \$20,000, whichever is less, or
- an adjustment in unit prices of the item specifically covered by the *IDOT Standard Specifications* or Special Provisions (e.g., timber piling length adjustment).

b. Submission Requirements. The following applies with respect to the submission of major and minor changes:

- Major Change in Plans. Transmit all major changes to the plans to the district for approval prior to performing the work. Include revised plans, if necessary, for the work. If changes in plans involve a variance from policy or criteria, the procedures for variances in Section 27-7 will apply. Variances must be approved prior to the approval of the change in plans.

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- Minor Change in Plans. The district can verbally approve minor changes in plans not involving quantities prior to performance of the work. Minor changes in quantities will be approved by the county engineer for county or road district work and by the municipal engineer for municipal work. Minor changes in quantities for municipalities without a municipal engineer will require district verbal approval.

Subsequently, submit the Change in Plans form (BLR 13210) and any customary bills, plans, and pertinent data to the district for formal approval of changes in quantities and changes in plans.

- Day Labor. On day labor construction projects, document these differences on form BLR 13210 using unit prices taken from the approved engineer's estimate. Calculate the increase or decrease of the quantities of work according to the *IDOT Standard Specifications*. Additions and deductions may be combined on the same form and submitted to the district when construction is complete. Design modifications and changes in length (either addition or deduction) and applicable quantities must be submitted on separate forms from other quantity changes.

Local agencies should incorporate written determinations as required in Section 13-2.03(c)(1) into, or attach to, the appropriate document making the change (e.g., form BLR 13210, amendments, resolution).

- c. Signature Requirement. The following applies with respect to signature requirements for approval of changes in plans:

- Municipal Change in Plans. A regularly appointed or elected municipal officer will sign changes in plans for municipal work. This officer may be the president of the board, mayor, clerk, or regularly appointed engineer whose office is established by ordinance and who is appointed to the office in an official manner. Changes in plans forms signed by others cannot be accepted.
- County Change in Plans. The county engineer will sign changes in plans for county work.
- Road District Change in Plans. The county engineer (superintendent of highways in Cook County) as well as the highway commissioner will sign changes in plans for road district work. In those cases where the highway commissioner has given the county engineer authority to approve all plans, only the county engineer will need to sign the change in plans. A copy of this written permission must be on file with IDOT.

13-2.03(d) Thickness Report for PCC or Bituminous Pavements

It is the intent that all PCC and bituminous pavements be constructed to the thickness shown on the plans. Pavement thickness will be determined according to the *IDOT Standard Specifications* (e.g., cores and/or edge measurements). The following applies to pavements:

1. Core Drills. In order to prevent any delays in checking the thickness of pavement and shoulder times, coring should be accomplished as soon as the item is complete and equipment can be safely placed in the area. Coring will only be conducted under this policy when other contract provisions for coring do not apply. Contracts requiring at least 1000 yd² (800 m²) of pavement will require coring to confirm adequate thickness.

The local agency will determine the location of the cores using a random system. The local agency should use the procedures discussed in the Construction Memorandum No. 42, "Contractor Coring of Square Measurement Pavement and Shoulder Pay Items," as a guide. The core locations will be laid out by the resident engineer/technician. The contractor will complete all work necessary to perform the coring operation. The local agency will have a representative present while the contractor is coring the pavement. All costs necessary in completing the coring operations are paid in accordance with the standard specification for extra work unless otherwise provided in the contract.

2. Penalties for Thin Pavement and Surface Irregularities. Penalties assessed against a contractor for thin pavement or surface irregularities according to the *IDOT Standard Specifications* will be computed and shown as a deduction from the contract cost. Document these penalties as a separate line item on form BLR 13210. Penalties may not be calculated as pay item quantities and deducted from the contract in that fashion.

13-2.03(e) Extra Work

All extra work must comply with the requirements of the *IDOT Standard Specifications*. It is not permissible to convert extra work not covered by pay items in the contract into contract pay items to facilitate payment of the cost of the extra work.

Frequently, it is possible to negotiate an agreed price, either lump sum or unit price, to perform work that is necessary but was not included in the awarded contract. Documentation for agreed prices should include a letter from the contractor agreeing to do the work at the stipulated price, and a statement from the local agency accepting the contractor's proposal. Attach copies of the agreed price letter and local agency acceptance to form BLR 13210. Other extra work will be done on a force account basis. Approval of IDOT is required in accordance with the change in plan approval procedure.

13-2.03(f) Extension of Contract Time

The *IDOT Standard Specifications* provides the methods to be used when it is necessary to grant an extension of time to a contractor. The contractor of the local agency may request a

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time extension. Submit all time extensions along with the supporting documentation to IDOT for approval.

13-2.03(g) Liquidated Damages

When a contractor fails to complete a project within the specified working days or by the specified completion date, or within the extended time as may have been allowed, liquidated damages will be assessed according to the *IDOT Standard Specifications*. The liquidated damages will be computed as a deduction from the contract and documented as a separate line on form BLR 13210.

13-2.04 Payments to Contractors

13-2.04(a) Pay Estimates

The local agency is responsible for preparing a pay estimate at least once a month and submitting to the district for the value of the work performed. Any retainage required by the project specifications is deducted from the pay estimate before payment is made to the contractor. IDOT does not require documentation of partial payment made by the local agency during the life of the project. However, it is always advisable to maintain some type of record in support of payments made to the contractor or material supplier. Use of the Engineer's Pay Estimate (Form BLR 13230) is recommended for partial payments.

13-2.04(b) Maximum Payment

Throughout the *IDOT Standard Specifications*, there are numerous references to pay items on which payment cannot be made for more than a specified percentage of the amount specified by the engineer. The purpose of the maximum pay percentages is to allow the contractor latitude in application rates as well as to discourage sloppy applications. These percentages generally apply to only those pay items that are paid for on the basis of volume or weight.

It is desirable to run daily yield checks on these items so that the contractor can be notified when production has exceeded the maximum specified quantity. The final payment is based on the plan quantity plus or minus any adjustment times the above maximum pay percentage.

13-2.04(c) Final Payment Estimate

The Engineer's Final Payment Estimate (Form BLR 13231) is required for all day labor construction and all contract projects. When preparing the final payment estimate, show the awarded quantities and costs for comparison with completed quantities and cost. Any increase or decrease in quantities must have been documented by an approved Request for Approval of Change in Plans (Form BLR 13210).

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When preparing the final payment estimate for a day labor construction project, the awarded cost information will be the same as that shown on the approved estimate. The completed cost information will be either the actual unit cost or the agreed unit cost plus the awarded unit price for the materials portion of each pay item. If the approved estimate shows the breakdown for each pay item into labor, equipment rentals, and material costs, show the same breakdown on the final payment estimate.

List additions to or deductions from the project that do not involve awarded pay items in the sections of the form set aside for "miscellaneous additions and extras" and for "miscellaneous debits", respectively. List all agreed price items, extra work items, and early completion incentives under the miscellaneous extras and additions section of the form. The miscellaneous debit section of the form should contain items such as thin pavement penalties, surface irregularity penalties, and liquidated damages. Also, show debits to the contract for uninspected materials or non-standard construction items that have been permitted to remain in place in this portion of the form.

Prior to submitting the final payment estimate to the district for approval, the local agency should ensure that their file contains the following documentation:

- release of Liens and Waivers of Claims from all subcontractors, material suppliers, and equipment suppliers for the project,
- certification by the contractor that all laborers and mechanics have been paid fair compensation,
- evidence that all pay quantities have been properly measured and final quantities agreed to by the contractor,
- evidence of materials inspection for all materials delivered to the project, and
- time and equipment rental records for a day labor project.

If federal funds are not involved, the local agency will retain a portion of the amount due to the contractor until an approved copy of the final payment estimate is returned (605 ILCS 5/5-409 and Check Sheet # LRS15 Partial Payments). For county or road district projects, the county engineer should sign the final payment estimate. For municipal projects, the signature should be that of a regularly appointed or elected municipal officer.

13-2.04(d) Contractor Claims

If a contractor claims that additional payment is due and the local agency has not agreed that payment is due, the contractor must file a written claim with the local agency. A final decision must be rendered by the local agency within 90 days of receipt of the claim. If a contractor seeks relief of this decision, the contractor must file a claim for adjudication at the Court of Claims within 60 days after the date of the written decision of the local agency.

13-2.05 Equipment**13-2.05(a) Inspection**

The local agency is responsible for ensuring that the equipment used on MFT and State funded projects meets all requirements of the *IDOT Standard Specifications* and Special Provisions of the contract. The equipment must be of sufficient size and mechanical condition to provide satisfactory quality of work without causing injury to the roadway, structures, adjacent property, or other highways when being moved or used. The use of unsatisfactory equipment is not permitted. The *IDOT Standard Specifications* or Special Provisions may prescribe specific equipment for a particular phase of work and define the requirements and performance of that equipment. If equipment is not prescribed, the contractor is free to use any equipment, provided it is satisfactory to the local agency and meets the project requirements. The District Bureau of Project Implementation may inspect batch plants, pavers, and mixers upon request prior to the start of construction.

Many pieces of equipment carry a rating plate or operating manual from the manufacturer indicating capacity, volume, or operating features. Operation of the equipment outside these limits will generally produce an inferior product. Make a careful review of the project documents and related operating manual requirements prior to using the equipment on a project. The *IDOT Construction Manual* provides inspection checklists for construction equipment.

13-2.05(b) Substitution

If the contract specifies the use of equipment of a particular size or type, the contractor may request, in writing, permission to use alternative equipment. In these cases, the contractor will be responsible for furnishing evidence, satisfactory to the local agency, that the proposed equipment is capable of producing equal work. If the substitution is agreeable to the local agency, the agency will forward a copy of the request and any supporting documentation to the district for approval. The approval may be withdrawn at any time if results are found to be unsatisfactory. No additional compensation will be allowed the contractor for any delays or additional costs incurred as a result of using alternative equipment.

13-3 INSPECTION AND TESTING OF MATERIALS

13-3.01 General

13-3.01(a) Local Agency Responsibilities

All materials incorporated into a project, financed in full or in part with MFT or State funds, must be inspected and tested for compliance with the requirements of the *IDOT Standard Specifications*, Supplemental Specifications, Recurring Special Provisions, contract special provisions, and the *Project Procedures Guide* (PPG). The local agency is responsible for this inspection and testing before any material is incorporated into the project.

The guidelines in PPG apply to the testing and inspection of materials for all local agency projects. Exceptions to these guidelines have been developed to accommodate local agency needs. A Qualified Local Agency Representative (QLAR) must submit certain certifications for exceptions discussed in the following Sections. QLAR is defined as a county engineer, a public works director, or a municipal engineer. The public works director or municipal engineer must be a licensed Professional Engineer in the State of Illinois and a public employee.

It is important that local agency personnel receive adequate training and have access to well-maintained and properly calibrated equipment to carry out their responsibilities. Based upon the QLAR's professional judgment, they may certify their employees as qualified personnel based on prior training and related work experience. The QLAR must also certify that adequate equipment is available for the specified test. A Certification of Local Agency Material Test Procedures (Form BLR 13310) must be submitted to the district for each employee certified. This form will need to be submitted one time and only resubmitted if any of the certified conditions have changed. The local agency lab should be treated as a district lab as defined in PPG for those tests specified on form BLR 13310.

13-3.01(b) Department Assistance

Under certain circumstances, the local agency may request IDOT to take responsibility for obtaining samples of materials, making field inspections, and conducting material tests. The districts may provide some or all of these services to the local agency provided personnel are available and the work can be performed without additional expense to IDOT. Otherwise, the local agency will be required to perform these tasks with its own engineering forces and/or private testing laboratories. In all cases, the sampling, inspections, and testing will be conducted according to the *IDOT Standard Specifications* and PPG. The local agency, through its contractor, will provide any facilities as required by IDOT for collecting and forwarding samples, and making inspection.

The contractor or local agency must not use or incorporate into the work the materials represented by the samples until tests have been made and the material found to be in accordance with the *IDOT Standard Specifications*. Failing samples will be handled in accordance with PPG.

13-3.01(c) Consultants and Private Laboratories

When the local agency employs consulting engineers and/or private testing laboratories to handle the material inspection and testing, there must be an understanding with the district as to what materials will be inspected and what tests will be performed by each. The consulting engineers and/or private testing laboratories will furnish the local agencies with copies of the material inspection reports. It is the responsibility of the local agency to administrate the materials acceptance process for the contract. Trained technicians and qualified laboratories are required by PPG.

13-3.01(d) Contractors and Material Suppliers

Although the local agency has the primary responsibility for materials inspection, the contractor and material supplier also have certain obligations. It is the duty of the contractor to inform all of its suppliers of the inspection requirements and to provide the project identification data to them. When suppliers are notified of the requirements for materials inspection, they have an obligation to ensure that all materials shipped to the project are taken from stock that has been approved by the inspectors and to provide the contractor with satisfactory evidence that the materials have been approved.

13-3.01(e) Mixture Designs

IDOT may assist a local agency with mixture designs and verifications for:

- portland cement concrete (PCC) mixtures,
- hot-mix asphalt (HMA) mixtures,
- concrete aggregate mixtures and pozzolanic aggregate mixtures,
- modified soil stabilized base and subbase, and
- soil cement mixtures.

All PCC and HMA mixtures must be furnished from plants that have been approved for use by IDOT. Contact the District Materials Section for PCC and HMA plant approval.

13-3.01(f) Sampling

Acceptance sampling will be the joint responsibility of the local agency and IDOT as noted in PPG. It is the responsibility of the local agency to arrange for plant testing when the mixtures discussed in Section 13-3.01(e) are used on the project. Depending upon availability of personnel, the District Bureau of Project Implementation may be able to provide plant testing for local agency projects. If IDOT personnel are not available, the local agency must provide for plant testing either with its own personnel or through a contract with a consulting engineer.

Applicable procedures to be used and the frequency of sampling for the various mixtures are contained in the following IDOT publications:

- *Manual of Test Procedures for Materials*, and
- *Project Procedures Guide (PPG)*.

13-3.02 Aggregate Gradation Control System

The Aggregate Gradation Control System (AGCS) is a program whereby any aggregate supplied to projects let under the jurisdiction of IDOT must be shipped from a certified source. The certified source maintains its own Gradation Control Program. Aggregate shipped must be certified that it meets the quality and gradation requirements in the *IDOT Standard Specifications*. Only certified sources shall ship material to local projects under the review of IDOT. No other inspection or testing is required by the local agency. The Bureau of Materials and Physical Research (BMPR) maintains an Approved Aggregate Source List.

13-3.03 Asphalt Acceptance Procedures

The procedures documented in this section apply to all local agency projects, regardless of fund type, for all grades of:

- cutback asphalts (i.e., rapid curing, medium curing, slow curing),
- road oil,
- asphalt binder, and
- emulsified asphalt.

The materials will be accepted according to the Bureau of Materials and Physical Research Policy Memoranda:

- "Performance Graded Asphalt Binder Acceptance Procedure,"
- "Emulsified Asphalt Acceptance Procedure," and
- "Cut Back Asphalt and Road Oil Acceptance Procedure."

The following procedures also apply:

1. Ordering. When ordering asphalt materials, the local agency or contractor will state that certified asphalt is required by IDOT, supplying the MFT section numbers and the name of the county or municipality.

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2. Bill of Lading. The carrier or contractor must submit a copy of the bill of lading to the county, road district, or municipal representative upon delivery. The producer's bill of lading must contain the following information:

- tank number(s) from which material was drawn,
- sequence number, identifying the tank test report,
- location where used (e.g., section, county, contract number),
- consignee and destination,
- bill of lading number,
- date of shipment,
- type of material,
- name and location of source,
- specific gravity at 60°F (15.6°C) for asphalt binder, cutback asphalts, and road oils or weight per gallon (liter) at 60°F (15.6°C) for emulsified asphalts,
- gross, tare, and net weights, and
- type of material last transported.

In addition to the above, bills of lading representing blended loads shall show the gallons (liters) or percentage of each component material.

3. Inspection upon Delivery. The local agency resident engineer will be responsible for checking and accepting the material on the project site. Material will be identified by the bill of lading accompanying the shipments. The resident engineer will check the bill of lading of each shipment to determine its type and source. This information will then be compared with data on the current list of certified sources to determine the certification status of the material. One of the following three judgments must be made regarding the acceptability of the material:

- when the bill of lading shows a source location and qualified product that are on the list of certified sources, the material will be accepted for use,
- when the bill of lading shows a source location or product that is not on the list of certified sources, but the bill of lading does contain the MISTIC test identification approval number, the material will be accepted and used, or
- when the bill of lading shows a source location or product that is not on the list of certified sources, and the bill of lading does not contain the MISTIC test identification approval number, the material will not be accepted for use.

4. Quantities. The local agency resident engineer will verify and document the quantities of accepted materials. For each project, the resident engineer will report the total quantities of accepted material used, by source and type, to the district on form BLR 13311 at the same time form BLR 13231 is submitted. The district will enter the

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quantities of certified materials into the MISTIC reporting system. Maintain copies of the bills of lading in the project file. Do not include the bill of lading with form BLR 13311 when it is sent to the district. The district will not approve final pay estimates without the completion of form BLR 13311.

5. Payment. All certified materials may be paid for after the local agency resident engineer has accepted the material and the material has been used.
6. Certified Source List. The Bureau of Materials and Physical Research will supply the certified source list to IDOT's central bureaus and district offices. A list of certified sources is also available on IDOT's website. The district will immediately notify local agencies receiving material from a source that becomes decertified. The IDOT website will also contain information regarding decertified sources.

13-3.04 Hot Mix Asphalt (HMA)

13-3.04(a) **Quality Control/ Quality Assurance (QC/QA) Program**

The HMA QC/QA Program is a process by which the daily quality control of the production and placement of the asphalt mixture is the responsibility of the contractor/vendor, while the owner/user is responsible for periodic quality assurance testing and final acceptance of the product.

1. Procedures. IDOT and industry related agencies/firms have developed QC/QA specifications through a partnering and consensus decision making process. This partnering effort between IDOT and the industry continues through annual reviews of the QC/QA specifications. The benefits of a QC/QA program are as follows:
 - a more uniform product is provided,
 - responsibility for the quality of the product is shifted to the contractor,
 - quality assurance testing by the local agency is reduced compared to the testing required by method specifications, and
 - corrective action is required to be taken promptly during construction, thereby improving the overall quality of the product.

The HMA QC/QA Program should be used on all projects, regardless of size. The Program will use the current IDOT specifications for HMA QC/QA. If a local agency does not use the QC/QA program, it will be responsible for all testing and inspection as discussed in Section 13-3.04(b).

2. Terminology. The following terms and definitions describe some of the various items and personnel involved in the HMA QC/QA process:

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- a. QC/QA Specification. An IDOT *Standard Specification* or Special Provision that applies to the construction contract. The QC/QA specification, along with its referenced documents, governs the contractor's QC requirements. These documents also specify the QA responsibilities of the engineer and local agency.
 - b. QA Manager. The person or entity employed by the local agency responsible for the quality assurance and acceptance requirements described in the specification.
 - c. QC Manager. The individual employed by the contractor and who has the responsibility for compliance with the QC provisions of the contract. The QC Manager must have training as established in the contract.
 - d. Trained Technician. An individual that has successfully completed the prerequisites established by IDOT for QC and/or QA testing, mix design, or contract administration. Training requirements are detailed in the *PPG*.
 - e. Qualified Laboratories. A laboratory qualified to perform materials acceptance testing on project produced materials as specified in the *PPG*.
3. Quality Control (QC) Responsibilities. The quality control aspect of the QC/QA program is the responsibility of the contractor. The contractor is responsible for providing a qualified laboratory and trained technicians to administer the QC portion of the contract both at the plant and in the field.
 4. Quality Assurance (QA) Responsibilities. Administration of the QA portion of the program is the responsibility of the local agency QA Manager. The expertise to perform the QA Manager duties should be available through the local agency staff, a private source, or furnished by the district as available. Depending on the circumstances, an individual may serve as both QA Manager and resident engineer. These responsibilities include monitoring QC and QA test results and ensuring investigations and corrective actions are performed. Provide the name of the individual who will perform the duties of QA Manager at the project preconstruction conference.
 5. Training. All personnel assigned to provide QA services must possess the level of training specified below. IDOT will identify sources for obtaining the required technical training. Required levels of training are as follows:
 - a. QA Manager. If a local agency employee is designated as the QA Manager, this individual must have completed the QA Manager training course. The training course is optional for local agency licensed Professional Engineers. Professional Engineers are responsible for determining if they possess the knowledge and/or experience necessary to perform the QA Manager duties. All local agency Professional Engineers are strongly encouraged to complete the training course.
 - b. Consultants. Consultants acting on behalf of a local agency must have successfully completed the HMA Level II training course.

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- c. Mix Design/Mix Verification. Individuals must have successfully completed the HMA Level III training course or be certified by QLAR to perform mix design and mix verification. QLAR may only certify local agency employees.
- d. Assurance Testing for Gradation, Voids, & AC Content. Individuals must have successfully completed the HMA Level I training course or be certified by the QLAR to perform this quality assurance testing. QLAR may only certify local agency employees.
- e. Assurance Testing for Density. Individuals must have successfully completed the HMA Density Training or be certified by QLAR to perform assurance testing for density. QLAR may only certify local agency personnel.

Additional information on training can be found in the PPG.

6. Prior to Construction. Prior to construction, the QA Manager is responsible for the following:
 - a. Laboratories. Verify and document that all laboratories used for mix design, mix design verification, quality control testing, or quality assurance testing have been inspected and approved according to IDOT criteria. The District Materials Section can verify this information.
 - b. QC Personnel. Verify and document that the contractor's QC personnel have received the appropriate QC/QA training and are listed in the IDOT trained technician database. Ensure names, social security numbers, and levels of training are provided. The District Materials Section can verify this information.
 - c. Small Quantities and Pay Items. Review the contractor's plan for QC of small quantity production, when allowed by the QC/QA Specification.
 - d. Quality Control Plan. Confirm and document that an approved annual QC plan is on file with the district. Review and approve the QC plan addendum for the project.
 - e. Mix Design. The contractor shall be responsible for all mix designs. IDOT will verify all new mix designs, or contract for same. The QA Manager will document that a verified mix design is being used.
7. During Construction. During the construction phase, the following activities will occur:
 - a. Start of Production. The QA Manager/resident engineer will:
 - verify and document that initial target values and Job Mix Formula adjustments are according to the contract,
 - witness and document the contractor's placement of the test strip and nuclear density gauge/core correlation, if applicable,

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- witness and document the contractor's development of growth curves, and
 - observe and approve the contractor's proposed rolling pattern and density targets.
- b. QA Plant Testing. The local agency will perform tests on mix sampled at the plant (e.g., QA plant tests). The district may provide some or all of these services to the local agency provided personnel are available and the work can be performed without additional expense to IDOT. A consultant/independent lab may be used for the QA plant testing requirements, provided the duties are performed by a Level I HMA trained individual and the lab has been approved by IDOT. This individual will:
- conduct independent assurance tests on split samples taken by the contractor for quality control tests at the frequency specified in the specifications for aggregate gradation and volumetric properties,
 - witness the contractor's sampling and splitting of samples, and
 - witness scale checks at least once a week. Note that only diary documentation is required if IDOT is regularly conducting scale checks for the plant.
- c. QA Field Tests. The local agency or its designated representative is responsible for the quality assurance density testing as required by the *Standard Specifications*. The following methods may be used provided the person has successfully passed the required density training:
- Local agency inspectors may perform density testing.
 - A consultant may be retained to perform density testing for the local agency.
 - Where density is to be established by coring, the associated laboratory testing is the responsibility of the local agency. QA cores will generally be split samples cored by the contractor and witnessed by the local agency or their agent.
- d. Investigations. The QA Manager will:
- be available for consultation when the QC plan or specification requires an investigation by the contractor,
 - investigate when the contractor's required test results deviate from the specified control limits, and
 - as appropriate, perform additional split sample tests and review the contractor's technician performance and testing procedures.

- e. Documentation. The resident engineer/QA Manager will:
- provide written test results to the contractor for all required plant and density QA tests,
 - maintain a diary detailing all corrective action taken by the contractor,
 - include all activities and observations relating to production and tests in the diary, and
 - maintain records to validate the specified acceptance criteria, including validation of the contractor's QC by the assurance process, the contractor's process control and actions, and assurance testing for voids and density.

13-3.04(b) Method Specification Work

Under method specification work, the local agency is responsible for the daily quality control of the production and placement of HMA as well as periodic quality assurance testing and final acceptance of the product. The District Bureau of Project Implementation may provide some or all of these services to the local agency provided personnel are available and the work can be performed without additional expense to IDOT. Otherwise, the local agency will be required to perform these tasks with its own engineering forces and/or private testing laboratories. In all cases, sampling, inspection, and testing, both at the plant and in the field, will be conducted according to the sampling and testing frequencies found in PPG.

13-3.05 Portland Cement Concrete (PCC) Quality Control/Quality Acceptance Procedures**13-3.05(a) QC/QA Program**

This Section is reserved.

13-3.05(b) Method Specification Work

Under method specification work, the local agency is responsible for the daily quality control of the production and placement of PCC as well as periodic quality assurance testing and final acceptance of the product. The District Bureau of Project Implementation may provide some or all of these services to the local agency, provided personnel are available and the work can be performed without additional expense to IDOT. Otherwise, the local agency will be required to perform these tasks with its own engineering forces and/or private testing laboratories. In all cases, sampling, inspection, and testing, both at the plant and in the field, will be conducted according to the sampling and testing frequencies found in PPG.

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13-3.06 Miscellaneous Materials

All materials delivered to the jobsite for incorporation into the project must be in compliance with the *IDOT Standard Specifications* or contract Special Provisions. Method of acceptance refers to the means of determining whether the materials supplied are in compliance with the *Standard Specifications*. There are various methods of acceptance for supplied material; manufacturer's certification, approved materials lists, quality control/quality assurance, certified source, testing program, and visual acceptance. PPG contains detailed information on the various methods of acceptance.

Under the testing program method of acceptance, materials are sampled at the source or jobsite by IDOT personnel or their representatives and tested at the jobsite or in laboratories to verify specification compliance. Additional information on the testing program method of acceptance is given below:

1. Inspection at the Source. IDOT has inspectors who regularly visit most of the material suppliers within the State that furnish materials for IDOT projects. Additionally, IDOT has agreements with other States and contracts with commercial testing laboratories to accomplish source inspection at out-of-State suppliers and fabricators who are frequent suppliers for Illinois projects. IDOT will issue inspection reports for local projects providing the contractor has requested materials and furnished the supplier with proper project identification.

If a material supplier does not regularly produce materials for State projects, IDOT will assist the local agency in deciding upon the methods to be used in sampling the materials and whether or not the tests can be performed at IDOT laboratories. If IDOT is unable to perform the testing, it will be the responsibility of the local agency to arrange for sampling and testing.

2. Fabrication Inspection. Certain items (e.g., structural steel, reinforcing steel, precast and prestressed concrete beams) require some measure of fabrication prior to delivery to a job site. If the item requires shop drawings, it is the contractor's obligation to provide the fabricator's shop drawings to the local agency for review and approval. A copy of the approved shop drawings must be furnished to the district. It is the fabricator's responsibility to ensure that all raw materials used have been inspected. The inspector at the fabrication plant should document the raw materials inspection when the report on the fabricated product is issued.
3. Inspection at the Job Site. If arrangements cannot be made for source inspection or if materials are delivered that have not been inspected for some reason, the local agency should insist that the materials be stockpiled until samples have been taken and tests have been made. Under no circumstances should materials that have not been inspected be incorporated into the work. It is the contractor's and supplier's responsibility to furnish the necessary samples or assist in obtaining the samples. It is the local agency's responsibility to arrange to have the samples tested.

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IDOT requirements for the inspection and testing of materials do not preclude the use of non-participating items in a MFT or State funded project. However, clearly indicate the non-participating items on the plans, specifications, and estimate. These non-participating materials must meet the requirements of the *IDOT Standard Specifications* or contract Special Provisions in an MFT or TBP project paid with local funds.

13-4 MISCELLANEOUS CONSIDERATIONS**13-4.01 Shop Drawings****13-4.01(a) Structure Drawings**

The *IDOT Standard Specifications* require the contractor to submit shop drawings for approval for most structures and/or for shop fabrication inspections. These reviews can be conducted either by the local agency or by IDOT. The following will apply:

- a. Local Agency Review: The local agency may conduct the review or inspection if it has qualified, engineering personnel available or if it hires a qualified consultant to conduct the review and/or inspection. Local agencies are encouraged to conduct their own reviews for the following elements:
 - simple span, precast, prestressed box beam bridges, and any of the structure's appurtenances (e.g., elastomeric bearings, special-design expansion joints);
 - simple span, steel, wide flange beam, and precast prestressed box-beam structures developed from standard plans and any appurtenances;
 - continuous, multi-span precast, prestressed I-beam structures; and
 - continuous, multi-span steel structures, and simple span structures not listed above.

- b. IDOT Review. The local agency may request that IDOT perform the shop drawing review and/or fabrication inspection. IDOT's agreement to perform the work will depend on the availability and workload of the Bureau of Bridges and Structures (e.g., shop drawing review, steel fabrication inspection) and the Bureau of Materials and Physical Research (e.g., precast and/or prestressed concrete, inspection, elastomeric bearing fabrication inspection, approval of paint and high-stress bolts). To obtain IDOT's services, the local agency should provide a written request to the district as soon as the project information is available. The district will forward this request to the appropriate Bureau(s). This is especially important for steel fabrication inspection services. Figure 13-4A provides the distribution lists for various elements requiring an IDOT review or inspection. The request should also include the following information:
 - job information (e.g., structure number; route; section; county; IDOT contract number, if applicable, contract number),
 - point of contact for questions and the name of the individual to send reports to a job completion including name, contact number, and location for fabricator and prime contractor, and
 - the approximate start date and duration, if known.

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Prints sent to:	Structural Steel (Number of Prints)	Prestressed Beams (Number of Prints)	Elastomeric Bearings and Expansion Joints (Number of Prints)
Regional Engineer	1	1 ⁽¹⁾	1
Fabricator	1	n/a	2
Contractor	2	1	2
Local Agency	2	2	2
Bureau of Bridges and Structures	2 ⁽²⁾	n/a	n/a
Bureau of Materials and Physical Research	n/a	1	1
Inspection District	n/a	2 ⁽³⁾	n/a
Total Prints	8	7	7

Notes:

1. *Where erection is located.*
2. *Only if the Bureau of Bridges and Structures will provide shop fabrication inspection.*
3. *Contact the district for the latest inspection district.*

SHOP DRAWING REVIEW

Figure 13-4A

This request will authorize IDOT's reviewer and/or inspector to act as the local agency's representative.

- c. Inspector. The inspector will need an approved copy of the shop drawings and/or fabrication inspection. If the drawings or inspections were not conducted by IDOT, provide a second copy to the district. This will allow IDOT to assist the inspector with any technical or interpretative questions. IDOT also requires a copy of any Special Provisions or project-specific specifications applicable to fabrication that are different from the *IDOT Standard Specifications*.
- d. Items Requiring Review. Generally, shop drawings or a fabrication inspection will be required for all structural steel elements, prestressed concrete beams, elastomeric bearings, and expansion joints. However, not all structural items will require shop drawings and/or fabrication inspection. The contractor and resident engineer/technician should check with the district for the latest list of items not requiring a review or inspection. Special or non-standard items generally will require the contractor to prepare set of shop plans and/or have a fabrication inspection.

13-4.01(b) Precast Box Culverts

Shop drawings are required for all precast box culvert projects (including standard and non-standard box sections) as well as for manholes, junction chamber, extensions, and end sections. Shop drawing approval by IDOT is not required for standard precast concrete box culverts that comply with:

- the *IDOT Standard Specifications*,
- the *AASHTO Specifications*, and
- the specific producer's quality control/quality assurance (QC/QA) plan approved by IDOT.

In addition to the following guidance, the local agency should review the Bureau of Bridges and Structures' (BBS) latest approval policy for precast box culverts:

1. **General.** The following will apply:
 - a. **Design.** The designer should clearly indicate in the contract plans the design fill height, the span x rise, and the proper AASHTO designation (and whether Interstate loading is required) for every precast box culvert, including all extensions and end sections. The producer will be required to mark this information on the precast concrete box. To determine the design fill height, calculate the maximum and minimum fill heights between the extreme edges of the shoulders. For further design guidance, review BBS' design criteria for precast and cast-in-place concrete box culverts.
 - b. **Contract Documents.** It is recommended that the construction documents specify that the culverts be in accordance with the latest BMPR "QC/QA for Precast Concrete Products Policy." See the IDOT's website for the latest copy of this policy.
 - c. **Producers.** For precast concrete box culverts, the producer will be required to provide the producer's mark, AASHTO/ASTM designation, date of manufacture, and the span, rise, and design cover for the culvert.
2. **Standard Designs.** IDOT's "No Review or Approval Policy" only applies to standard precast culvert sizes. The producer should submit the shop drawings to the contractor, who will forward them to the local agency. In review of these drawings, the local agency may do one of the following:
 - a. The local agency may, at their discretion, accept the producer's shop drawings by following the procedures in the BBS' memorandum of March 1, 2002 pertaining to the review and approval of shop drawings for precast box culverts and by specifying that the culverts must meet the BMPR Policy Memorandum 02-02 "QC/QA for Precast Concrete Products Policy."

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- b. The local agency may review and approve the shop drawings by using an Illinois Licensed Structural Engineer or an Illinois Licensed Professional Engineer, either employed by the local agency or by a qualified consultant engineer.
- c. The local agency may require, by Special Provision, that an Illinois Licensed Structural Engineer or an Illinois Licensed Profession Engineer approve the shop drawings provided by the contractor/producer. The local agency may require the producer to provide a certifying statement. The following certification statement is recommended:

I certify that the details shown in the precast concrete box culvert shop drawings for this project comply with the current applicable AASHTO design specifications and contract requirements. The shop drawings will satisfy the reinforcement and dimensional requirements of the contract.

Signature: _____ License No.: _____ Date: _____

Printed Name: _____ Company: _____

- 3. Non-Standard Designs. Cast-in-place end sections and special sections detailed in the contract plans are understood to be structurally adequate and do not require additional shop drawings. Where the precast culvert is not an option, the plans should include the note "Precast culvert alternative is not allowed." Note this next to the culvert on the Plan and Elevation Sheet of the Roadway Plans and in the General Notes of the Structural Plans. For non-standard precast concrete box culverts following the procedures of the March 1, 2002 BBS memorandum, shop drawings may be submitted for review and approval to the BBS through the district. The following submittal of shop drawings will apply:

- a. Producer/Contractor. The precast producer should submit the shop drawings to the contractor. The contractor will submit the drawings to the local agency for review and approval. If found acceptable, the shop drawings should be submitted to the IDOT District Office for forwarding to BBS. Accompanying the shop drawings should be the appropriate design plan sheets that indicate the design fill height, span x rise, AASHTO designation, etc. The shop drawings should be no larger than 11 in x 17 in (280 mm x 430 mm). See Figure 13-4A (structural steel) for the number of sets that should be submitted.
- b. Local Agency. If the shop drawings are found to be acceptable, the local agency will submit the shop drawings to district. The local agency may accept the drawings based on the seal and structural certification of an Illinois Licensed Structural Engineer. This will expedite the approval process. A special provision specifying this requirement will need to be included in the project specifications. The following certification statement is recommended:

I certify that to the best of my knowledge, information, and belief, that this precast box culvert design is structurally adequate for the design fill height, span x rise,

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and AASHTO designation shown on the plans. The design is an economical one for the style of structure and complies with the requirements of the current AASHTO Standard Specifications for Highway Bridges.

13-4.02 Borrow, Use, and Waste Areas

13-4.02(a) Environmental Review

Proposed borrow areas, use areas (including temporary access roads and runarounds, plant sites, and staging and storage areas), and waste areas must be designated by the contractor and approved prior to their use. These sites will be reviewed for archaeological resources, threatened or endangered species, or their essential habitat, wetlands, prairies, and savannahs at no cost to the contractor. For additional guidance, see Section 10-1.

The following procedures apply to waste areas:

1. Form BDE-2289. Upon award, the local agency's contractor will submit form BDE-2289 to the local agency. A copy of form BDE-2289 can be obtained from the IDOT website for submittal to the district. Provide a location map showing the size and boundaries of the area and ground level photos, preferably from each direction, with form BDE-2289. If not used as the location map, also include a copy of the most recent plat book page showing the respective township.
2. Landowner Agreement. The local agency should obtain written permission from the property owner to conduct reconnaissance surveys of the areas. Submit the written permission to the district.
3. Evaluation. BDE will review the site information to identify cultural and/or biological or wetland conflicts. IDOT will advise the local agency of the expected time to complete the required surveys and will allow the contractor the opportunity to choose another site prior to survey initiation. The contractor is responsible for paying any additional testing, for mitigation, and for obtaining any permits.

13-4.02(b) Waste Disposal

Following approval of waste areas by IDOT, disposal of waste material must not create an unsightly or objectionable appearance or detract from the natural topographic features, nor be placed at an elevation higher than that of the adjacent roadway without permission from the engineer (415 ILCS 5/3-160).

See the *IDOT Standard Specifications* for additional information on the disposition of clean construction and demolition debris with respect to fill and waste areas.

13-4.03 Traffic Control in Work Zones

Traffic control in work zones will be provided according to the project Traffic Control Plan (TCP) and *ILMUTCD*. The *IDOT Highway Standards* contain typical highway standards for traffic control in work zones that are approved for use on local agency projects. Additional guidance can be found in Section 39-5.

13-4.03(a) Marked Detours

The signing of a detour route is not required for non-marked routes. However, it is advisable to use signing, especially for arterials and collectors, when there is an alternative route in the immediate vicinity of the project. The signing must be coordinated with other agencies having jurisdiction of the alternate route. Avoid the use of low-volume residential streets.

13-4.03(b) Existing Pavement Markings

Obliterate conflicting pavement markings through the work zone area to prevent confusion to vehicle operators. Painting or taping over existing markings is not acceptable.

13-4.03(c) Temporary Pavement Markings and No Passing Signs

Except for low-volume roads, provide temporary pavement markings and no passing signs on all high-type surfaces (e.g., hot-mix asphalt, concrete), in accordance with the following:

1. **Lane Markings**. At the end of each day's work, install appropriate temporary pavement markings between all lanes that are open to traffic. Temporary markings consist of stripes 4 ft (1.2 m) in length at a maximum spacing of 40 ft (12 m) along the centerline of two-lane highways, and the lane lines on multilane highways. Centerlines on two lane highways will be yellow and lane lines separating two or more lanes of traffic moving in the same direction will be white. Remove all temporary markings on the final wearing surface within 5 days after the permanent markings are installed unless otherwise noted in the plans, or requested by the engineer.
2. **Edge Markings on Multilane Highways**. Where edge lines on multilane highways are obliterated due to resurfacing and operational problems are anticipated or are occurring due to the roadway geometrics, traffic volumes, ambient lighting, or narrow bridges, place temporary diagonal lines on the shoulders beginning at the edge of the travel lanes or auxiliary lanes at intervals of 50 ft (15 m) on ramps or 200 ft (60 m) on main lines. The markings will be a minimum of 4 in (100 mm) wide and 2 ft (0.6 m) long and angled away from the direction of traffic at approximately 45°. The color of the diagonal lines will match the color of the pavement edge lines.
3. **Permanent Pavement Markings**. Replace temporary pavement markings with standard markings as soon as practical. Usually, it should not be necessary to leave temporary

markings in place for more than 2 weeks after completion of any intermediate or final surface. The time restrictions for installation of permanent pavement markings begin at the completion of each intermediate lift or final lift on the resurfacing project. If the markings are obliterated by cold-milling, the time restriction begins when the entire surface has been milled. These restrictions may be delayed by the local agency whenever the contractor cannot apply marking due to unanticipated inclement weather other than a winter shutdown on the project, strike activities, or other circumstances beyond the contractor's control. Install the permanent markings as soon as practical after construction activities are resumed. Prior to winter, standard edge lines, lane lines, centerlines, and no-passing zone markings must be installed, at a minimum, on any intermediate or final surface that will remain open to traffic during winter shutdown periods.

4. No Passing Signs. No passing zones on two and three lane roads may be identified by using either the pennant NO PASSING ZONE warning sign or the DO NOT PASS, PASS WITH CARE regulatory sign in place of pavement markings for periods of time up to 3 calendar days after an intermediate or final lift is completed. Signs may also be used in lieu of pavement markings on low-volume roads until it is practical to install the final full standard markings.

13-4.03(d) Traffic Control for Roads Closed to Through Traffic

Whenever a local authority determines that a bridge or highway construction site requires the closing of a road to through traffic, the contract documents must specify alternative procedures for flagging and controlling traffic, provided the procedures have been approved by IDOT (430 ILCS 105/2). The alternative procedures acceptable for use to reduce traffic control for roads closed to through traffic are based on the following ADT ranges through the construction zone, excluding construction vehicles:

- less than 100 ADT,
- 100 to 400 ADT, and
- over 400 ADT.

The designer is responsible for estimating the ADT through the construction zone and documenting this information in the Traffic Control Plan (TCP) on the plans. Special Provisions and/or special details relating to reduced traffic control other than flaggers must be developed and included in the TCP on a project-by-project basis. The estimated ADT may vary at different locations within the construction zone or during separate construction phases. In these cases, document locations and phases for the varying ADT criteria, so that the contractor could adjust traffic control accordingly. If no action is taken by the designer with respect to determining reduced levels of traffic control, the contractor will be required to provide the same level of traffic control within the section of road closed to through traffic as would be required for open highway conditions. The traffic control can be adjusted as follows:

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1. Flaggers. The *IDOT Standard Specifications* contain provisions for reducing the number of flaggers required where the road is closed to through traffic, but only if the expected ADT, shown on the plans or in the Special Provisions, is less than 400. The *IDOT Standard Specifications* allow the contractor to use only one flagger when the ADT is between 100 and 400 and does not require a flagger when the ADT is below 100, unless the contractor's operation encroaches on the open travel lane.
2. Traffic Control Devices. Signing within the section closed to through traffic may also be reduced from that shown on the applicable *Traffic Control Standards* when the designer has determined that reduced traffic control is appropriate. Where the estimated ADT will be less than 400, only one advance warning sign will usually be necessary. This sign should display a specific message (e.g., RIGHT LANE CLOSED AHEAD) versus a general message (e.g., MEN WORKING). Flashing lights may be omitted from the advance sign(s). Where the estimated ADT will be 400 or more, signing should be provided to full open highway requirements, except the advance signing may be reduced by omitting the first sign in the normal series (e.g., ROAD CONSTRUCTION AHEAD). Barricades, cones, and other traffic control devices should normally comply with full open highway requirements except when the operating speed of the traffic within the section closed to through traffic will be less than 45 mph (70 km/h). In these cases, the following taper rates will apply:
 - 40 mph (60 km/h) – 25:1,
 - 35 mph (55 km/h) – 20:1, or
 - 30 mph (50 km/h) – 15:1.

13-4.04 Temporary Sidewalks During Construction

The designer is responsible for assessing the need to include temporary sidewalks in the plans where existing sidewalks will be reconstructed as part of the project. The *IDOT Standard Specifications* allow the resident engineer to direct the contractor to provide an aggregate surface. In some cases, it may be advantageous to provide temporary sidewalk quantities in PS&E. Provisions for temporary sidewalks should be included under any of the following conditions:

- where a known generator (e.g., school, neighborhood, shopping center) or individuals with disabilities are known to exist (e.g., nursing home, hospitals),
- if the principal access for pedestrian traffic to a business is by an existing paved surface and that surface will be removed, or
- when the construction sequence will include the removal of existing sidewalks and the new sidewalks will not be constructed prior to a winter shutdown.

Temporary sidewalks will be a minimum of 3 ft (1 m) wide. Consider the use of wider sidewalks in areas where high pedestrian or individuals with disabilities are known to exist. If the

temporary sidewalk is to remain in place for more than 4 weeks, construct it with a minimum of either 2 in (50 mm) of Portland cement or bituminous concrete or a minimum 3 in (75 mm) compacted depth of aggregate (e.g., CA 10, CA 12, Type B) or other similar locally available aggregate as approved by the engineer. The pay item should be Temporary Sidewalk, measured in square feet (square meters) and should include removal after the permanent sidewalks are placed.

13-4.05 Erosion and Sediment Control

Temporary measures will be used to control erosion and sedimentation while a project is under construction, prior to establishment of permanent measures. Temporary measures for construction activities are presented in the *IDOT Standard Specifications*, which includes a continual system of seeding erodible/bare areas every seven days to minimize the amount of exposed surface area within contract limits. Permanent measures are part of the completed project and will be used to prevent erosion and sedimentation after completion of the construction project. The erosion and sediment control information in the plans should clearly specify what types of measures or, if known, what specific measures are to be implemented in relation to each component of construction operations that will expose areas of earth or stockpiles of material to possible erosion from storm events.

The resident engineer/technician is responsible for maintaining a project erosion and sediment control file at the construction site. The file will contain:

- the Stormwater Pollution and Prevention Plan (SWPPP) including signed Contractor's Certification Statement or an Erosion Control Plan, if SWPPP is not required,
- plan sheets showing existing and planned erosion and sediment control measures,
- a copy of each Erosion Control Inspection Report,
- a copy of the Notice of Intent (NOI), when applicable,
- a copy of each Incident of Non-Compliance (ION), when applicable, and
- a copy of the Notice of Termination (NOT), when applicable.

The local agency will submit NOI to IEPA advising of the intent to use the NPDES statewide general storm water permit. Submittal of NOI 30 days before commencing disturbances of land for project construction will authorize the discharge of storm water from the construction site under the terms and conditions of the permit. NOI must be posted at the job site.

For all projects involving erosion and sediment control measures, the resident engineer/technician is responsible for conducting a field review for erosion and sediment control with the prime contractor and any subcontractors that will be involved in implementation of the practices. Ensure the review is conducted before any earth work or clearing operations begin. The purpose of the field review is to finalize the proper timing and placement of erosion and sediment control measures. Additional field reviews will be required as work progresses. The resident engineer/technician is responsible for recording the date of each field review in the

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project diary. Document the subjects discussed in the field review, and the names and position titles of individuals in attendance, in a memorandum to the erosion control file. Have the contractor complete and sign the Contractor's Certification Statement indicating that the contractor understands the terms of the permit.

Consider the following principles in the general approach to erosion and sediment control:

- a. Construction Limits. Define construction limits to keep soil disturbance to a minimum, leaving as much existing vegetation in place as practical.
- b. Sensitive Areas. Protect sensitive areas prior to any earth moving activity. The permit requires that perimeter controls must be in place prior to earth disturbance activities.
- c. Erosion and Sediment Control Plan. Maintain an Erosion and Sediment Control Plan for each construction phase.
- d. Divert Water. Divert "clear" water flowing through the construction site away from disturbed areas.
- e. Contain Silt. Intercept and contain silt close to its source.
- f. Contain Sediment. Contain all project-related sediment at the project site.

Additionally, the following procedures should be used for field reviews at the project's work site:

- Inspect all disturbed areas, existing erosion control measures, vehicle access sites, and all other areas subject to erosion at least once every 7 days and within 24 hours of the end of each 0.5 in (13 mm) or greater rainfall or equivalent snowfall.
- Document the findings of these inspections using the Erosion Control Inspection Report. By copy of the form, the contractor will be directed to perform any repairs, maintenance, or implementation of additional measures determined necessary.
- Note the dates of corrective action taken by the contractor in response to the inspection report on the form.
- If a local agency at any time observes a failure of any of the erosion and sediment control measure, the resident engineer/technician will complete and submit to IEPA an Incident of Non-Compliance (ION) within 5 days of the time the violation was identified. The information on the form must describe the cause of non-compliance, actions taken to prevent any further non-compliance, environmental impact resulting from the non-compliance, and actions taken to reduce the environmental impact resulting from the non-compliance.
- The contractor must complete permanent erosion control measures as soon as practical after the completion of grading. Temporary measures must be installed and maintained until permanent measures are established. The intent is to provide quick coverage to exposed areas to prevent erosion problems before they occur.

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- When all permanent erosion control measures are in place with 70% establishment rate of vegetation, the local agency will complete and send the Notice of Termination (NOT) to IEPA.

The information required to satisfy the erosion control requirements is summarized in Figure 13-4B.

13-4.06 Mobilization

Mobilization is a payment made at the beginning of a project to compensate contractors and subcontractors for work done in preparation of the contract work. The Bureau of Construction requires that all state let contracts pay the prime contractor mobilization according to the Standard Specifications for Road and Bridge Construction. Furthermore, all prime contractors receiving a mobilization payment are required to pay their subcontractors mobilization. Mobilization payments are optional on local let projects.

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FORM	RESPONSIBILITY	WHEN	WHERE TO SEND
Storm Water Pollution Prevention Plan (SWPPP) or Erosion Control Plan (on ALL projects)	Designer/Resident ⁽¹⁾	During Design/ Construction	Submit with plans or Special Provisions. Keep in Project Erosion Control File.
Contractor Certification Statement ⁽²⁾	Contractor and all subcontractors involved in Erosion Control	At Preconstruction Meeting	Submit with plans or Special Provisions. Keep in Project Erosion Control File.
Notice of Intent (NOI) (WPC 623) ⁽³⁾	Resident ⁽⁴⁾	30 days before construction begins	Post at Job site. Send original by certified mail to IEPA. Include copy in Project Erosion Control File.
NPDES/Erosion Control Inspection Report (BC 2259) (REQUIRED on ALL projects)	Resident/Inspector	Weekly and after more than 0.5 in. (13 mm) rainfall	Keep in Project Erosion File. Provide copy to Contractor.
Incidence of Non-Compliance (WPC 624) ⁽³⁾	Resident ⁽⁴⁾	Within 5 days	Original by certified mail to IEPA. Project Erosion Control File.
Notice of Termination (NOT) (WPC 621) ⁽³⁾	Resident ⁽⁴⁾	Final Stabilization ⁽⁵⁾	Send original by certified mail to IEPA. Include copy in Project Erosion Control File.

Notes:

- (1) *This form must be signed by the local agency representative.*
- (2) *Resident portion of the Report should be completed before the actual construction starts.*
- (3) *Can be found in the IDOT Construction Manual.*
- (4) *Contractor should be given a copy of the NPDES Permit.*
- (5) *Final stabilization is defined at 70% viable vegetative growth.*

EROSION AND SEDIMENT CONTROL REQUIREMENTS

Figure 13-4B

13-5 FINAL ACCEPTANCE AND PROJECT CLOSEOUT

13-5.01 Construction

13-5.01(a) Certification of Materials

When an MFT or State funded construction project is completed, the district is required to certify that all materials incorporated into the contract work were in close conformity with the approved plans and specifications. Material certification requirements are discussed in PPG.

The following is a brief overview of the key steps involved in the materials acceptance process:

- a. Inspection of Materials. Physical testing or visual inspection of the materials for compliance with the specifications.
- b. Evidence of Materials Inspection. The minimum proof that Method of Acceptance sampling and testing has been performed.
- c. Documentation of Inspection. Documentation that the materials received on the job site were accompanied by adequate Evidence of Materials Inspection as described in step (b) above. Include this documentation as part of the project files.
- d. Input into MISTIC. Input of assigned material quantities into MISTIC by district.
- e. Project Materials Certification Review. The District Materials Section compares the quantities on the final payment estimate with the inspection reports on file with IDOT.
- f. Project Acceptance. Upon completion of the materials certification review, the district proceeds with all actions necessary to accept the project.

Material certification (Steps 4 through 6) is not required for MFT special maintenance projects.

Additional information is found in PPG.

13-5.01(b) Final Inspection

Upon completion of all project work, the local agency should contact IDOT to schedule a final inspection of the project. A final inspection is required for day labor construction and contract construction projects and is recommended for contract maintenance projects. Representatives of the local agency and the contractor will conduct an inspection. IDOT will do a final inspection after the Engineer's Final Pay Estimate is received.

The purpose of a final inspection is to ensure IDOT that the project was constructed essentially according to the approved plans and that all restoration and cleanup required has been satisfactorily completed. During the final inspection, the contractor will note any visible

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deficiencies or irregularities for correction. The final inspection is also an opportunity for all parties to discuss any problems that may have occurred and to mediate any outstanding disagreements between the contractor and the local agency.

Any outstanding deficiencies noted during the final inspection must be corrected prior to final acceptance. Once these deficiencies have been corrected, IDOT will formally notify the local agency that the project has been inspected and found to be acceptable.

13-5.01(c) Final Acceptance

IDOT will issue final acceptance, providing the following conditions have been met:

- a. Final Inspection. Representatives of the local agency, contractor, and the district will perform the final inspection of the project. Deficiencies found will be corrected to the satisfaction of the local agency and the district before final payment is made to the contractor.
- b. Pay Items and Quantities. The different items of work have been measured and requests for change in plans (Form BLR 13210), making final adjustments in quantities, and as-built plans, have been submitted and approved by IDOT; see Section 13-2.03(c).
- c. Affidavits and Releases. The contractor has furnished all the affidavits and releases showing that bills for major items of work have been paid; see Section 13-2.04(c).
- d. Material Certification. Inspection reports indicating all materials incorporated in the improvement were inspected and found to comply with the specifications and are on file with the local agency.
- e. Engineer's Final Payment Estimate. The district has approved the Engineer's Final Payment Estimate (Form BLR 13231).
- f. Final Report. Form BLR 13510 has been submitted to close out the MFT or State funded portion of the project.

13-5.01(d) Project Closeout

When an MFT or State funded project has been completed according to the approved plans and specifications, including any approved changes, the local agency will notify the district. Each MFT or State funded project or section must be closed out, and have a final accounting of all funds authorized for expenditure. This final accounting will call attention to either the need for additional authorization of funds, or the need for a credit of excess funds to the unobligated balance. After the necessary steps have been completed, the project can be closed out. The following steps are required to close out the project:

- final inspection and initial acceptance by the local agency and IDOT,

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- Final Payment Estimate (Form BLR 13231) submitted by the local agency and approved by IDOT,
- Final Report (Form BLR 13510) submitted by the local agency and approved by IDOT, and
- credits of any balances to MFT Unobligated Balance or TBP Balance.

If a construction project is abandoned prior to the construction phase, form BLR 13510 will be submitted to account for any MFT and/or State funds authorized to the project. For MFT and TBP projects, any unused funds will be credited to the MFT Unobligated Balance or TBP Balance.

13-5.02 Preliminary and Construction Engineering

Funds authorized and expended for preliminary and construction engineering by local agency forces or consulting engineers are to be accounted for on form BLR 13510 upon completion of the project. If the engineering has been performed by a consulting engineer, the local agency should ensure that all terms and conditions of the engineering agreement have been fulfilled and that all services to be performed under the agreement have been completed and a satisfactory final report has been submitted to the district before making final payment.

13-5.03 Right of Way

Funds authorized and expended for land acquisition and associated costs are to be accounted for on the Final Report (Form BLR 13510) upon completion of the project.

13-5.04 Utilities

When utility adjustments or relocations have been completed, the local agency should ensure that all of the work has been accomplished according to the approved agreement, plans, and estimate. All deficiencies should be corrected and the work accepted by the local agency prior to submitting the final bill to the district for approval. A detailed final bill is not required if payment is to be made on an agreed lump sum basis and is under \$25,000. Funds authorized and expended for utility work will be accounted for on the Final Report (Form BLR 13510) upon completion of the project.

13-5.05 Railroads

When the railroad work has been completed, the local agency should ensure that all of the work has been accomplished according to the approved agreement, plans, and estimate. All deficiencies should be corrected and the work accepted by the local agency prior to submitting

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the final bill to the district for approval. Funds authorized and expended for railroad work will be accounted for on the Final Report (Form BLR 13510). If the project consists of railroad work only, submit form BLR 13510 after the final payment to the railroad to close out the project.

When Grade Crossing Projection Funds are involved in the railroad work, the railroad will notify the Central BLRS upon completion of its work. The Central BLRS will then request the district to inspect the site. After receiving this notification, the district will schedule a final inspection of the crossing surface, approaches, signal, and circuitry work with representatives of the local agency.

When Grade Crossing Protection Funds are involved, the railroad will send its final bill to the Central BLRS. The Central BLRS will review the final bill, arrange for the necessary audit, and advise the local agency when to pay its share of the railroad work.

13-5.06 Special Assessment and Bond Issue Projects

A local agency may use special assessment proceedings or bond issues to assist in the financing of a construction project. However, this does not alter the procedures for MFT projects. Final inspection is still required along with all the other items discussed in Section 13-5.01. Any necessary change in plans along with the Engineer's Final Payment Estimate should be processed and approved by the district. The Final Report (Form BLR 13510) shall be submitted as soon as practical after the final payment estimate has been paid. This applies even though no MFT funds may have been authorized for expenditure and disbursed for the project up to that time.

The financial statement portion of form BLR 13510 will show all MFT expenditures as of the date of its preparation. If there are MFT payments for construction, engineering, right of way, etc., they will be shown as authorized just like a regular MFT improvement. Likewise, those funds authorized for obligation retirement (e.g., public benefit assessments, bond issue payments) will be shown as authorized for obligation retirement and expended as such.

On special assessment projects only, if MFT funds have not been authorized at the time of submittal of form BLR 13510, a copy of form BLR 15410 should accompany the final documentation. This will expedite the approval of the subsequent obligation retirement resolutions.

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13-6 CONTRACTOR'S PERFORMANCE REPORT

The local agency is responsible for keeping IDOT informed of any delay on the part of the contractor in starting the work, unsatisfactory work, or poor progress. This will permit IDOT to consider these issues when the contractor applies for a new work rating. Form BC-1777 is to be prepared annually at the end of each construction season for each project completed during the year. Send the completed form BC-1777 to the district by the first of each year with copies to the contractor. Although submittal of form BC-1777 is voluntary for the local agency, it is the agency's opportunity to formally apprise IDOT of the work performed. This form is available on IDOT's website.

