CONTRACT ADMINISTRATION MANUAL

May 2011

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To: Contract Administration Manual Users

From: Office of Construction & Innovative Contracting (OCIC)

Subject: May 2011 Update of the Contract Administration Manual

The Contract Administration Manual has undergone an update. The update can be found at our website http://www.dot.state.mn.us/const/main/cam.html

We suggest that for future use, you access the manual online, or keep an electronic version on your computer; then the CAM is easily searchable.

If you have any questions concerning this Manual, call Jennie Carlson in OCIC @ 651-366-4207 or Karen Peters in OCIC @ 651-366-4227.
E-Mail: Jennifer.carlson@state.mn.us or Karen.peters@state.mn.us

OFFICE FAX 651-366-4248

Thank You

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SUMMARY OF CONTENTS

Mn/DOT Forms required by section 5-591.420 are available on-line at http://www.dot.state.mn.us/const/tools/forms.html

Note: This entire Contract Administration Manual is also available on-line at http://www.dot.state.mn.us/const/main/cam.html

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ABBREVIATIONS

Specification 1101 "Abbreviations" should be reviewed for terms used in the Specifications and Plans. The following are only the abbreviations used in this manual:

ADEC	Assistant District Engineer of Construction
CMS	Contract Management System
DBE	Disadvantaged Business Enterprise
DSAE	District State Aid Engineer
EEO	Equal Employment Opportunity
FAP	Federal Acceptance Plan
FFO	Full Federal Oversight (formerly PS&E / FAP)
FHWA	Federal Highway Administration
FRD	Field Record Documentation
IRA	Item Record Account
ISTEA	Intermodal Surface Transportation Efficiency Act
MAP	Minnesota Acceptance Plan
MEW	Minor Extra Work
MMUTCD	Minnesota Manual Uniform Traffic Control Devices
MN/DOT	Minnesota Department of Transportation
MPCA	Minnesota Pollution Control Agency
MTP	Minnesota Transportation Plan
NHS	National Highway System
OCIC	Office of Construction and Innovative Contracting
PR/PE	Process Review / Product Evaluation
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SAFO	State Administered Federal Oversight (formerly MAP)
SLAFO	State/Local Administered Federal Oversight (formerly MTP)
SP	State Project

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REFERENCE MANUALS

5-591.020 CONTRACT ADMINISTRATION MANUAL

Mn/DOT has manuals and guides concerning virtually all phases of highway construction and design available for issue. These manuals and guides are intended for informational and standardization purposes. The following is a general list for use by Engineers and Inspectors:

1. Road Design
2. Technical
3. Surveying and Mapping
4. Drainage
5. Standard Plates
6. Bridge Construction
7. Bridge Design
8. Bridge Standard Plans
9. Bridge Details
10. Bridge Maintenance
11. Right of Way
12. Contract Administration
13. Grading and Base
14. Bituminous
15. Concrete
16. Maintenance
17. State Aid
18. Traffic Engineering
19. Standard Signs
20. Standard Plans
21. Bikeways Design
22. Structural Metals
23. Minnesota Manual on Uniform Traffic Control Devices (Field Manual)
24. Project Managers Handbooks (Four Volumes)
25. Construction Specifications
26. Commissioners Equipment Rental Schedule
27. Commissioners Equipment Rental Rate Blue Book

http://www.dot.state.mn.us/const/tools/constructionformsmanuals.html

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The Office of Construction and Innovative Contracting (OCIC) is involved in all phases of construction contracts. The Office is divided into sections that research and promote innovative construction and contracting methods, administer contract bids and approvals, manage construction activities, monitor and enforce labor compliance, investigate and resolve contractor claims, develop work zone safety practices, maintain the Mn/DOT Technical Certification program and revise construction specifications. The Office maintains liaison with districts, divisions, state and federal agencies, legislators, counties and municipalities, contractors, and citizens.

OCIC Mission Statement:
The Office of Construction and Innovative Contracting provides leadership, expertise, innovation, and education to Mn/DOT's construction community through guidance, governance, research, and training so that safety and quality are maintained and policies and procedures are consistently followed, and service and efficiency improved.

In general, a **Resident Office** ensures completion of construction contracts according to contract requirements, provides technical supervision for construction projects, coordinates the activities of public utilities, contractors, and other governmental agencies on construction projects, documents contract work progress for paying the contractors; informs property owners, news media, other governmental agencies, and the public of construction operations within the District; provides requested technical assistance to other governmental agencies on their construction projects and ensures all required traffic safety and control measures are taken in the construction areas.

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The purpose of this section is to provide guidelines for administering projects that have Federal-Aid funding. Section 1305 of the Transportation Equity Act for the 21st Century (TEA-21) amends Section 106 of Title 23 - United States Code (USC), Project Approval and Oversight, to provide revised provisions for oversight of Federal-aid highway projects. Section 1601 of the TEA-21 replaces existing Section 117 of Title 23, Certification Acceptance (CA) with the HIGH PRIORITY PROJECTS PROGRAM, thus eliminating CA.

Amended Title 23 USC, Section 106 provides considerable flexibility to individual States and Federal Highway Administration (FWHA) division offices in reaching agreement on "responsibilities" for design, plans, specifications, estimates, right-of-way certification statements (part of PS&E), contract awards, and construction inspections/final acceptance of Federal-aid highway projects. It is important to realize the "responsibilities" refers only to the project actions noted in the preceding sentence. These are the same project actions for which States could assume responsibility under Title 23 USC, Section 106 prior to TEA-21.

Similar to past implementation of Section Title 23 USC, Section 106, States cannot assume responsibility for other Federal actions required under laws outside of Title 23 Code of Federal Regulations (CFR) (as an example, MEPA). Further, general Title 23 CFR requirements that apply to all projects, such as metropolitan and statewide planning procurement of services or contracts, disadvantaged business enterprises, wage rates, etc., continue to apply to projects where the State has assumed the responsibilities noted. There is no specific discussion in amended 23 USC, Section 106 of responsibilities that can be assumed by the States. However, amended Section 106(c)(4), which is a general requirement not relating to specific projects, indicates that FHWA may not assume any greater responsibility than the FHWA permitted under Title 23 on September 30, 1997, except upon agreement between FHWA and the State.

Considering the language in revised Section 106(c)(4), that all States continue to have the opportunity to assume the responsibilities noted for the same types of Interstate projects as were allowed under Title 23 USC, Section 106 prior to TEA-21, these being: 1) all 3R projects and 2) new/reconstruction projects less than $1 million in cost. All federally funded Design-build, Best Value, and Major Bridge projects (as defined in the Minnesota Stewardship Agreement) will be handled as Full Oversight Projects. These projects are not limited to a specific road system and will include the Interstate, NHS and Non-NHS projects.

As of January 1, 2001 all new and active projects will be administered by the following:

All formerly PS&E and FAP projects:	Use FFO procedures
All formerly MAP projects:	Use SAFO procedures
All Formerly MTP projects:	Use SLAFO procedures

FULL FEDERAL OVERSIGHT PROJECTS (FFO):
(Formerly PS&E/FAP)

New or Reconstruction Projects on the Interstate system over $1 Million and all Design Build and Major Bridge Projects: For new Construction/Reconstruction projects (see Table 1 page FFP-9) with construction costs greater than $1 million, all project activities will be developed with full FHWA oversight and approval as shown in Table 1 (see end of section). Upon agreement by the FHWA Construction and Contract Administration (FHWA/CCA) Engineer and the Mn/DOT Project Liaison Engineer, large or complex rehabilitation projects will also be considered for full FHWA oversight. All Federal-aid Design Build projects will be full oversight.

Contract Awards: All FFO Projects will have the contract award approved and obligated by the FHWA prior to the Start of construction.

Processing Contract Changes (Supplemental Agreements): Contract Changes will be processed by either Major or Minor contract change processes. These processes are listed below. Time extensions will be addressed with all contract changes.

I. Major Contract Changes: Major Contract Changes are defined as changes to the plans and/or provisions and all major extra work that will significantly increase the cost of the project; alter termini, character, or scope of the work; or incorporate an experimental product or feature. All Major contract changes and major extra work must have approval by the FHWA in advance. More specifically, major contract changes and extra work include, but are not necessarily limited to, those changes that meet any of the following criteria:

1. "Significant cost" is defined as a Supplemental Agreement, Change Order, or overrun exceeding $100,000.

2. Revisions to the project termini including changes in the project limits.

3. Changes in "character" of the work including those that affect items such as environment, EEO provisions, right of way activities, and labor provisions.

4. Changes in "Scope" of the work including additions, deletions, or relocations of bridges and/or other major structures; revisions to the structural section above the sub-base; revisions to the geometric design of the mainline roadway, ramps, frontage roads or cross roads; and other features that are specifically defined in the project scope.

5. An experimental product or feature.

6. Termination of a Contract.

The Project Engineer will send a draft of the Supplemental Agreement ("Standard" or Part A & Part B) to the FHWA for approval. The FHWA will prepare Form 1365 and submit it to Mn/DOT Office of Construction and Innovative Contracting (Mn/DOT OCIC) for further processing.

II. Minor Contract Changes: Are all changes and extra work not defined as Major Contract Changes. Although these changes require written FHWA approval, approval will be performed at the time of Final Acceptance of the project. The work can be advanced prior to that approval. Mn/DOT OCIC will submit a copy of each Supplemental Agreement ("Standard" or Part A & Part B) to the FHWA. Each copy will be stamped "Federal Participation Anticipated" or "Federal Non-Participation" as appropriate.

III. Time Extensions: Time extensions will be addressed with all contract changes. Major Contract Time extensions require FHWA approval. The Project Engineer will notify the FHWA as soon as practical that a time extension is required for a project. The Project Engineer is responsible for writing the justification request and submitting it to the FHWA for approval. This approval will be performed at the time of approval of a Major Contract Change or at Final submittal.

IV. Contract Claims: A Contract Claim involving legal issue, or a settlement based on a legal opinion or is resolved through a Dispute Resolution Process will be handled in the same manner as a Major Contract Change. The Engineer must notify the Mn/DOT OCIC Claim Engineer and FHWA of a claim of this type.

Construction Inspections: The FHWA is responsible for coordinating, conducting and preparing construction inspections and reports.

The following are the types of construction inspections that may be conducted:

1. A Process Review/Product Evaluation (PR/PE) is a comprehensive review to evaluate procedures and controls. The purpose of a PR/PE is to provide oversight of construction and materials management activities, determine compliance with requirements on a statewide or district-wide basis and make recommendations to enhance the process/product being evaluated.

2. An Inspection In-depth is a thorough on-site review to evaluate a specific contract item, combination of items, or major phase of a project. Inspections in-depth may be accomplished on an individual project basis or on several projects with the findings summarized as a statewide or district-wide review.

3. A Project Inspection is an on-site review to evaluate activities, the quality and progress of the work, and if appropriate, to follow up on findings from previous inspections.

Final Inspections: The FHWA will perform final Inspection on all Full Federal Oversight projects.

Final Acceptance: The FHWA will be responsible for the Final Acceptance on all Full Federal Oversight projects.

Experimental Features: The Project Engineer must contact the Director of Mn/DOT Office of Research Services to coordinate inclusion of an experimental feature into a construction project. The use of an experimental feature that has not been included in the project plans is a Major Contract Change. Refer to "Experimental Features Procedures-For the Use of Experimental Features on Minnesota Highway Construction Projects" for implementation procedures. The FHWA Construction and Contract Administration Engineer will be responsible to approve the use of experimental features.

STATE ADMINISTERED FEDERAL OVERSIGHT (SAFO):
(Formerly MAP)

All other Interstate and National Highway System (NHS) projects: Mn/DOT will assume all responsibilities in accordance with Section 106 of Title 23 USC. (See Table 1 at the end of this section) This applies to all design activities, Plans and Specifications approvals, concurrence in awards, construction inspection, contract changes, final acceptance and maintenance activities. As such, Mn/DOT acts as the Federal agent for those actions listed above precluding the need for FHWA approval or concurrence, except those actions that require FHWA approval outside of Title 23 USC (i.e., National Environmental Policy Act (NEPA), Title VI of the Civil Rights Act, Fair Housing Act, and the Uniform Relocation Assistance and Land Acquisitions Policies Act).

Contract Awards: All SAFO projects will have the contract award approved by Mn/DOT OCIC Pre-Award Unit.

Processing Contract Changes: All contract changes and extra work as defined previously under FFO will be approved by Mn/DOT OCIC as outlined in Section 5-591.350: Contract Changes.

Major Contract Changes: Major Contract Changes are defined as changes to the plans and/or provisions and all major extra work that will alter the termini, character and scope of the work or incorporate an experimental product or feature. All Major contract changes and major extra work must have approval by the FHWA/CCA Engineer in advance. More specifically, major contract changes and extra work include, but are not necessarily limited to, those changes that meet any of the following criteria:

1. Revisions to the project termini including changes in the project limits.

2. Changes in "character" of the work including those that affect items such as environment, EEO provisions, right of way activities, and labor provisions.

3. Changes in "Scope" of the work including additions, deletions, or relocations of bridges and/or other major structures, revisions to the structural section above the sub-base, revisions to the geometric design of the mainline roadway, ramps, frontage roads or cross roads and other features that are specifically defined in the project scope.

4. Termination of a Contract.

Time Extensions: Time extensions will be addressed with all Contract Changes. The Project Engineer will notify Mn/DOT OCIC as soon as practical when a time extension is required for a project. Mn/DOT OCIC is responsible for approval of all time extensions. See Section 5-591.340: Contract Time Extensions for detail approval procedures.

Contract Claims: A Contract Claim will be treated in the same manner as a Contract Change except for any claim involving a legal issue or settlement based on a legal opinion or is resolved through a Dispute Resolution Process. The Project Engineer must notify the Mn/DOT OCIC Claims Engineer for assistance/approval. See Section 5-591-350: Claims for detail approval procedures. The Project Engineer will send a copy of the approved contract claim to FHWA/CCA Engineer for information purposes.

Construction Inspections: Mn/DOT OCIC is responsible for coordination of construction inspections. The State Construction Engineer may delegate the inspection responsibilities (coordinating, conducting, and preparing construction inspections and reports) to the appropriate Mn/DOT construction personnel

The following are the types of construction inspections that may be conducted. The same construction inspections described in the FFO section apply to SAFO projects.

Final Inspections: A final inspection is required for all SAFO projects. Final Inspection for SAFO projects is the responsibility of the Mn/DOT OCIC Construction Standards Engineer. The final inspection will be accomplished during an on-site review conducted at or near the completion of the work.

Final Acceptance: Final Acceptance for SAFO projects is the responsibility of both the Mn/DOT District Office and Mn/DOT Office of Financial Management/Financial Operations Project Accounting. Copies of all Supplemental Agreements, Change Orders and Authorization forms (i.e. FHWA-1365 Records of Authorization to Proceed with Major Contract Revision) are to be included with the Final Acceptance package along with a copy of the Final Inspection Report.

Experimental Features: The Project Engineer must contact the Director of Mn/DOT Office of Research Services to coordinate inclusion of an experimental feature into a construction project. The use of an experimental feature that has not been included in the project plans is a Contract Change. Refer to "Experimental Features Procedures-for the Use of Experimental Features on Minnesota Highway Construction Projects" for implementation procedures. The FHWA Construction and Contract Administration Engineer will be responsible to approve the use of experimental features.

STATE/LOCAL ADMINISTERED FEDERAL OVERSIGHT (SLAFO):
(Formerly MTP)

NON-NHS Projects: Mn/DOT will be the responsible agency for day-to-day oversight and administration of all Non-NHS Projects similar to a manner as FHWA is for the above section: **Full Federal Oversight Projects.** These projects will be listed on routes OFF the NHS system. The FHWA role will be that of stewardship of these projects. As such, FHWA will assist Mn/DOT in the use of Process Review/Product Evaluation (PR/PE), Inspections or other similar type of methods to ebsyre compliance with Federal law and regulations.

Under this program the State will be directly responsible for performing day-to- day oversight and compliance reviews with all federal laws and regulations under these projects. Projects that include any portion on the NHS will be reviewed prior to advertising the construction project or sooner with FHWA Construction and Contract Administration Engineer for the appropriate oversight procedures

Contract Awards: All State/Local Administered Federal Oversight Projects will have the contract award approved by Mn/DOT OCIC Pre-Award Unit. With only prior approval by both FHWA and Mn/DOT, a local agency may perform day-to- day inspection and management of a project constructed off the Interstate and on the NHS by Delegated Contract Process (DCP), MnDOT shall maintain the role of project oversight in these case.

Processing Contract Changes: All contract changes and extra work as defined previously under FFO will be approved by Mn/DOT OCIC as outlined in Section 5-591.350: Contact Changes and may request additional funding obligation authority from FHWA .

Major Contract Changes: Major Contract Changes are defined as changes to the plans and/or provisions and all major extra work that will alter the termini, character and scope of the work or incorporate an experimental product or feature. All Major contract

changes and major extra work must have approval by the FHWA/CCA Engineer in advance. More specifically, major contract changes and extra work include, but are not necessarily limited to, those changes that meet any of the following criteria:

1. Revisions to the project termini including changes in the project limits.

2. Changes in "character" of the work including those that affect items such as environment, EEO provisions, right of way activities, and labor provisions.

3. Changes in "Scope" of the work including additions, deletions, or relocations of bridges and/or other major structures; revisions to the structural section above the sub-base; revisions to the geometric design of the mainline roadway, ramps, frontage roads or cross roads and other features that are specifically defined in the project scope.

4. Termination of a Contract.

Time Extensions: Time extensions will be addressed with all Contract Changes. The Project Engineer will notify Mn/DOT OCIC as soon as practical that a time extension is required for a project. Mn/DOT OCIC is responsible for approval of all time extensions. See Section 5-591.340: Contract Time Extensions for detail approval procedures.

Contract Claims: A Contract Claim will be treated in the same manner as a Contract Change except for any claim involving a legal issue or settlement based on a legal opinion or is resolved through a Dispute Resolution Process. The Project Engineer must notify the Mn/DOT OCIC Claims Engineer for assistance/approval. See Section 5-591-350: Claims for detail approval procedures. The Project Engineer will send a copy of the approved contract claim to FHWA/CCA Engineer for information purposes.

Construction Inspections: Mn/DOT OCIC is responsible for coordination of construction inspections. The State Construction Engineer may delegate the inspection responsibilities (coordinating, conducting, and preparing construction inspections and reports) to the appropriate Mn/DOT construction personnel

The following are the types of construction inspections that may be conducted.
The same construction inspections described in the FFO section apply to SAFO projects.

Final Inspections: A final inspection is required for all SLAFO projects. Final Inspection for SLAFO projects is the responsibility of the Mn/DOT OCIC Construction Standards Engineer. The final inspection will be accomplished during an on-site review conducted at or near the completion of the work.

Final Acceptance: Final Acceptance for SLAFO projects is the responsibility of both the Mn/DOT District Office and Mn/DOT Office of Financial Management/Financial Operations Project Accounting. Copies of all Supplemental Agreements, Change Orders and Authorization forms (ie FHWA-1365 Records of Authorization to Proceed with Major Contract Revision) are to be included with the Final Acceptance package along with a copy of the Final Inspection Report.

Experimental Features: The Project Engineer must contact the Director of Mn/DOT Office of Research Services to coordinate inclusion of an experimental feature into a construction project. The use of an experimental feature that has not been included in the project plans is a Contract Change. Refer to “Experimental Features Procedures-for the Use of Experimental Features on Minnesota Highway Construction Projects” for implementation procedures.

SYSTEM	**Interstate**			**NHS (non-I)**	**Non-NHS**
Oversight	New or Reconstruction $1million or greater (or by agreement)**	New or Reconstruction Less than $1 million (or by agreement)**	State-Funded Projects	State Administered **	State Administered **
Governing Policy	Federal Highway Administration Policy	Federal Highway Administration Policy **with** Approval Actions Delegated to Mn/DOT	State Policy FHWA Design Stds.	Federal Highway Administration Policy **with** Approval Actions Delegated to Mn/DOT	State Policy
PROCEDURES	**FFO**	**SAFO**	**SF**	**SAFO**	**SLAFO**
ACTIONS					
Plans, Spec & Estimates Approval	FHWA	Mn/DOT	N/A	MN/DOT	Mn/DOT
RFP Approval - Design Build	FHWA	FHWA	N/A	FHWA	FHWA
Authorization	FHWA	Mn/DOT	N/A	Mn/DOT	Mn/DOT
Concurrence in Award	FHWA	Mn/DOT	N/A	Mn/DOT	Mn/DOT
Supplemental Agreement Approval	FHWA – Advance Approval for Major Changes – All others at Final Voucher (FHWA)	FHWA – Advance Concurrence for Major Changes -- All others at Final Voucher (Mn/DOT)	N/A	FHWA – Advance Concurrence for Major Changes – All others at Final Voucher (Mn/DOT)	Mn/DOT
Claims	FHWA				
Time Extensions	FHWA Advance Approval for Major Changes & Termination of Contract				

SYSTEM	INTERSTATE			NHS (non-I)	Non-NHS
PROCEDURES	FFO	SAFO	SF	SAFO	SLAFO
ACTIONS					
Claims/ Termination	Mn/DOT/ FHWA Concurrence	Mn/DOT/ FHWA Advance Concurrence	N/A	Mn/DOT/ FHWA Advance Concurrence	Mn/DOT
Materials Certification	FHWA Acceptance by Mn/DOT	Mn/DOT Approval and Acceptance	N/A	Mn/DOT Approval and Acceptance	Mn/DOT Acceptance from LPA
Materials Certification - Design Build	FHWA Acceptance by Mn/DOT	Mn/DOT Approval and Acceptance	N/A	FHWA/Mn/DOT Acceptance from DB team	FHWA/Mn/DOT Acceptance from DB team
Project Inspections	FHWA Project, Inspections In-depth & included in PR/PE sampling	Mn/DOT Projects maybe Included in a FHWA PR/PE sampling	N/A	Mn/DOT Projects maybe Included in a FHWA PR/PE sampling	State Policy And Procedures
** All Federal-Aid Design Build Projects will follow the Full Federal Oversight (FFO) Procedures.					

Mn/DOT has been utilizing partnering on selected projects since 1992. Partnering is recommended for large or complex projects that will require the careful coordination of construction activities to ensure the results desired.

Partnering is specified in the Special Provisions, if the Engineer and Contractor elect to participate, all partnering costs are shared equally between the Department and Contractor.

Partnering is a formalized process for building teamwork and cooperation between groups of people that will be working together to construct a project. The most visible aspect of partnering is the initial one or two day facilitated workshop, which sets the process in motion.

Parties involved with the partnering process include but are not limited to, Prime Contractor, Sub Contractors, major suppliers, utility companies, project designers, local government representatives and other parties that will be directly affected by the project.

For information about partnering, contact the Office of Construction and Innovative Contracting Claims Engineer at (651) 366-4219.

NOTE: Partnering activities must comply with the Departments ethics policies as explained in "Mn/DOT Policy Guideline No. 3.21.G-1, Code of Ethics Guidelines. This policy addresses, among other things, a positive public perception of Department activities.

Absolutely, no alcoholic beverages may be paid for by the Department.

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Authority of the Engineer
The term Engineer as defined in the Standard Specification 1103 is the duly authorized engineering representative of the Contracting Authority, acting directly or through the designated representatives who have been delegated responsibility for engineering supervision of the construction, each acting within the delegated scope of duties and authority.

Deciding Questions
In accordance with Standard Specification 1501.1, the Engineer will decide all questions regarding:

1. Quality and acceptability of materials furnished and work performed.
2. Manner of performance and rate of progress of the work.
3. Interpretation of the Plans, Specifications, and Special Provisions.
4. Measurement, control of quantities, and the amount of any deductions or adjustments to be made in payment.
5. Acceptable fulfillment of all Contract provisions on the part of the Contractor.

The Engineer's acceptance does not constitute a waiver of the Department's right to pursue any legal remedies for defective work or work performed by the Contractor in an unworkmanlike manner.

Authority to Suspend a Contract
In accordance with Standard Specification 1501.2, the Engineer may suspend the work, either wholly or in part, due to failure of the Contractor to:

1. Correct conditions unsafe for the workmen or the general public,
2. Carry out provisions of the Contract, or
3. Carry out orders,
4. Comply with the requirements of all permits for the project.

The Engineer may also suspend work for such periods as deemed necessary due to:

- unsuitable weather
- conditions unsuitable for prosecution of the work
- any other conditions or reasons deemed to be in the public interest

Suspension of the work is a serious step, which may result in delaying completion of the contract and in considerable cost to the contractor; and should only be resorted to when the contractor has failed to take remedial action within a reasonable time after being notified to do so. Suspension should only be ordered by the Head Inspector or Engineer/Supervisor on the project. The Inspector must notify the Engineer/Supervisor of this action as soon as possible giving all the information necessary to support it.

Suspension orders will be in writing except when work must be stopped at once and time does not permit issuance of a written order. A written order confirming the verbal order will be issued at the earliest possible time. The order must state the specific reason for the suspension referring to the specifications under which the action is taken; what actions, if any, the contractor must take before resuming work and the conditions under which the suspension will be revoked. A Change of Contract Construction Status form will be issued as soon as conditions are favorable for resuming work. See Contract Time section (5-591.340) for discussion on suspension and resumption of work.

Authorized Signatures

Some contracts, while assigned to an Engineer for supervision, may be further assigned to a "Project Supervisor." This title must be used in signing all documents required in administering the project. At the discretion of the Assistant District Engineer, the Office of Construction and Innovative Contracting will accept the Project Supervisor's signature on all contract documents to include the following that previously required an Engineer's signature or initials:

- Change of Contract Construction Status Report
- Partial and Final Payment Vouchers
- Request for Fund Encumbrance/De-encumbrance
- Time Extension Recommendations
- Supplemental Agreements
- Change Orders
- Work Orders – Minor Extra Work
- Weekly Statement of Working Days

Authority and Duties of the Inspector

In accordance with Standard Specification 1510, Inspectors are authorized to:

- inspect the Work and the preparation, fabrication, or manufacture of materials;
- notify the Contractor of Work that does not conform to the Contract;
- reject materials that do not conform to Specification requirements;
- suspend portions of the work , until the issue is decided by the Engineer questions regarding,
    - the Contract Documents,
    - use of unapproved material, or
    - safety.

Inspectors are not authorized to alter or waive requirements of the Contract Documents or to issue instructions contrary to the Contract Documents.
Inspectors are not obligated or authorized to provide direction, superintendence, or guidance to the Contractor, its crew, its subcontractors, or suppliers to accomplish the Work.

Any action or inaction of the Inspector does not constitute a waiver of the Department's right to pursue any and all legal remedies for defective work or work performed by the Contractor in an un-workmanlike manner.

Need for Extra Enforcement

Drivers do not always reduce speeds in the work zone. In many cases, extraordinary efforts must be taken to enforce speed limits and reduce the risk of traffic accidents within the work zone. Law enforcement officials provide the means for enforcing work zone speed limits. Mn/DOT employs the Minnesota State Patrol (MSP) for extra enforcement on federally funded construction projects.

Mn/DOT has specific procedures for obtaining extra enforcement funding on Mn/DOT State Projects (S.P.). Federal funding is available for extra enforcement if approved in advance by the State Construction Engineer. These requests are considered for approval on a project-by-project basis.

Extra Enforcement Policy

It is the policy of the Minnesota Department of Transportation (Mn/DOT) and the Federal Highway Administration (FHWA) to employ extra enforcement and surveillance efforts when it is expected to increase the safety of the travelling public or construction personnel. The need for extra enforcement should be identified early in the project development process. Timely planning increases the effectiveness of the extra enforcement effort and the likelihood it will be approved.

Truck Inspections

Truck inspections may also be included in the extra enforcement effort. MSP personnel, either Troopers or Law Compliance Representatives (LCR), can provide truck inspection support on a contract basis. Obtaining funding and support follows the same procedure as that used for extra enforcement, but truck inspections require more flexibility in planning and operation.

Planned versus Immediate Requests

A planned request is always preferable to an immediate request. Planned use of extra enforcement and truck inspections ensures enough time for processing and provides better coordination between MN/DOT and the MSP.

Immediate requests are requests that take less than one week to process before enforcement is required. Procedures for immediate requests are the same as those for planned requests, except that immediate requests may be faxed or emailed. This informal request must still be followed by an official written request per the format illustrated later in this chapter.

Procedure

As a stipulation to receiving federal funding, Extra enforcement and truck inspection

requests must be approved by the State Construction Engineer before contracting with the MSP. When MSP support arrives, a Mn/DOT representative must sign the MSP Weekly reports at the end of each shift. It is a good practice to give the MSP Trooper a cell phone or pager number to call at the conclusion of the shift. Ensure the MSP report identifies the correct S.P. number.

The following outlines the extra enforcement process:

Action	**Responsibility**
1. Analyze the phases of the project to identify which areas may require extra enforcement.	MN/DOT District
2. Contact the local State Patrol District to request assistance in the enforcement plan and to obtain an estimate of its cost.	MN/DOT District
3. Submit a request for extra enforcement services funding to the State Construction Engineer (see sample at end of this chapter); send a copy to the Work Zone Safety Coordinator.	MN/DOT District
4. Assist in the development of the Work Zone Enforcement Plan and provides an estimate of the cost.	State Patrol District
5. Evaluate the District request for extra enforcement or Truck Inspection services. Send approval, or reason for denial, to the requesting district.	Central Office
6. On approval, contract with the MSP for extra enforcement services. Coordinate provisions of the extra enforcement plan with the local MSP Captain, and modify the extra enforcement plan as needed.	MN/DOT District
7. Provide extra enforcement services. Coordinate with Project Engineer, or designated representative as needed.	State Patrol District
8. Validate MSP Weekly Report: sign at bottom, ensure correct S.P. appears; make log entry in construction diary.	MN/DOT District
9. Submit Weekly Reports with MN/DOT official's signature and S.P. number to State Patrol Headquarters.	State Patrol District
10. Submit invoices with appropriate S.P. number to MN/DOT Construction Office. . Ensure Weekly Report has MN/DOT official's signature, and correct S.P. number.	MSP Headquarters
11. Audit and track invoices and supporting documents. Submit MSP invoices to Finance Office for payment.	Central Office
12. Make payment to MSP.	Central Office
13. Monitor the enforcement effort and modify as needed.	MN/DOT District

In the case of immediate requests, fax an information copy of the request to the attention of the Work Zone Safety Coordinator, Office of Construction and Innovative Contracting, at (651) 366-4248. Contact this office if you have not received a response within 24 hours.

Compensation for extra enforcement services will be the current MSP fee for contracted services, and will be on a flat fee basis.

The following **qualify** for extra enforcement and truck inspection funding:

1. All contracted costs associated with extra enforcement and truck inspection services on an approved Mn/DOT State Construction project.

2. Travel time for enforcement personnel to and from the construction work zone as allowed by current labor contract.

3. Minimum payments, as provided by current labor contract and MSP policy.

The following **do not** qualify for extra enforcement or truck inspections funding:

1. Maintenance projects or locally initiated projects.

2. Patrolling outside of the work zone, except as provided by the extra enforcement plan, project engineer or his designated representative.

3. Time spent on bookings, warrants, etc., beyond the scope of extra enforcement duties.

4. When engaged in services not directly associated with extra enforcement, e.g., escorting contractor equipment, motorist assistance, etc. This applies even if these activities are conducted within the work zone.

5. Travel and incidental costs above those allowed by current labor contract.

SAMPLE

OFFICE MEMORANDUM
xxxxx xx xxxxxxxxx xxx xxxxxxx
xxx xxxx xxxxxxx xxxxx
xxxxxxxxxxxx, MN 5xxxx-*xxxx*

Phone: *xxx-xxx-xxxx*
Fax: *xxx-xxx-xxxx*

DATE: ***(Date of request)***

TO: **Tom Ravn**
State Construction Engineer

FROM: **(*Resident Engineer*)**

SUBJECT: **Request for Extraordinary Enforcement Funds**
S.P. *123-4567*, *TH 1* from *Illgen City* to *Finland*

With the approval of the Assistant District Engineer, I request funding for extraordinary traffic enforcement in this construction work zone. We determine that use of the Minnesota State Patrol (MSP) is necessary for the safety of construction personnel and the travelling public.

The construction work zone is approximately *X* miles long, with a posted speed limit of *XX* mph. We expect that MSP presence on the site will help reduce traffic speeds to a safe level. I am requesting *one* trooper and unit for *XX* hours a day each week during the project duration:

xx* hours @ $75.76/hour** *(through 6/30/11)* **= $*x, xxx.xx

	Office	Mobile
(*Resident/Project Engineer*)	*(612) 777-7777*	*(612) 555-5555*
(*Project Inspector*)	*(612) 123-4567*	*(800) 222-3333*

cc: **Craig Mittelstadt - MS 650**
J. Hancock - ADE
B. Harrison - Traffic
Lt. Getum - MSP
(*Others you think appropriate*)
File

SAMPLE

The procedures, standards and guidelines for work zone traffic control are contained in Part VI of the Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD), and Chapter 8 of the Traffic Engineering Manual.

Personal Injury and Motor Vehicle Accidents

Personal injury or motor vehicle accidents involving state employees or state vehicles are to be reported promptly to their supervisor. In accidents involving other vehicles, the employee and the other vehicle operator are required to exchange names, addresses, description, and license number of their vehicles, and the name of the owner of each vehicle. No other information should be given unless requested by a law enforcement officer at the scene. Employees should contact their supervisor for the proper forms and procedures.

Construction Site Safety

While inspection and enforcement of safety and health regulations are the responsibility of OSHA and other organizations, the regulations must be followed the same as other contract requirements. To fulfill safety responsibilities and to ensure that insofar as possible, no employee on the project is in danger, the following actions are to be taken:

1. Engineers and Inspectors are to familiarize themselves with safety and health regulations appropriate to the project. The Districts have been sent copies of the regulations and the periodic revisions.

2. Discuss safety at the pre-construction conference. District Safety Administrators should be used as a resource for this part of the conference.

3. Monitor contractor's operations. Where conditions of operations are observed that may be hazardous either to state or contractor employees, the Engineer will notify the contractor's Safety Designee, orally or in writing as the situation warrants, that a suspected violation of the standards exists and request that corrective action be taken. Under no conditions will a contractor be given instructions on how to correct a deficiency. If the deficiency is corrected, no further action is necessary.

4. If a contractor fails or refuses to take corrective action, the Engineer should notify the District Safety Administrator of the suspected violation. The Safety Administrator will inspect the situation. If a violation exists, the contractor should be directed by the Engineer to correct the situation. If the Contractor refuses to do so, the events and actions should be put in writing, a copy sent to the Contractor, and the District Safety Administrator should contact the proper enforcement agency for action to be taken against the Contractor.

5. The Contractor is fully responsible for the development, implementation, and enforcement of all safety requirements on the project. If a situation is observed where continued operations have the potential for the loss of life or limb of project personnel or the public (e.g. un-shored or un-sloped excavations requiring the presence of an inspector within the excavation), the Engineer will order that such hazard and /or those exposed to the hazard, be promptly removed from the area until the situation is corrected. The Engineer will then follow the procedures in the preceding paragraph and immediately notify the Assistant District Engineer of the action taken. No employees will return to the hazardous area until an inspector of the agency responsible for the safety inspection and enforcement has inspected the area and found it safe for resumption or continuation of operations. A monetary deduction (per incident) may be assessed by Mn/DOT in accordance with the "Monetary Deduction Record for Safety Violation "form. (An example of a completed form is shown at the end of this section). Whenever possible, photographs should be taken documenting all safety violations.
http://www.dot.state.mn.us/const/tools/documents/monetarydeductionform.doc

6. No state employee will knowingly violate, or permit a person under their supervision to violate, a safety or health regulation.

Reporting Fatalities on Construction Projects

The Engineer or Inspector should notify the appropriate law enforcement agencies as soon as possible when an accident involving an injury or fatality occurs on a highway construction project. The Engineer should also notify the Assistant District Engineer, District Traffic Engineer, and the District Safety Administrator.

Mn/DOT Safety Contacts (Internal)

Work Zone Traffic Control

The procedures for work zone traffic control are outlined in the Mn/DOT Field Manual, which is part of the Minnesota Manual on Uniform Traffic Control Devices for streets and highways.

In addition, Mn/DOT has an agreement with the Department of Public Safety and other law enforcement agencies to hire off-duty officers to enforce traffic regulations in construction/maintenance work zones. See section 5-591.210 of this manual for Extra Enforcement procedures.

The Engineer should report all work zone traffic accidents to the State Construction Work Zone Safety Coordinator in addition to anyone else required by District policy.

MONETARY DEDUCTION RECORD FOR SAFETY VIOLATION

S.P. 8915-22

Specification Reference 1706 BACK UP ALARM

Number of Previously Charged Violations This Item

Description and Location of Violation:

FORD TANDEM AXLE DUMP TRUCK, MN LIC.# YA6234 WAS BEING OPERATED AT INTERSECTION OF T.H. 99 & T.H. 119 DUMPING FILL MATERIAL WITHOUT AN OPERATIONAL BACK-UP ALARM OR A SIGNAL PERSON AND HAVING AN OBSTRUCTED VIEW TO THE REAR. DRIVER AND CONTRACTOR'S SAFETY DESIGNEE WERE WARNED THE DAY BEFORE FOR THE SAME VIOLATION. ACTION WAS PROMISED BUT THE SAME VIOLATION OCCURED AGAIN THE NEXT DAY.

Date and Time of Violation Notification: TUES. JUNE 20, 2006 10:45 AM

Name of Contractor's Representative: JOE JOHNSON ABC CONTRACTING

Corrective Action Taken by Contractor:

UPON NOTIFICATION THAT THIS WAS THE SECOND VIOLATION IN TWO DAYS AND THAT A MONETARY DEDUCTION WAS BEING ASSESSED, THE CONTRACTOR IMMEDIATELY REMOVED TRUCK FROM THE PROJECT UNTIL THE BACK-UP ALARM COULD BE REPAIRED OR REPLACED.

Date and Time of Corrective Action TUES. JUNE 20, 2006 10:45AM

Amount of Monetary Deduction:

$ 500.00

Date JUN. 20, 2006 Project Engineer/Supervisor CHUCK EDWARDS

CC: Contractor
Inspector
Project Engineer/File

Rev. 5/12/06

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PRE-CONSTRUCTION CONFERENCE

As soon as possible after the project has been awarded, the Engineer should arrange a conference with the Contractor and all other interested parties to review contract requirements, construction details, work schedules, and any items peculiar to the project. Prior to this meeting the Engineer, all key Inspectors, and the Survey Chief should study the plans and become familiar with the project site to be well informed as to the requirements and existing conditions.

Participants

The following is a recommended list of attendees:

1. Project Engineer, Resident Engineer and District Staff Engineers as needed.
2. Contractor, Subcontractors, and their Superintendents and Foremen.
3. District Construction Office person.
4. Chief Inspectors and Survey personnel who have been or will be assigned to the project.
5. Engineers from the Federal Highway Administration (if project is FFO).
6. Engineers or representatives from the Mn/DOT Central Office as needed to clarify administrative or technical matters.
7. Engineers or representatives of other governmental units or agencies.
8. Representatives of any utility companies having property within or immediately adjacent to the project limits.
9. Enforcement or Traffic Control Officers.
10. District Safety Administrator
11. Office of Civil Rights – Contract Compliance Specialist and DBE Specialist

Minutes of the Meeting

The Engineer is responsible for the conference agenda, conducting the discussions, and ensuring minutes of the meeting are completed and distributed to all attendees.

Agenda

Subjects that should be addressed at the conference include the following:

1. Contractor's Operation

a. proposed sequence
b. potential problems
c. required progress schedule[1]
d. special features
e. coordination with Utility Companies

[1] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1801.1

2. Haul Roads[2]
- a. identification
- b. duration

3. Subcontractor(s)
- a. Request to Sublet forms[3]
- b. work proposed for each

4. Key Personnel
- a. Mn/DOT
  - (1) Project Engineer[4]
  - (2) Chief Inspector[5]
  - (3) Chief Surveyor
  - (4) Quality Assurance Auditor
- b. Contractor
  - (1) Superintendent[6]
  - (2) Authorized representatives for signatures
  - (3) Certification of personnel

5. Materials
- a. Company name[7]
- b. Where materials are located for inspection
- c. Payment for material on-hand[8]

6. Field Office/Labs[9]
- a. Determine location of lab
- b. When will lab be established and removed
- c. Additional equipment

7. Traffic Control[10]

[2] MN/DOT Standard Specifications for Construction, 2005 Edition, Sections 1515 and 2051
[3] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1801 and Contract Administration Manual section 5-591.360
[4] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1509
[5] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1510
[6] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1506
[7] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1601
[8] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1906 and Contract Administration Manual section 5-591.370
[9] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 2031 and Special Provisions
[10] Minnesota Manual on Uniform Traffic Control Devices (MUTCD), MN/DOT Standard Specification, 2005 Edition, Section 1710, and Temporary Traffic Control Zone Layouts Field Manual 2007

a. Highlight specific traffic control issues
b. Certified traffic control supervisor
c. Use of extraordinary enforcement

8.Permits[11]

a. Mn/DOT
   1. Use of State Waters
      (a) DNR
      (b) Wetland Conservation Act (WCA)
      (c) Corps of Engineers
      (d) Municipality
      (e) Watershed

   2. Erosion Control
      (a) MPCA

b. Contractor
   1. Use of State Waters
      (a) DNR
      (b) MPCA
      (c) Corps of Engineers
      (d) Municipality
      (e) Watershed

   2. Sewer and Water Installation
      (a) Municipality

   3. Electrical
      (a) State Board of Electricity

   4. Burning
      (a) MPCA
      (b) Municipality

9. Labor Compliance

In order to provide enhanced prevailing wage and contract administration instruction to contractors that perform work under construction contracts that are funded in whole or in part with federal and/or state funds, the Mn/DOT Labor Compliance Unit (LCU) has produced a federal-aid, state-aid and federal-only videos that may be utilized by the Department[12] at each Pre-Construction

[11] MN/DOT Standard Specification for Construction, 2005 Edition, Section 1702
[12] Mn/DOT Standard Specifications for Construction, 2005 Edition, Section 1103

Conference. The videos are available on-line at: http://www.dot.state.mn.us/const/labor/preconmeeting.html

The above website also contains the federal-aid conference agenda, state-aid conference agenda and the federal-only conference agenda which may be utilized by the Department during the meeting.

In addition to the agenda items, it's recommended that the Department request a list from the prime contractor detailing all material suppliers. This list shall include the location of the supply source, the type of material, company/corporation name and contact person, address, and telephone number.

Once the presentation of the labor compliance information has been completed, the Department should record it in the meeting minutes. The LCU has estimated the presentation time to be 15 minutes.

Poster Boards

How to Order Poster Board Materials:

1. Complete a Poster Board Request Form.
2. Mn/DOT personnel should send an email to: michelle.travers@state.mn.us

Posters may also be downloaded from: http://www.dot.state.mn.us/const/labor/posterboards.html

Questions or comments can be directed to the LCU.

10. Office of Civil Rights[13]

a. Distribute required posters
   i. "Notice of Nondiscrimination in Employment", Mn/DOT Central Stores TP-017244
   ii. "Equal Employment Opportunity is the Law", supplied directly t to the Contractor by the Minnesota Department of Human Rights when issuing a Certificate of Compliance. Posters may be obtained from: Contract Compliance Unit, Minnesota Department of Human Rights, Army Corps of Engineers Centre, 190 E. 5th Street Suite 700, St Paul MN 55101
b. Form PR-1391
c. On-The-Job-Trainees (if applicable)
d. EEO provisions

11. Cooperation with Others[14]

a. Other contractors
b. Utility companies
c. Municipalities

[13] Contract Administration Manual section 5-591.330 and Special Provisions
[14] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1505

d. Law enforcement
e. General public

12. Erosion Control[15]

a. NPDES if applicable
b. Reference key parts of erosion control plan
c. Note any special requirements based on the environmental documents
d. Erosion Control Supervison

13. Safety – utilize the Mn/DOT Pre-construction Meeting Safety Checklist, available at: http://www.dot.state.mn.us/const/tools/documents/preconstructionsafetychecklist.doc

a. Request documentation for A Workplace Accident Injury Reduction (AWAIR) Act program, which requires a written safety and health program.
b. Review specific safety responsibilities for each of the different levels of Contractor's on-site supervisory personnel.
c. Obtain the name of the Contractor's safety director and business phone.
d. Obtain the name of the Contractor's on-site safety coordinator and position.
e. Obtain the name of the Contractor's workers compensation insurance with address, representative's name and phone number.
f. Review the Contractor's procedure for handling on-site safety related complaints or issues.
g. List when and what personal protective equipment will be required by the Contractor for employee safety and health.
h. List the Contractor's emergency response information for the specific project.
i. Identify Project specific safety measures that will be taken by the Contractor during the different phases of the project construction, including excavation protective systems, fall protection measures, backing equipment protective measures, and work zone traffic control measures.

See: Specification 1706 "Employee Health and Welfare"
Specification 1707 "Public Convenience and Safety"
Specification 1501 "Engineer Authority"
"Construction Site Safety" portion of this manual

14. Others

a. Vehicle Licensing[16]
b. Partial Estimate Data[17]
c. Possible Overruns[18]

[15] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1717.2
[16] Minnesota Statute § 168.09, subd. 1
[17] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1906
[18] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1903

d. Waste Disposal

I. PREAMBLE

It is in the public interest that public buildings and other public works projects be constructed and maintained by the best means and the highest quality of labor reasonably available and that persons working on public works projects be compensated according to the real value of the services they perform.[1]

Therefore, the contracting authority[2] (CA) shall administer the contract in accordance with this section and all applicable federal regulations, state statutes and rules[3], along with the plans, specifications and provisions, which are incorporated into the contract. Pursuant with Minnesota Rules 8820.3000, Subpart 5, failure to fulfill this obligation could subject the CA to financial sanctions.

The Mn/DOT Labor Compliance Unit (LCU) shall provide to the CA contract administration support and oversight in the areas of federal and state prevailing wage regulations, along with investigative, enforcement and educational assistance.

II. SCOPE

This section shall apply to a contract that is funded in whole or in part with federal funds[4] and/or state funds.[5]

In order to ensure compliance, the CA shall apply the guidelines outlined in this section. However, the guidance provided does not necessarily represent all contract administration strategies, nor does it cover all federal, state, and local labor laws, ordinances, rules and regulations. It is the responsibility of the CA to inform itself about other regulations that may be applicable to the contract.

For additional information or contract administration resources, refer to the LCU website or contact a professional in the LCU.

III. MN/DOT LABOR COMPLIANCE UNIT (LCU)

The objective of the LCU is to serve the CA by providing contract administration support and oversight concerning the Federal Davis-Bacon & Related Acts (DBRA) and the State of Minnesota Prevailing Wage Law. Specifically, the LCU provides expertise and assistance in the areas of prevailing wage audits, investigations, determinations, dispute resolution, training and the collection and distribution of wages.

Any questions, comments or concerns, please contact a professional in the LCU.

[1] Minnesota Statute 177.41
[2] Mn/DOT Standard Specifications for Construction, 2005 Edition, Section 1103
[3] Minnesota Rules 8820.3000, Subpart 2
[4] 29 CFR Part 5.5(a)
[5] Minnesota Statute 177.41

IV. CONTRACT LABOR PROVISIONS & WAGE DECISIONS

The CA is responsible to ensure that all applicable contract labor provisions are incorporated into the contract. To obtain the contract labor provisions refer to the Proposal/Contract Documents link on the Labor Compliance website.

Federal Wage Decision Requirements
Federal general wage decisions are specific to the county in which the construction work is being performed; a decision does not cross county or state lines.[6] If a project extends into more than one county or state, the CA shall incorporate into the contract the applicable wage decision for each county or state and enforce each decision accordingly.

State Wage Determination Requirements
State highway and heavy wage determinations are specific to ten separate regions throughout the state of Minnesota. If a project extends into more than one region, the CA shall incorporate into the contract the applicable wage decision for each region. If the contract contains multiple highway and heavy wage determinations, the CA shall enforce only one standard of hours of labor and wage rates.[7]

State commercial wage determinations are specific to the county in which the construction work is being performed. If a project extends into more than one county, the CA shall incorporate into the contract the applicable wage determination for each county.

If the CA has any questions regarding the incorporation of the labor provisions or wage decisions into a contract, please contact a professional in the LCU.

V. PRE-CONSTRUCTION MEETING

In order to provide contractors with a comprehensive summary of the contract labor provisions, the LCU recommends that the CA utilize the federal-aid, state-aid or federal only VHS or DVD audiovisual pre-construction resources. It's recommended that the CA discuss the agenda items provided with each audiovisual package. For further information, refer to Section .310 of this manual.

VI. PAYROLLS AND STATEMENTS

All contractors performing work under the contract shall submit a payroll statement to the CA.[8] The CA shall utilize a payroll tracking system to monitor the submission of payroll statements from all contractors performing work under the contract.

[6] 29 CFR Part 1.7(a)
[7] Minnesota Statute 177.44, Subdivision 4
[8] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(c)

Federal Payroll Submission Requirements
Each week, in which work was performed under the contract, the CA shall require the prime contractor to submit payroll statements, along with those of any subcontractor. Each statement shall be submitted within seven days after the regular payment date of the payroll period.[9]

State Payroll Submission Requirements
The CA shall require the prime contractor to submit payroll statements, along with those of any subcontractor according to the contractor's payment schedule. If a contractor pays its employees weekly, a payroll statement shall be submitted weekly. If a contractor pays its employees biweekly, a payroll statement shall be submitted biweekly.

Payroll statements may be submitted in any form provided it includes all the information specified below. Contractors needing a payroll form may utilize the "front side" of the U.S. Department of Labor's, WH-347 - Payroll Form.

The CA shall ensure that each payroll statement submitted includes all employees that performed work under the contract and contains at a minimum the following information:[10]

- Contractor's name, address, and telephone number.
- State project number.
- Payroll report number.
- Project location.
- Workweek ending date.
- Name, social security number, and home address for each employee.
- Labor classification(s) and/or three-digit code for each employee.
- Hourly straight time and overtime wage rates paid to each employee.
- Daily and weekly hours worked in each labor classification, including overtime hours for each employee.
- Authorized legal deductions for each employee.

[9] 29 CFR Part 3.4(a)
[10] Minnesota Rules 5200.1106, Subpart 10

- Project gross amount, weekly gross amount and net wages paid to each employee.

The CA shall ensure that all payroll statements are accompanied with a completed and signed MN/DOT, 21658 - Statement of Compliance Form. Payroll statements that do not include this form or the form is incomplete, shall be returned to the contractor. See section **VIII, FRINGE BENEFITS** for guidelines regarding the completion of the form.

The CA shall ensure compliance by thoroughly auditing the first two weekly-certified payroll statements submitted by each contractor that performed work under the contract and a random one thereafter. Furthermore, the CA shall implement the strategies prescribed in section **XIII, EMPLOYEE INTERVIEWS & OTHER LABOR RELATED INFORMATION** to obtain employee information that shall be utilized during the payroll audit.

Payroll discrepancies shall be addressed and resolved by the CA. However, if compliance cannot be obtained, the CA shall contact a professional in the LCU.

The CA shall require the prime contractor maintain all certified payroll records, including those of any subcontractor, throughout the course of a construction project and retain all records for a period of three years after the final contract voucher has been issued.[11]

Upon request from the U.S. Department of Labor (U.S. DOL), Federal Highway Administration (FHWA), Minnesota Department of Labor and Industry (MN/DLI) or the Department, the CA shall furnish copies of payroll records submitted by the prime contractor and those of any subcontractor, along with other records, deemed appropriate by the requesting agency to determine compliance with these contract provisions.[12]

Concerning Mn/DOT contracts, the project engineer may administer the submission of payroll records according to MN/DOT's Payroll Maintenance Program. The program has not been approved for federal-aid contracts administered by local units of government and will not be allowed for such contracts. However, the program may be utilized for local state-aid contracts.

If, after written notice, the prime contractor fails to submit its payroll statements and certification forms and those of any subcontractor, the CA may implement the actions prescribed in section **XVIII, ENFORCEMENT OF CONTRACT LABOR PROVISIONS.** Furthermore, if compliance cannot be obtained, the CA shall contact a professional in the LCU.

[11] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(a)
[12] Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

VII. WAGE RATES

The CA shall ensure that all workers are compensated according to the U.S. DOL federal general decision(s) and/or the MN/DLI state prevailing wage determination(s) incorporated into the contract, **whichever is greater**. The CA shall ensure that each worker is compensated at the required minimum total hourly wage rate for all hours worked on the project and for the appropriate classification of labor.

Wage rates listed in the federal and/or state wage determination(s) contain two components: the hourly basic rate and the fringe rate; together they equal the total prevailing wage rate. The CA shall ensure that a worker is compensated at a minimum, a combination of cash and fringe benefits equaling the total prevailing wage rate.[13]

The CA shall ensure that a contractor does not reduce a worker's private, regular rate of pay when the wage rate certified by the U.S. DOL or MN/DLI is less than the worker's normal hourly wage.[14]

VIII. FRINGE BENEFITS

The CA shall review the MN/DOT 21658, Statement of Compliance Form to determine if a contractor's fringe benefit contributions are bona-fide and acceptable. Credit toward the total prevailing wage rate shall be determined for each individual employee and is allowed for bona fide fringe benefits that:[15]

- include contributions irrevocably made by a contractor on behalf of an employee to a financially responsible trustee, third person, fund, plan, or program;
- are legally enforceable;
- have been communicated in writing to the employee; and
- are made available to the employee once he/she has met all eligibility requirements.

The CA shall not allow the contractor a credit for benefits required by federal, state or local law, such as: worker's compensation, unemployment compensation, and social security contributions.[16]

The CA shall request copies of fringe benefit plan documents, along with other records, deemed appropriate to determine compliance with these contract provisions.[17]

[13] Minnesota Statute 177.42, Subdivision 6
[14] Minnesota Statute 181.03, Subdivision 1(2)
[15] 29 CFR Part 5.23
[16] 29 CFR Part 5.29(f)
[17] Minnesota Statute 177.44, Subdivision 7 and Minnesota Rules 5200.1106, Subpart 10

If, after written notice, the prime contractor fails to submit its fringe benefit statements and those of any subcontractor, the CA may implement the actions prescribed in section **XVIII, ENFORCEMENT OF CONTRACT LABOR PROVISIONS.** Furthermore, if compliance cannot be obtained, the CA shall contact a professional in the LCU.

IX. OVERTIME

Federal Overtime (OT) Requirements

Pursuant with federal regulations, the CA shall ensure that a worker working in excess of 40 hours per week is compensated at a rate not less than 1-1/2 times the basic hourly rate as determined by the United States Secretary of Labor.[18]

State Overtime (OT) Requirements

Pursuant with state law, the CA shall ensure that a worker working longer than the prevailing hours of labor is paid for all hours in excess of the prevailing hours at a rate of at least 1-1/2 times the hourly basic hourly rate of pay. [19] The prevailing hours of labor is defined as not more than 8 hours per day or more than 40 hours per week.[20]

X. LABOR CLASSIFICATIONS

The CA shall refer to the federal general decision(s) or the state wage determination(s) incorporated into the contract to determine an applicable job classification. The CA shall ensure that each worker is classified and compensated for the actual work performed regardless of the worker's skill level.[21]

Federal Labor Classification Requirements

Preferably at the pre-construction meeting, the CA, along with all contractors shall review the federal general decision and complete a U.S. DOL, SF-1444 - Request for Authorization of Additional Classification and Wage Rate Form for any labor classification missing from the decision and submit it to the MN/DOT Labor Compliance Unit for processing.[22]

State Labor Classification Requirements

If the CA cannot determine an appropriate job classification, state law requires that the worker be assigned a job classification that is the "same or most similar".[23] Contractors should refer to the Master Job Classification List[24] to obtain an applicable labor classification. Clarification regarding labor classifications should be directed to the Minnesota Department of Labor and Industry or contact a professional in the LCU.

[18] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 7
[19] Minnesota Statute 177.44, Subdivision 1
[20] Minnesota Statute 177.42, Subdivision 4
[21] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)
[22] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 2
[23] Minnesota Statute 177.44, Subdivision 1
[24] Minnesota Rules 5200.1100

XI. APPRENTICES, TRAINEES AND HELPERS

An apprentice is not subject to the federal and/or state wage decisions incorporated into the contract. Therefore, the CA shall ensure that the contractor demonstrates compliance with the following: [25]

- The apprentice is performing the work of his/her trade.
- The apprentice is registered with the U.S. DOL Bureau of Apprenticeship and Training or MN/DLI Division of Voluntary Apprenticeship.
- The apprentice is compensated according to the rate specified in the program for the level of progress.
- The ratio of apprentices to journeyman workers on the project is not greater than the ratio permitted for the contractor's entire work force under the registered program.[26]

A trainee is not subject to the federal general decision incorporated into the contract. Therefore, the CA shall ensure that the contractor demonstrates compliance with the following: [27]

- The trainee is performing the work of his/her trade.
- The trainee is registered with the U.S. DOL Employment and Training Administration.
- The trainee is compensated according to the rate specified in the program for the level of progress.
- The ratio of trainees to journeyman workers on the project is not greater than the ratio permitted under the program.
- All hours worked in excess of the prescribed hours allowed under the program and/or this contract shall be paid at the journeyman wage rate incorporated into and found elsewhere in this contract.

Furthermore, a trainee is not exempt under state law; the CA shall ensure that the contractor assign the trainee a job classification that is the "same or most similar"[28] and compensate the trainee for the actual work performed regardless of the trainee's skill level, unless the trainee is:[29]

[25] Minnesota Rules 5200.1070
[26] MN/DOLI Division of Apprenticeship – April 6, 1995 Memorandum from Jerry Briggs, Director
[27] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(b)
[28] Minnesota Statute 177.44, Subdivision 1
[29] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)

- employed and registered in a bona-fide apprenticeship program; or

- employed in the first 90 days of probationary employment as an apprentice, is not registered in the apprenticeship program, but has been certified by the proper government authorities to be eligible for probationary employment as an apprentice.

A helper may perform work only if the helper classification is specified and defined in the federal general decision incorporated into and found elsewhere in this contract or is approved pursuant to the federal conformance procedure.[30]
A helper is not exempt under state law; a contractor shall assign the helper a job classification that is the "same or most similar"[31] and compensate the helper for the actual work performed regardless of the helper's skill level.[32]

If a contractor fails to demonstrate compliance with the terms established in this section, the contractor shall compensate the worker not less than the applicable total prevailing wage rate for the actual work performed.[33]

XII. INDEPENDENT CONTRACTORS, OWNERS, SUPERVISORS AND FOREMAN

Pursuant with federal regulations, working owners, supervisors and/or foreman who devote more than 20 percent of their time during a workweek to laborer or mechanic duties are considered laborers or mechanics for the time so spent and are subject to the contract prevailing wage requirements.

However, the contract labor provisions do not apply to owners, supervisors or foreman whose duties are primarily associated with bona fide administrative, executive or clerical positions. These individuals are not deemed to be laborers or mechanics.

Pursuant with state regulations, independent contractors, owners, supervisors and foreman performing work as a laborer or mechanic are subject to the contract prevailing wage provisions.

The CA shall ensure that all independent contractors, owners, supervisors and foreman performing work under a contract a compensated correctly for all hours worked and for the appropriate job classification.

[30] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(c)
[31] Minnesota Statute 177.44, Subdivision 1
[32] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)
[33] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 4(a)(b)(c)

XIII. POSTER BOARDS

The CA shall require the prime contractor to construct and display a poster board on the project site of work, which contains all required posters, is legible and is accessible to all workers from the first day of work until the project is 100 percent complete.[34] The CA shall refer to Section .320 of this manual regarding the process that the prime contractor shall follow to obtain poster board materials.

The CA shall inspect the poster board to ensure compliance with the above-mentioned requirements and shall not allow the prime contractor to place a poster board at an off-site location.

Any poster board discrepancies shall be addressed and resolved by the CA. However, if compliance cannot be obtained, the CA shall contact a professional in the LCU.

XIV. EMPLOYEE INTERVIEWS & OTHER LABOR RELATED INFORMATION

In order to ensure compliance, the CA shall conduct random, monthly employee interviews for each contractor performing work under the contract. The CA shall utilize the MN/DOT Labor Compliance Field Review Form. The CA shall attempt to ensure employee confidentiality at all times.

The CA shall compare the information obtained during the interview to the information contained on a contractor's payroll statement. Any discrepancies shall be addressed and resolved by the CA. However, if compliance cannot be obtained, the CA shall contact a professional in the LCU.

At any time the CA and the prime contractor shall permit representatives from the U.S. DOL, FHWA, MN/DLI, or Mn/DOT to interview its workers during working hours on the project.[35]

In addition to conducting employee interviews, the LCU suggests that the CA's daily inspection diaries contain the following information about each contractor:

- The name of the contractor.
- Type of work performed.
- The number of employees performing work.
- Hours worked, including start/stop times.
- Detailed description of any equipment being utilized.

[34] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 1(a)
[35] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section V, Subpart 2(g)

XV. TRUCKING / OFF-SITE FACILITIES

Federal Trucking / Off-Site Facility Requirements

The CA shall ensure that the prime contractor's workers and those of all subcontractors are compensated in accordance with the federal wage decision incorporated into and found elsewhere in this contract for the following work duties:

- The processing or manufacturing of material, including the hauling of material to and from an immediately adjacent, dedicated off-site facility.[36]

- The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project.[37]

State Trucking / Off-Site Facility Requirements

The CA shall ensure that the prime contractor's workers and those of all subcontractors, are compensated in accordance with the state wage determination incorporated into and found elsewhere in this contract for the following work duties:

- The processing or manufacturing of material, including the hauling of material to and from a prime contractor's material operation that is not a separate commercial establishment.[38]

- The processing or manufacturing of material, including the hauling of material to and from an off-site material operation that is not considered a commercial establishment. [39]

- The hauling of any or all stockpiled or excavated materials on the project work site to other locations on the same project even if the truck leaves the work site at some point.[40]

- The delivery of materials from a non-commercial establishment to the project and the return haul.[41]

- The delivery of materials from another construction project site to the public works project and the return haul, either empty or loaded. Construction projects are not considered commercial establishments.[42]

[36] 29 CFR Part 5.2(l)(2)
[37] 29 CFR Part 5.2(j)(1)
[38] ALJ Findings of Fact, Conclusions of Law, and Recommendation, Conclusions (7), Case #12-3000-11993-2
[39] Minnesota Rules 5200.1106, Subpart 3B(2)
[40] Minnesota Rules 5200.1106, Subpart 3B(1)
[41] Minnesota Rules 5200.1106, Subpart 3B(2)
[42] Minnesota Rules 5200.1106, Subpart 3B(3)

- The hauling required to remove any materials from the project to a location off the project site and the return haul, either empty or loaded from other than a commercial establishment.[43]

- The delivery of mineral aggregate materials from a commercial establishment, which is deposited "substantially in place" and the return haul, either empty or loaded.[44]

The CA shall ensure that a contractor acquiring trucking services from an ITO, MTO and/or Truck Broker to perform and/or provide "covered" hauling activities complies with the payment of the certified state truck rental rates.[45]

Each month, in which hauling activities were performed under the contract, the CA shall require the prime contractor and any subcontractor to submit a *MN/DOT, TP-90550* – ITO Month-End Trucking Report and MTO Month-End Trucking Report and MN/DOT, TP-90551 - Statement of Compliance Form, along with each ITOs, MTOs and/or Truck Brokers reports to the department.[46] The specifications regarding the dates for submission can be found near the bottom of the form.

In order to ensure compliance, the CA shall review the first two month-end trucking reports submitted by each contractor that performed work under the contract and a random one thereafter.

Any truck report discrepancies shall be addressed and resolved by the CA. However, if compliance cannot be obtained, the CA shall contact a professional in the LCU.

XVI. CHILD LABOR

The CA shall not allow a worker under the age of 18 to perform work on construction projects.[47]

However, in accordance with state law, the CA may permit a worker under the age of 18, who is employed in a corporation totally owned by one or both parents and is supervised by the parent(s), to perform work on construction projects.[48] Conversely, if this contractor is subject to the federal Fair Labor Standards Act, the CA shall not allow a worker under the age of 18 to perform work in a hazardous occupation.[49]

To protect the interests of the department, the CA may remove a worker that appears to be under the age of 18 from the construction project until the contractor or worker can

[43] Minnesota Rules 5200.1106, Subpart 3B(4)
[44] Minnesota Rules 5200.1106, Subpart 3B(5)(6)
[45] Minnesota Rules 5200.1106, Subpart 1
[46] Minnesota Rules 5200.1106, Subpart 10
[47] Minnesota Rules 5200.0910, Subpart F
[48] Minnesota Rules 5200.0930, Subpart 4
[49] 29 CFR Part 570.2(a)(ii)

demonstrate proof of age[50] and compliance with all applicable federal and/or state regulations.[51]

XVII. EMPLOYEE WAGE COMPLAINTS

The CA shall address and attempt to resolve all verbal and written prevailing wage complaints initiated by workers performing work under the contract. Upon receipt of the alleged prevailing wage violation, the CA should recommend that the employee complete and submit a formal Prevailing Wage Complaint Form to the CA or the LCU. The CA shall attempt to ensure employee confidentiality at all times.

If the CA needs assistance in resolving the matter, please contact a professional in the LCU.

XVIII. FINALIZATION OF THE CONTRACT

Before issuing the final contract voucher, the CA shall contact the LCU or review CMS to ensure that there are no outstanding prevailing wage issues associated with the contract. Furthermore, for federal-aid contracts, the CA shall review and complete the Federal Aid Contracts Check List to ensure that all contractors have demonstrated compliance with the contract labor provisions. Further information can be obtained in Section .370 of this manual.

XIX. ENFORCEMENT OF CONTRACT LABOR PROVISIONS

The CA is responsible for enforcing the contract labor provisions to the same extent as any other contract specification. Furthermore, the enforcement strategies suggested in this section shall be implemented consistently and carried out in the same manner for federal and/or state funded contracts.

If the CA has determined that a contractor has violated federal and/or state prevailing wage laws, or any portion of the contract, the CA may implement, after written notice, one or more of the following sanctions:

- Withhold or cause to be withheld from the prime contractor under this contract, or any other federally funded contract with the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay workers employed by the prime contractor or any subcontractor the full amount of wages required by this contract.[52]

[50] Minnesota Statute 181A.06, Subdivision 4
[51] MN/DOT Standard Specifications for Construction, Section 1701
[52] Required Contract Provisions Federal-Aid Construction Contracts Form-1273, Section IV, Subpart 6

- Withhold or cause to be withheld from the prime contractor such amounts in considerations or assessments against the prime contractor, whether arising from this contract or other contract with the department.[53]

- The department may reject a bid from a prime contractor that has demonstrated continued or persistent noncompliance with the prevailing wage law on previous or current contracts with the department.[54]

- The department may take the prosecution of the work out of the hands of the prime contractor, place the contractor in default and terminate this contract for failure to demonstrate compliance with these provisions.[55]

The CA shall execute all enforcement actions prescribed in this section. However, if compliance cannot be obtained, the CA shall contact a professional in the LCU for assistance.

[53] MN/DOT Standard Specifications for Construction, Section 1906
[54] Minnesota Statute 161.32, Subdivision 1(d)
[55] MN/DOT Standard Specifications for Construction, Section 1808

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GENERAL POLICY

The Civil Rights Office is committed to ensure equal opportunity for all businesses on The Minnesota Department of Transportation projects. Specifically:

- To ensure that no small business owned by a socially and economically disadvantaged person is excluded from participation, or denied benefits, based on race, religion, color, sex, or national origin.
- To promote fair and equitable public service, advocating non-discriminatory treatment in providing transportation services.
- To ensure transportation services are provided in a non-discriminatory manner.
- To ensure equal opportunity in employment, participation, benefits, services, and contracts.
- To eliminate discrimination.
- To increase the number of businesses owned by socially and economically disadvantaged individuals in the highway and bridge construction industry.

THE OFFICE OF CIVIL RIGHTS (OCR)

The Mn/DOT OCR is responsible for administering programs related to non-discrimination, affirmative action, and equal opportunity related to MN/DOT contracting activities using state and federal funds. The Disadvantaged Business Enterprise (DBE) program, Veteran's Preference Program, Affirmative Action/Equal Employment Opportunity AA/EEO) Contract Compliance, On the Job Training, and Title VI Non-discrimination are primary programs falling under OCR's administration.

FEDERAL PROGRAM AND LAWS

U.S. Code of Federal Regulations (CFR) 49 CFR Part 26 provides the requirements for the DBE Program on federally funded contracts. These provisions lay out the roles various Mn/DOT offices have within the program's overall assessment of good faith efforts (GFE), certification of new DBEs, monitoring of projects via Contractor Payment Forms, Exhibit As etc.

STATE PROGRAM AND LAWS

Targeted Group Business (TGB)
Minnesota Statutes 16C and Minnesota Rules Chapter 1230 contain regulations for the TGB program; calling for maximizing opportunities for TGB certified firms on State-only funded projects. The Minnesota Department of Administration certifies women and minority owned businesses as TGBs. At this time, Mn/DOT does not apply TGB goals on state funded contracts.

Veteran Preference
Minnesota Statutes §161.321 (subdivision 2) has a preference in the amount bid for state funded Mn/DOT let projects to veteran-owned/service disabled small businesses. It also allows for a veteran goal to be placed on a project for the use of veteran-owned small businesses as sub-contractors. The Veteran Preference Program is mandated by State law.

EQUAL EMPLOYMENT OPPORTUNITY (EEO)

Construction projects may have mandated employment programs, including: On-The-Job Training (OJT) employment programs on Federally funded construction projects, and Tribal Employment Rights Ordinance (TERO) on projects on tribal reservations.

FEDERAL EEO PROGRAMS AND LAWS

Numerous Federal laws and policies require equal employment practices by contractors working on federally funded projects. FHWA regulations (23 CFR Part 200, Part 230, Part 630, and Part 633) contain equal employment requirements pertaining to contractors and subcontractors on FHWA highway construction projects.

The EEO Special Provisions contained in each Contract outline the requirements for equal employment.

ON-THE-JOB TRAINING (OJT)

If OJT is required, OJT provisions are located in Division S of the proposal, 2041 On the Job Training Program, and in the schedule of prices under Contract Item 2041.610 Trainees, which contains the contract unit price (fixed amount).

OCR reviews all federally assisted highway construction projects and selects those suitable for providing training opportunities.

- The contractor must complete all sections of the “On-the-Job Training (OJT) Program Approval Form” and submit prior to the time specified for the opening of bids.
- A contractor who is approved and accepted into Mn/DOT’s On-the-Job-Training (OJT) Alternative Program will submit their training plan within the timeframes specified by that program and therefore will not be required to submit the “On-the-Job Training (OJT) Program Approval Form” with their bid.

Trainees under approved programs are paid at least the percentages of the journey-worker’s rate provided in the contract or other reduced rates included in the approved program. Unless otherwise provided in the approved program, the rate used to determine the trainees’ minimum salary would be a percentage of the base rate for a journey-worker.

The contractor is reimbursed for each hour of training at the rate specified in the contract line item if all of the requirements of the training provisions in the contract are met.

TRIBAL EMPLOYMENT RIGHTS ORDINANCE (T.E.R.O.) AND INDIAN PREFERENCE PROGRAMS

The American Indian Tribal Employment Rights Ordinance (T.E.R.O.) is a tribally based employment rights initiative that provides American Indian preference in employment, training, and sub-contacting on projects on the reservation. The program seeks to maximize American Indian opportunities by the establishment of an employment preference ordinance and contract compliance program for private contractors who may have construction projects on or near a reservation.

The Contractor is required to submit the "Mn/DOT Indian Employment Tracking Form" to the Mn/DOT Office of Civil Rights 30 days after work is substantially complete. The Engineer may withhold money if

the Contractor fails to submit this form. The form must list all individuals who were referred and hired through one of the federally recognized tribal T.E.R.O. offices in Minnesota for the Project, whether hired by the Contractor or any subcontractor. Mn/DOT uses this information to track Indian employment for projects on or near reservations.

STATE EEO PROGRAMS AND LAWS

Minnesota law requires that a project in excess of $100,000, funded in whole or in part by State funds, must comply with the Minnesota Human Rights Act (MHRA – MN Statutes §§ 363A.01 *et.seq.*) which prohibits job discrimination against applicants or employees on the basis of race, color, creed, religion, national origin, sex, marital status, status with regard to public assistance, disability, sexual orientation or age.

STAFF ASSIGNMENT – AA/EEO Contract Compliance

Based on project location, each project is assigned to a Contract Compliance Specialist (CCS) for employment review. Questions about the employment programs may be directed to the CCS staff.

STAFF ASSIGNMENT – Disadvantaged Business Enterprise Program

DBE Specialists are assigned to respective regional/district areas as follows:

- Northern Region – Districts 1-4
- Metro Region – East Metro
- Metro Region – Western Metro
- Southern Region – District 6-8

Questions about specific projects should be directed to the DBE Specialist assigned to the region where the project is located.

GENERAL PROGRAM COMPLIANCE

The employment goals (on all projects), and DBE/OJT Programs (on selected projects) are contract specifications, and must be adhered to in the same manner as other contract specifications. Examples of possible violations include, but are not limited to:

- moving protected class employees from site to site to meet employment goals, i.e. not for a legitimate business reason;
- using prime or other contractor's equipment or employees to do DBE subcontracted work;
- fraudulently obtaining DBE certification;
- allowing DBE contractors to perform work outside their areas of certification;
- instances or allegations of discrimination, harassment, violence between contractor employees, among different contractor employees, or involving Mn/DOT employees.

Possible or suspected violations, including anonymous complaints, must be brought to the attention of OCR. OCR will provide training concerning the DBE and equal opportunity requirements upon request.

SPECIFIC PROGRAM COMPLIANCE - PROJECT ENGINEER RESPONSIBILITY

The following is a summary of compliance efforts required of Project Engineers:

1. Notify OCR of person to whom OCR staff should send project specific correspondence; notify OCR of any changes.
2. Send all forms/paperwork received from the Contractor regarding OCR programs, to OCRForms.DOT@State.mn.us or use *DOT_OCRForms within e-mail system; OCR personnel will route it to proper OCR staff.
3. Send notice of the pre-construction meeting to both the attention of the OCR Contract Compliance Section and the DBE Program Section. Specifically, the notice of the pre-con should go directly to the DBE Specialist assigned to the region/district where the project is located.
4. Identify OCR staff (both DBE and CCS) to the contractors at the Pre-construction meeting.
5. Provide the DBE Specialist assigned to the project a copy of the construction schedule before the start of the project.
6. Send a copy of preconstruction meeting notes to assigned CCS and DBE Specialist attending the pre-con.
7. OJT Programs
    a. The Engineer may be asked to assist the CCS with questions about appropriate number of trainees, trainee performance, trainee/safety issues, etc.
    b. Review and makes appropriate payments if OJT positions are assigned to project and approval letter from OCR is in project file.
    c. Receive from Contractor original and one copy of “Certification of On-The-Job Training Hours: Federal-Aid Projects.” Mn/DOT form 21860.
    d. Forward copy of “Certification of On-The-Job Training Hours: Federal-Aid Projects” to the CCS. Mn/DOT form 21860.
8. TERO
    a. If Mn/DOT Indian Employment Tracking Form is submitted to Project Engineer, forward a copy to OCR.
9. DBE Programs
    a. Emphasize any problems with performance of DBE program to the DBE Specialist immediately.
    b. Work with DBE Specialist to review each DBE at mid-completion of the project and report to DBE specialist using Exhibit A form.
    c. Notify DBE specialist of any observations or information, including anonymous complaints pertaining to a DBE on the project, or in the DBE program.
    d. Ensure OCR receives all forms submitted by the Contractor for the DBE program in a timely manner.
        i. Contractor Payment Form
        ii. Total Payment Affidavit
10. EEO
    a. EEO 13 - Monthly Employment Compliance Reports (EEO 13)
        i. Verify that the Prime and all subcontractors working in a given month have submitted the EEO 13.
        ii. Receive, review, and forward copies of EEO 13s to Project CCS.
            1. For the month of July, weekly reports are required.
        iii. Notify CCS of difficulty in receiving EEO 13.
        iv. Submit questions or comments about EEO 13 to the CCS.
        v. Request or recommend training for a contractor.

vi. Report observations that reported numbers of minorities and/or women do not match observations on the project.

b. Relay complaints/questions from the public regarding numbers of protected class employees on the site or other EEO issues to the CCS.
c. Relay complaints about, or observations of, racial or sexual discrimination or harassment occurring on project to the CCS immediately.
d. Refer Contractors with EEO questions or problems to the CCS.
e. Refer Contractors who are not meeting their employment goals to the CCS.
f. Assist the CCS with on-site interviews:
    i. Locate site,
    ii. Identify foremen or supervisors, and
    iii. Document, in writing, observations about EEO problems.

11. Review project sites for poster display.
12. Withhold funds or implements other sanctions when notified by OCR. It is extremely important to maintain all federally/state funded projects in compliance with provisions of the law; Mn/DOT is subject to auditing by any of the federal or state agencies that fund Mn/DOT projects. Should any deviations be found and documented as a result of these audits, it opens Mn/DOT to unintended risks. No final payments on projects should be issued by Mn/DOT without a release letter from the OCR.

REPORTS

ANNUAL FEDERAL HIGHWAY ADMINISTRATION (FHWA) REPORT

OCR will issue a memorandum each May/June to the District Engineer and State Aid Engineer detailing the requirements for the annual FHWA report.

ADDITIONAL REPORTS

District staff, Engineers, Inspectors, and Office Managers may be asked to supply data on specific projects or in summary form for other reporting purposes.

OCR Forms (in bold) and their processing as applies to District Construction Offices

EEO 12 (Applies to all contractors)

- Must be submitted once per year by the prime contractor to OCR.
- Can be submitted by prime contractor through W.I.T.I. (Workforce Information Tracking Initiative)

EEO 13 (Applies to all contractors)

- All subcontractors submit to prime contractors
- All EEO 13 forms submitted monthly by prime contractor to OCR and Project Engineer
- For the month of July, prime contractors must submit forms weekly
- Can be submitted by prime contractor through W.I.T.I.

OJT (Applies only if Contract item exists with unit price in contract project proposal)
(Note: All OJT trainee assignments must be approved by OCR)

- **Trainee Assignment & Trainee Approval letters -** OCR submits to the designated Project personnel.

- **Certification of OJT Hours -** The Contractor will submit an original and a copy to the Project Engineer and a copy to OCR.

Mn/DOT Indian Employment Tracking Form (Applies to projects with Special Provisions encouraging Indian Employment) must be submitted by the prime contractor to OCR within 30 days after work is substantially complete.

Other Forms:

- **Contractor Payment Forms** to be submitted by prime contractor on a monthly basis to the Engineer and the DBE Specialist assigned to the project in the OCR within 10 business days after receiving each estimate. Upon receipt of the document, the DBE Specialist will perform a soft audit and reconcile information on the document with documentation regarding the project's construction schedule, Exhibit A Forms, and quotes gathered in the clearance process. Any issues will be communicated immediately by the DBE Specialist to the Engineer overseeing the project. No final payments can be released to the Contractor on the project without a letter releasing payment from the OCR DBE Specialist.
- **DBE Total Payment Affidavit –** Contractor to submit to Engineer and the DBE Specialist assigned to the project in the OCR at completion of the project. No final payments can be released to the Contractor on the project without a letter releasing payment from the OCR DBE Specialist. (Federal funded Projects only)
- **Veteran Owned Business Total Payment Affidavit** – Contractor to submit affidavit to Engineer and the Veteran's Preference Program Specialist at completion of the project. No final payments can be released to the Contractor on the project without a letter releasing payment from the Veteran's Preference Program Specialist. (State funded Projects only)
- **Exhibit A -** Project Engineer submits to the DBE Specialist assigned to the project at approx (1/3 – 1/2) progress of the project. Applies only when there is DBE Participation on the project.
- **Final Clearance Memo** - OCR DBE Specialist submits memo to designated project personnel.
- **Final Clearance Memo -** OCR Veterans Preference Specialist submits to designated project personnel. (State Funded projects only)

Should you experience difficulties or delays in obtaining a final clearance letter from the DBE Specialist or Veterans Preference Specialist, contact Annastacia deCarrera, DBE Program Manager/Supervisor at 651-366-3329.

CONTRACT TIME

This section of the manual is intended to help you understand the administration of Contract Time as provided for in Mn/DOT Specifications 1806 Determination and Extension of Contract Time and 1807 Failure to Complete the Work on Time.

Definitions of the following terms should be reviewed in Specification 1103-DEFINITIONS before reviewing the following section.

Calendar Day
Contract Time
Specified Completion Date
Working Day

The time allowed for completion of all work required by the Contract will be stated in the Special Provisions and that time allotment will be known as the Contract Time. For reasons of public interest, it is essential that the work be prosecuted continuously and effectively, with the least possible delay, to the end that all work will be completed within the time allowed.

Working Day Charges

This section is intended as a guide in charging working days in accordance with the standard specification[1]. The special provisions and addenda frequently alter the provisions of the specifications, thus a careful review of the applicable special provisions should be made prior to making any working day charges.

Working day charges are assessed on both working day contracts and completion date contracts. Working day charges must also be accounted for on each intermediate completion date whether it is a working day or completion date contract.

It is important that the Project Engineer charge working days in an equitable manner based on the information available at the time of charges. This information determines the contract time and will be used to assess monetary damages if the contractor does not complete the required work within the allotted time on a working day contract. It is also necessary on completion date contracts, as the information will be required in justification of any time extensions that might be warranted.

By specification, the Contractor is given time to mobilize his forces when the Department fails to approve the contract in advance of the latest date specified for beginning contract operations. This is interpreted to mean that the contractor will be given eight calendar days following contract approval to move on the project and start working (Spec. 1806.1). Therefore, working day charges will start on the contract starting date or on the eighth calendar day following contract approval (if that day is a regular working day and if the contractor can work on a progress-controlling operation)

[1] Mn/DOT Standard Specifications for Construction, 2005 Edition, Spec. 1806

whichever is the later. The date stamped on the Notice of Contract Approval by the Office of Construction and Innovative Contracting will be used in determining the date to start working-day charges, with the exception that assessment of working day charges will be made for any work conducted prior to the Contract Starting Date when the operations in progress result in a traffic restriction. See Specification 1806.

Example:
Contract Starting Date: April 10, 1994
Contract Approval Date: April 14, 1994 (stamped on Notice of Contract Approval)
First day working days may be charged: April 22, 1994

At any specific time, the progress controlling operation is that particular work which must be wholly or partially completed before the next logical operation can be effectively carried out (1803). The contractor's bar chart or critical path schedule will show which operation, or operations, is controlling.

The controlling operation may change during various stages of construction and care should be taken to base working day charges on the actual controlling operation at that time. For example, on a combination grading and base, and surfacing contract, it might be necessary to do some clearing and grubbing or install certain culverts before grading operations could be started. The preliminary work would be considered the controlling operation until this work had advanced to a stage where a continuous grading operation was possible. At the time the grading advances to a point where it is feasible to begin a continuous base operation base becomes the controlling operation. When the base construction is sufficiently advanced, the controlling operation would probably be changed to surfacing.

One working day must be charged on each day the Project Engineer determines that the contractor could have worked effectively on the progress-controlling operation for at least eight hours. If the special provisions require work schedules of other than eight hours per day, daily charges will be based on the daily work schedule required by the special provisions, not the hours scheduled by the contractor or 8 hours as provided in the standard specifications.

Working Day charges will be determined based on the Contractor's ability to effectively prosecute the progress-controlling operations, in consideration of the Avoidable and Unavoidable delay provisions. Working Day assessments will be as follows:

(1) One whole day for each Working Day during which work on the progress-controlling operations can be effectively prosecuted during 8 or more hours of the Contractor's daily work schedule.

(2) A fractional day:

(a) When work on the progress-controlling operations can be effectively prosecuted for at least 2 hours but less than 8 hours of the daily work schedule;

(b) When conditions beyond the control of the Contractor and unknown to him at the time of bidding make it impossible to prosecute work on the progress-controlling operations with full efficiency for at least 8 hours of the daily work schedule;
(c) When work can be prosecuted on one or more but not all of the progress controlled operations.

(3) No charge will be made:
(a) When work on the progress-controlling operations cannot be effectively prosecuted for at least 2 hours of the daily work schedule;
(b) On Saturdays, Sundays and legal Holidays;
(c) During the inclusive period from November 15 through April 15; except as stated in 1806.1;
(d) During periods of authorized work suspension, except when suspension is ordered for reasons of fault or negligence on the part of the Contractor.

From Specification 1806.1 (a c); Standard Specifications, Working Day charged are seen to be based upon an eight (8) hour workday. Therefore, regardless of the contractor's actual work schedule said charges should conform to the following table:

Hours Worked (At full efficiency)	Decimal-part of 8 Hr. Work Day	Correct W.D. Charge
8	1.00	1.00
7	0.875	0.9
6	0.75	0.8
5	0.625	0.6
4	0.50	0.5
3	0.375	0.4
2	0.25	0.2
1	0.125	0.0

Note that exact splits are rounded-off to the closest "even" unit (i.e., 0.75 = 0.8, 0. 25 = 0. 2).

Note also that there will be no charge when the "work cannot be effectively prosecuted for at least 2 hours of the normal working schedule". Thus, the Contractor may work 3 hours and experience a 50% delay while performing this work and the resultant working day charge would be 0.0. Likewise, the Contractor may work 9 hours and experience an 80 % delay and the correct charge would be zero. Zero since the actual productive working time would be 1.8 hours, or less than 2 hours of the normal working schedule.

The Working Day charge should be determined by the number of hours the contractor can effectively prosecute work, either actual or theoretical, on the controlling operation (See Mn/DOT 1806). If the effective hours worked are 8

hours or more, the W. D. charge must be 1.0. Example - Contractor worked 16 hours at 50 % efficiency; he theoretically worked effectively 8 hours, therefore the W.D. charge is 1.0.

The "Hours Worked" column is simple history - the Project Engineer or an authorized representative records the actual hours worked, disregarding efficiency or the Contractor's work schedule.

The "Hours Delayed" column must take into account the Contractor's schedule and his efficiency - the hours delayed must be recorded as the hours lost (either actual or theoretical) from the Contractor's schedule. The lost hours are either avoidable or unavoidable or both, and are recorded in the appropriate column for each day.

If the above procedure is followed, one of two conditions will result and will determine the procedure for establishing the effective hours worked.

Condition 1: The sum of the actual hours worked and the avoidable hours delayed equal or exceed the Contractor's daily schedule.

In this case, subtract the unavoidable hours delayed from the sum of the actual hours worked and the avoidable delays to establish the effective hours worked. The working day charge is then determined based on 8 hours per working day.

Condition 2: The sum of the actual hours worked and the avoidable hours delayed are less than the Contractor's daily schedule.

In this case, subtract the unavoidable hours delayed from the Contractor's daily schedule to establish the effective hours worked. The working day charge is then determined based on 8 hours per working day.

It is vital that a day-by-day explanation is given on the Summary of Construction Diary for each day any delay occurs.

Weekly Construction Diary and Statement of Working Days

A Weekly Construction Diary and Statement of Working Days must be submitted on all projects since this is the only record of working day charges. The Weekly Construction Diary and Statement of Working Days may be in handwritten form provided it is legible and all copies are readable. It will not be necessary to submit Weekly Construction Diary and Statement of Working Days on a weekly basis. However, one copy of the Weekly Construction Diary and Statement of Working Days will be submitted to the Office of Construction and Innovative Contracting with the “Final Contract Time Files”. (See section 5-591.510 Final Documentation Submittal / Assembly of Final Packet)

Weekly Construction Diary Forms and Statement of Working Days Forms can be computer generated and printed via the field computer application. The Engineer will furnish the Contractor with a Weekly Construction Diary and Statement of Working Days. The only instances when it will not be necessary to furnish these reports to the Contractor will be:

a. During authorized suspensions of work for which a Change in Contract Construction Status form has been submitted.

b. During ordered suspensions of work provided the ordered suspension is for reasons beyond the control of the contractor, no working days are being charged and a Change in Contract Construction Status form has been completed.

c. When liquidated damages have been waived and all work except vegetation maintenance has been completed and providing a Change in Contract Construction Status form has been completed showing the projected expiration date of the maintenance period.

d. When the contract provides that all work except maintenance and cleanup be completed by the completion date and a Change in Contract Construction Status form has been completed showing the semi-final completion date and the only work remaining is vegetation maintenance, for which the projected maintenance period expiration date is shown, and/or when waiting for warranty time to expire.

e. Projects that utilize 1803.1 CPM Special Provisions and their accompanying modifications to Special Provisions 1804,1806, and 1807 will not be required to submit a Weekly Diary or Statement of Working Days to the contractor, nor be required as part of the final package. It is still advisable to maintain project records documenting conditions that affect work in a Daily Diary or Daily Report.

In cases "c" and "d" above, a final diary covering the work performed during the maintenance or warranty period must be completed in conjunction with the final status report.

Change in Contract Construction Status

The Change in Contract Construction Status form is used to report the status of an entire construction project as well as the critical parts. A new variation of this form is generated by the field computer application. The old form is available on the Mn/DOT Website http://www.dot.state.mn.us/const/tools/documents/constatus_000.doc.

The form must also be prepared for similar changes in status for each intermediate completion date portion covered by the special provisions. When a change in status occurs in the entire contract, and/or one or more intermediate portions, on the same date, these changes can be reported on the same report provided all portions being reported are noted in the appropriate spaces.

Change in Construction Status Definitions:

- Date Notice to Start Work – date Contractor is given notice to start work, not used very often. Used when Special Provisions provide for contract operations starting not later than a specified number of calendar days after the Contractor has been notified by the Engineer to start work.
- Date Work Started - the first day the contractor or an authorized subcontractor performed any work, except moving-in. Do not report the contract starting date as given in the proposal unless the work actually started on that date.
- Date Suspended / Date Resumed – include date of suspension or resumption and state the reason for the suspension/resumption and whether requested by the contractor or ordered by the Project Engineer. Any other information that may be necessary to clarify the report should be given here. If a suspension is involved and the probable resumption date is known, it should be included.
- Date Opened to Traffic - the date the entire project is opened to traffic. This date is not necessarily the same date reported in Liquidated Damages Waived
- Liquidated Damages Waived - the date after which the Project Engineer is waiving liquidated damages because the work on the project is substantially complete and in condition for the safe and convenient use of traffic, or is available for the next stage construction without restriction.
- Semi-final Completion Date - the date on which all work, except that which is exempted in the contract time section of the special provisions, has been completed. If the Special Provisions do not exempt any work (i.e. maintenance and final cleanup) no Semi-final completion date can be declared.
- Final Completion Date - the date on which all construction and maintenance obligations of the contractor have been fulfilled. The final status report cannot be submitted until this date.

When a change occurs in the construction status of any Intermediate Completion Portion, Bridge or PCO, identify what is changing by filling in the appropriate information.

- Include Special Provision # (i.e. S-27.3) that states the work conditions for this Intermediate Completion Portion. List the Special Provision # and any addenda that may amend the Special Provision.
- Bridge # - the Bridge # affected by the recorded change
- Start Date – the date that the work of the Intermediate Completion Portion, the Bridge or the PCO begins.
- Suspended Date – the date that the work of the Intermediate Completion Portion, the Bridge or the PCO is suspended. The reason for suspension **must** be recorded in the REMARKS.
- Date Resumed - the date that the work of the Intermediate Completion Portion, the Bridge or the PCO is resumed. The reason for the resumption **must** be recorded in the REMARKS.
- Date Opened to Traffic - is the date that the work of the Intermediate Completion Portion, the Bridge or the PCO is the date that the work of the Intermediate

Completion Portion, the Bridge or the PCO is opened, or available to be opened to traffic.

- Date Completed - is the date that the work of the Intermediate Completion Portion, the Bridge or the PCO is the date that the work of the Intermediate Completion Portion, the Bridge or the PCO is completed.

At the time of Change in Status, submit form to the following specialty offices for reason(s) listed:

Mn/DOT Utilities Section: report utility construction or relocation, when covered by a utility agreement.

District R/W Engineer: submit one copy of the Change in Construction Status for the actual start date, and for when Project is Open to Traffic.

Submit one copy to the Contractor at time of each Status change.

Reports that correct a previous report should be marked REVISED REPORT in the upper right comer, with revisions explained in Remarks section.

Enter on the Status Report the date after which the Project Engineer is waiving Liquidated Damages because the work on the project is substantially completed and is at a point that it is in condition for the safe and convenient use by the traveling public, or is available for next-stage construction.

For the FINAL report, show all dates on which the status changed, thereby providing a rapid chronological resume of the Contract. The field computer application will generate a completed Final Contract Date Log.

As part of the Finals packet, submit one copy of each status report to the Office of Construction and Innovative Contracting with the “Final Contract Time Files”. (See section 5-591.500 Final Documentation Submittal / Assembly of Final Packet)

Revision of Working Day Memo

The specifications provide that in the event the Contractor fails to agree with the number of working days accounted for during the period covered by the statement, the Contractor shall so indicate in writing to the Project Engineer, showing specifically where the Contractor disagrees, and state the reasons for such disagreement. The Contractor may do so by indicating the items in disagreement, along with the reason on his copy of the working day statements, and returning it to the engineer. If the Project Engineer and the contractor fail to reach an agreement on any statement of working days, the Contractor may request an administrative review of contested charges by the Department’s Construction Engineer.

A review of working day charges is permissible only in the event that conditions, unforeseen at the time certain working day charges were made, controlled the progress and completion of the entire project.

When the Project Engineer feels a revision is justified to a previously completed Statement of Working Days, a memo must be completed setting forth in detail the reasons that justify said revision, citing the date(s) in question and showing the effect of the revisions of the Total Working Days Charged to Date.

The first Weekly Construction Diary completed subsequent to the approval of the revision memo should show the revised Total Working Days Previously Remaining in the Working Day Summary portion of the Weekly Construction Diary. For a sample Revision of Working Day Charges see Sample **"C" & C-1"** at the end of this section.

Contract Time Extensions

The specifications provide that contract time extension may be allowed under certain conditions. The granting of additional contract time is limited to the performance of extra work or increased quantities of work. When a Supplemental Agreement is written authorizing additional or increased quantities of work, additional contract time may be provided for (or no working days charged for the work) in the Supplemental Agreement. **Work Orders for Minor Extra Work may not be used for the sole purpose of adding working days to contract time or to extend completion dates**.

When a contract has overrun the contract time, additional contract time may be granted based on item overruns of contract items (see "WORKING DAY CONTRACTS" below) and/or, on an overrun in the final contract dollar value.

An automatic extension of time is granted based on an overrun of the final contract dollar value. It is processed in a similar manner for both working day and completion date contracts unless precluded by the Special Provisions for completion date contracts. This type of time extension is generally only applicable if, after allowing for previously granted time extensions, the contract time still overruns. It is computed by dividing the difference between the final contract dollar value and the original contract dollar value by the original contract dollar value.

$$\frac{\text{Final Contract \$ Value - Original Contract \$ Value}}{\text{Original Contract \$ Value}} = \text{Time Extension Adjustment Factor}$$

The original contract time in working days or on completion day contracts in calendar days or the number of working days (Monday through Friday) during the completion date period is multiplied by this factor to obtain the time extension. If the completion date contract time extension is done using calendar days the result will be in calendar days, which are used seven days per week. If the completion date contract is done using working days during the completion date period the time extension will be in workable days which are used the same as working days.

If however, a previous time extension has been given, the final contract dollar value will be adjusted to reflect this. Excluding or deducting from the final contract dollar value the following determines the "adjusted" final contract dollar value:

1. The value of any Supplemental Agreement(s) and Change Orders that either provide time for, or do not charge workings days for the included work, and/or

2. The final value of item overruns for which no working days are charged or for which a separate time extension is given. The "adjusted" original contract dollar value is determined in a similar manner except the original value of item overruns is deducted. The formula then becomes:

$$\frac{\text{("adjusted" final contract \$ value)} - \text{("adjusted" original contract \$ value)}}{\text{"adjusted" original contract \$ value}} = \text{Time Extension Adjustment Factor}$$

a. **Working Day Contracts**

The only time extension situation not covered by the charging of workdays is for overruns of contract Items that at some time during the construction operations constituted the progress-controlling operation. An extension of time recommendation based on an item overrun must include a tabulation of the days worked on the item or items (when the progress-controlling operations involved several items). This tabulation must include every calendar day that work was performed on the item, including Saturdays, Sundays and holidays in order to determine average daily production. In computing average daily production, time is based on the scheduled hours of work for the particular item. In no case can more than one (1.0) day of production be credited for each calendar day worked. The item overrun extension should be processed in a change order as this informs all interested persons of the change, and this single document eliminates the writing of several letters.

See sample **"D"** extension of Time based on item overrun at the end of the Contract Time section.

b. **Completion Date Contracts**

When computing Completion Date and Intermediate Completion Date time extensions, the following guidelines will generally be followed, however, for unique situations the Project Engineer is advised to contact the Office of Construction and Innovative Contracting.

Time extensions may be granted for reasons beyond the control of the contractor. In addition to the contract value overrun extension previously

described, the Project Engineer may grant time extensions for item overruns in the same manner as for working day contracts, as well as other delays that are accounted for in working day charges on working day contracts. All extensions of time for completion date contracts will result in an extension in workable days and will require the Project Engineer's letter of recommendation. In addition, each time extension recommendation will usually include two tabulations.

The first tabulation, Delays During the Contract Period, is concerned only with those delays that occurred prior to the contract completion date. The tabulation should show only those workdays on which a delay occurred. This must coincide with the delays listed in the Weekly Construction Diary and Statement of Working Days. (See Sample **"E"** tabulation of Delays During the Contract Period end of Contract Time section).

The second tabulation, Workable Days Chargeable After the Contract Period lists all hours worked after the Contract Completion Date. The time covered by this tabulation is from the day following the contract completion date to the semi-final completion date, actual completion date, or through the waiver of liquidated damages date whichever is earliest. (For a sample tabulation of Workable Days Chargeable After the Contract Period, see Sample **"F"** at the end of Contract Time section.)

The tabulation of "Delays During the Contract Period" is a measure of the additional time that the Contractor is entitled, and the tabulation of "Workable Days Chargeable After the Contract Period" indicates the date to which the contract may be extended.

The tabulations are prepared as follows:

1. **Date.** Tabulate only those workdays on which a delay occurred for the delay tabulation and every workday after the contract completion date for the tabulation of workable days chargeable.

2. **Progress-controlling Operation/Hours Worked.** These columns are completed from data as shown on the Weekly Construction Diary.

3. **Weather Delays.** Tabulate all weather delays shown on the Weekly Construction Diary. Twenty-three (23) percent of the total workdays in the contract that is considered the normal loss due to weather, is deducted from the total days lost due to weather to determine the time extension for weather delays.

4. **Other Delays.** All delays, which are not either avoidable or attributed to weather, will fall into the "Other" category. Note that holidays are not considered delays.

5. **Avoidable delays are those delays caused by conditions within the Contractor's control.** Avoidable delays are subtracted from any extension of time the Contractor would otherwise be granted, except for extensions based on final contract value overruns, item overruns, ordered suspension found to be unavoidable on the part of the Contractor, and late approval of the contract, which, for this purpose must be examined in two parts. The actual delay in notice is not subject to the subtraction of avoidable delays, while the time allowed for mobilization of forces and equipment following late notice of approval is subject to the subtraction of avoidable delays.

6. **Workable Days Chargeable.** This column indicates the probable working day charge for the day in question, as shown on the Statement of Working Days. Workable days are used the same as working days.

Liquidated Damages

The contractor is required to complete contract work in the time provided by the contract. A charge called "liquidated damages" is assessed the contractor, according to the specifications or special provisions, for the excess time used to complete the contract work.

The specifications provided that time extensions will be made for certain conditions over which the contractor has no control and, before any liquidated damages can be assessed, the full time extension must be computed and added to the contract time.

Every calendar day from the calculated extended completion date until the work is completed to the required extent called for in the contract, liquidated damages shall be assessed.

When the Contractor has expended all working days as provided in Specification 1806, the Engineer will assess any Liquidated Damages on the Final Voucher. The amount will be as provided in Specification 1807 unless superseded by the Special Provisions for the contract.

HOW TO ASSESS LIQUIDATED DAMAGES ON THE FINAL VOUCHER
The field computer application will give the Engineer the ability to separately assess Liquidated Damages without increasing the total "Value of Work Certified" on the Final Voucher.

Weekly Construction Diaries

Weekly Construction Diary forms can be generated by the field computer application, and are the most desirable format to use. However, various computer generated Weekly Construction Diary forms that have been created in individual District Offices may also be used. The various versions may have some slight variations in layout. Any forms so created and now in use, have been reviewed by OCIC and are considered acceptable. All such forms may be used until such time a standard form may be created and implemented by OCIC. (See Sample **"A" & "A-1"** Weekly Construction Diary & Statement of Working Days at the end of this section).

All Weekly Construction Diary forms selected for use by the Engineer will be subject to the following definitions:

Project Information:
The type of contract, number of working days or completion date and information on intermediate completion times are to be reported as found in the special provisions of the contract.

Contract Start Date**:**
The Contract Starting Date is the latest date on which the contractor can start work as provided by the specifications and special provisions. This is the first date the Project Engineer must charge working day assessments unless work started prior to the Contract Starting Date result in traffic restrictions.

Actual Starting Date:
The actual starting date is the first day any work is performed on the project. It is also the date reported on the notice of Change in Contract Construction Status form.

Progress Controlling Operations of Major Types of Work:
The Progress Controlling Operation (PCO) is the major work and controlling operation during the week covered by the report. This will change during the term of the contract. When the contractor's schedule and work force varies during the week, enter the minimum and maximum number of hours and men scheduled for each operation reported. This information is intended as a guide in determining the workdays and the contractor's efforts; therefore, reasonable estimates should be used rather than detailed extractions from the contractor's payrolls.

Weather Conditions:
Weather conditions reported should be as factual as possible and all conditions that might affect progress on the project should be reported. For example, wind or humidity conditions may be affecting the rate of drying. Weather conditions

such as temperature or amount of rainfall taken from newspapers, radio and television reports do not necessarily reflect weather conditions on the job site.

Hours Worked:
The hours worked column is used to report the hours actually worked on each of the operations for that week. Designate the Progress Controlling Operation(s) for each day.

Hours Delayed
The hours delayed column is used to report delays in the progress of the operations by recording the difference between the hours worked and the hours scheduled for each operation.

Avoidable Delays (A) & Unavoidable Delays (U)
Delays are classified as Avoidable (A) if they are due to the Contractor's negligence and can be avoided, or, Unavoidable (U) if the delays are through no fault of the contractor.

Holiday charges:
No working days are charged on legal holidays of the State regardless of whether the contractor works or not. As this is neither an avoidable nor an unavoidable delay the 0.0 workday charge is explained by placing the word "HOLIDAY" in the hours delayed line for that day.

Recording Working Days:
One working day or a fraction thereof is recorded for each day the Contractor is able to work on the controlling operations within the limits of the specifications and special provisions.

Remarks and Daily Explanations:
Summarize the weekly accomplishments, problem areas and overall progress of the work. Report, as they occur, all appropriate dates such as suspension and resumption dates, date liquidated damages started, dates of major traffic changes, date liquidated damages are waived and appropriate completion dates. Finally, report any revisions of the number of working days because of Supplemental Agreements, Change Orders and correction of working day charges as these changes occur.

Working Day Summary
Enter "Total Working Days Charged This Week" and subtract these figures from "Total Working Days Previously Remaining" to obtain the "Total Working Days Remaining to Complete Work". This portion of the form need not be completed for completion date contracts.

Contractors and Subcontractors Who Worked This Week:
To complete this section, list the firm names of the prime contractor and all authorized sub-contractors who worked during the reporting period.

Daily Comments and Explanation of Delays:
In this portion, the Project Engineer or an authorized representative should make remarks covering the overall progress of the work. Any inadequacies in the contractor's forces or equipment, proposed plan changes, and any, other than routine, instructions given to authorized representatives of the contractor, should be reported. Following this general summary, comments should be made showing the location where major operations were performed, together with any other appropriate information relative to other than ordinary construction procedures or methods used in performing the work. This section is also to be used to explain any delays, both authorized and unauthorized, which have been reported earlier in the report. When bridge construction is a part of the contract, brief comments on the status of the work should be included. A statement that all work except maintenance of vegetation has been completed should be included when applicable. If more room is needed, use a plain sheet of paper and attach it to the report.

Sample "A" Weekly Construction Diary & Statement of Working Days

Mn/DOT TP-02120-02 (10/96) MINNESOTA DEPARTMENT OF TRANSPORTATION

WEEKLY CONSTRUCTION DIARY AND STATEMENT OF WORKING DAYS

REPORT NO. 25 FOR THE WEEK ENDING SATURDAY 08/11/2002 180 Working Day

PROJECT INFORMATION
(LOW) S.P. NO.: 0000-0000
CONTRACT NO.: S01294
T.H. NO.TH 56
FED. PROJ. NO.: STATE FUNDS
CONTRACTOR: REEMER CONSTRUCTION
PROJ. ENGR.: JOSEPH JOHNSON
CHIEF INSPECTOR:
TYPE OF WORK:
GRADING, GRAVEL BASE, PLANT MIXED BITUMINOUS A BRIDGE 0001
LOCATION:
E. JCT. T. H. 200 TO N. JCT. T. H. 135

CONTRACTORS AND SUBCONTRACTORS WHO WORKED THIS WEEK	
DENNY'S CONSTRUCTION	G. GASTON CO.

	PROGRESS CONTROLLING OPERATIONS OR MAJOR TYPES OF WORK	HOURS SCHEDULED
1	COMMON EXCAVATION	10
2	SWAMP EXCAVATION	10
3	BRIDGE	10

			TEMP		HOURS WORKED			HOURS DELAYED					WORK DAYS	
DAY	DATE	WEATHER CONDITIONS	HI	LOW	(1)	(2)	(3)	Av (1) Un	Av (2) Un	Av (3) Un			CHRD	PCO
SUN	08/05/2002	CLOUDY	72	60	S								0.0	
MON	08/06/2002	PARTLY CLOUDY	75	61	M	10.0	10.0		10.0				0.0	1
TUE	08/07/2002	PARTLY CLOUDY	73	65	T	6.0	10.0	8.0		7.0		2.0	0.4	1
WED	08/08/2002	CLEAR	79	62	W	10.0	10.0	8.0				2.0	1.0	1
THU	08/09/2002	RAIN	77	64	T	8.0	10.0	8.0		10.0		2.0	0.0	1
FRI	08/10/2002	CLOUDY RAIN	77	64	F	6.0				10.0			0.0	1
SAT	08/11/2002				S								0.0	

CONTRACT AS A WHOLE (EXPLANATION OF DELAYS AND REMARKS)

WORKING ON EMBANKMENT CONSTRUCTION STATION 100 TO 172. MUCK EXCAVATION FROM STATION 145 TO 150. BRIDGE CONSTRUCTION: COMPLETED PIER 1.

Signed Joeseph Johnson

Title Proj. Engineer

WORKING DAY SUMMARY:	
Previous Working Days Remaining	180.0
Working Days Charged This Week	1.4
Total Working Days Remaining	178.6

Distribution: 2 Contract Administration
1 Contractor
1 PE / ADE

See Contract Administration Manual 5-591.340 Series for Instructions Relative to the Preparation of This Report

Sample"A-1" Weekly Construction Diary & Statement of Working Days (Cont)

WEEKLY CONSTRUCTION DIARY AND STATEMENT OF WORKING DAYS

REPORT NO. 25 S.P. NO. 0000-0000 FOR THE WEEK ENDING SATURDAY 08/11/2002

DAILY REMARKS AND COMMENTS

Sunday 08/05/2002

Monday 08/06/2002
PCO IS COMMON EXCAVATION. U-DELAYS TO WEEKEND RAINS CAUSING WET CONDITIONS. WORKED ON SWAMP EXCAVATION AND FORMING PIER 1.

Tuesday 08/07/2002
PCO IS COMMON EXCAVATION. CONTRACTOR WORKED ON COMMON EXCAVATION 6 HOURS AT 50% EFFICIENCY DUE TO WET CONDITIONS. 4 HOURS U-DELAY DUE TO RAIN SHUT DOWN WORK. EXCAVATION FROM STA. 100+000 TO 108+000. MUCK EXCAVATION AT STA. 145 TO 146. BRIDGE - FORMING PIER 1.

Wednesday 08/08/2002
PCO IS COMMON EXCAVATION. CONTINUED COMMON AND SWAMP EXCAVATION. BR. - FORMING PIER 1.

Thursday 08/09/2002
PCO IS COMMON EXCAVATION. CONTINUED COMMON AND SWAMP EXCAVATION AT 0% EFFICIENCY. NO WORKING DAY CHARGED DUE TO RAIN.

Friday 08/10/2002
PCO IS COMMON EXCAVATION. CONTRACTOR CONTINUED COMMON EXCAVATION TO STA. 175. WORKED 6 HOURS AT 0% EFFICIENCY DUE TO WET CONDITIONS AND SHUT DOWN DUE TO RAIN. NO OTHER WORK PERFORMED DUE TO RAIN.

Saturday 08/11/2002

What the **Controlling PCO** is for each day has to be designated either on the diary or in the daily remarks and comments.

EXAMPLE : Method of computing working day charge on Tuesday 8/7/02

Contractor Schedule			10 hours
Worked			6 hours
U-delay			4 hours (Shut down delay)
U-delay	50% X 6 hours	=	3 hours (Efficiency delay)
U-delay Total 4 + 3		=	7 hours

The **hours worked** plus the **hours avoidable** are less than the Contractors schedule (6 + 0) is less than the Contractors schedule of 10 hours making this Condition 2 (See Construction Manual Page TIME-5 and TIME-6)

10-7 = 0.4 Working Day Charge (See Construction Manual Page TIME-4)
8

Sample "B" Change in Construction Status Report

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CHANGE IN CONTRACT CONSTRUCTION STATUS
CONTRACTOR NOTIFICATION

Low SP Number: 1905-30 Contract Number: S07019 Engineer/ Supervisor: Dennis Springer
Contractor: Plucky's Road Repair Phone: (651) Ext:
Mn/DOT District: M
Chief Inspector:

Amount of Contract: $1,329,216.77 Date Approved: 03/15/07

Class of Work: MICRO-SURFACING

Location: TH 52, FROM 1093 FEET NORTH OF CORD 86 TO 1753 FEET NORTH OF CORD 42

This serves as notification of a Change in this Project's Construction Status.

Area of Project Affected: **Contract as a Whole**

Contract Event: **Suspension** Date: 08/13/07

Reason: Spec. 1501

Comments: Road needed for detour due to weather related washouts on other routes - public interest/safety.

Project Engineer/ Supervisor: _____
Signature

Sample "C" Revision of Working Day Charges Memo

Department: District # / Office Location — STATE OF MINNESOTA **Office Memorandum**

TO: Joel Williams, Contract Administration Engineer, Office of Construction & Innovative Contracting — Date: _____

From: Name, Project Engineer — Phone: _____

Subject: S.P._____
Contract # _____
Revision of Working Days

The Engineer has determined that the original working day charges did not allow sufficient credit, through reduced charges, for the time the contractor was delayed by the necessity to reorder water main parts on the above referenced project.

The appropriate dates and data relative to this contract are as follows:

Contractor: _____

04-26-2002	Approval Date
05-02-2002	Contract Start Date
05-03-2002	Actual Start Date
100 WD	Contract Completion Date
11-25-2002	Semi-Final Completion Date
12-02-2002	Final Completion Date

Because the inplace water main was of a different diameter than shown on the plans, the Contractor had to reorder some fittings. This delayed the Contractor 4.1 Working Days by holding up the grading operations while the water main was being installed. At the time of bidding, the Contractor scheduled the water main work to be complete before the grading would have been held up in the area in question. During the time the water main work was delaying the grading operation, the Progress Controlling Operation was erroneously attributed to the water main work as documented by the Weekly Construction Diaries.

Based on the above facts, the following revisions to the original working day charges are recommended:

Page 1 of 2

Sample "C-1" Revision of Working Day Charges Memo, (cont.)

Tabulation of Revised Working Day Charges

Note: Only days on which the original charges are to be revised are shown.

Date	Progress Controlling Operation	Hours Worked On PCO	Total Hours Worked	Original Charge	Revised Charge	Remarks
05/22/02	Grading	0	10	1.0	0.0	Worked on Water Main
05/23/02	Grading	0	10	1.0	0.0	Worked on Water Main
05/24/02	Grading	0	10	1.0	0.0	Worked on Water Main
05/27/02	Grading	0	5	0.6	0.0	Rain
05/28/02	Grading	0	10	1.0	0.5	Completed Water Main at noon.
Totals				4.6	0.5	

Total reduction of Working Day Charges: 4.6 – 0.5 = -4.1

Weekly Summary of Working Days should be revised as tabulated above on Report numbers 4 and 5.

cc: Contractor
Office of Construction & Contract Administration / Time Section
District Engineer
Project File

Page 2 of 2

Sample "D" Extension of Time Based on Item Overrun

SP _____ Date: _____
Contract # _____
Documentation for Change Order ___*

Calculation of extension of time on the basis of the combined overrun of bituminous resurfacing items:

Final Quantity of Bituminous Mixtures	36,467 Tons
Planned Quantity of Bituminous Mixtures	34,051 Tons
Overruns of Bituminous Mixtues	2,416 Tons

Number of days worked on bituminous resurfacing = 20.9 (see below)
Average Production = 36467 tons = 1744.8 Ton/Day
20.9 days

Extension of time allowable = ton overrun/average production =
2,416 = 1.38 or 1.4 Workable days extension of Time allowable
1,744.8

Number of days worked on bituminous resurfacing as shown by the Weekly Construction Diaries & Statement of working Days.

DAY	DATE	HOURS SCHED	HOURS WORKED	DAYS WORKED	DAY	DATE	HOURS SCHED	HOURS WORKED	DAYS WORKED
W	9-2-98	10	5	0.5	**T**	10-13-98	8	6 ½	0.8
W	9-9-98	9	5 1/2	0.6	**W**	10-14-98	8	7	0.9
TH	9-10-98	9	9	1.0	**TH**	10-15-98	8	7	0.9
F	9-11-98	9	9	1.0	**F**	10-16-98	8	7	0.9
M	9-14-98	9	3	0.3	**M**	10-19-98	8	8	1.0
W	9-16-98	9	8	0.9	**TH**	10-22-98	8	6	0.8
F	9-18-98	9	9	1.0	**M**	10-26-98	8	5	0.6
M	9-21-98	9	6	0.7	**W**	10-28-98	8	6 ½	0.8
T	9-22-98	9	8	0.9	**TH**	10-29-98	8	8	1.0
W	9-23-98	9	4 ½	0.5	**TH**	11-5-98	8	8	1.0
F	9-25-98	9	1	0.1	**F**	11-6-98	8	8	1.0
M	9-28-98	9	9	1.0	**S**	11-7-98	8	1 ½	0.2
T	9-29-98	9	9	1.0					
M	10-5-98	8	6 ½	0.8	TOTAL DAYS ON BITUMINOUS RESURFACING = 20.9				
M	10-12-98	8	5 1/2	0.7					

* Change Orders are no longer required but are an excellent documentation tool.

Sample "E" Delays During the Contract Period

DELAYS DURING THE CONTRACT PERIOD S.P._____

From the CONTRACT STARTING DATE = June 4, 2001 to the CONTRACT COMPLETION = June 7, 2002

DATE	PROGRESS CONTROLLING OPERATION	HOURS WORKED ON C.O.	TOTAL HOURS WORKED	DELAYS – IN WORK DAYS			EXPLANATION OF DELAYS
				WEATHER	OTHER	AVOIDABLE	
6-4-01	Grading	0	0		1.0		Late approval of Contract
6-5	"	0	0		1.0		" " " "
6-6	"	0	0		1.0		" " " "
6-7	"	0	0		1.0		NOTICE OF APPROV.DATE
6-8	"	0	0		1.0		10 Calendar Days allowed for mobilization of forces
6-11	"	0	0		1.0		
6-12	"	0	0		1.0		
6-13	"	0	0		1.0		
6-14	"	0	0		1.0		
6-15	"	0	0		1.0		
6-18	"	0	0			1.0	Contractor not on Project
6-19	"	0	0			1.0	" " " "
6-20	"	0	0			1.0	" " " "
6-21	"	0	0			1.0	" " " "
6-22	"	0	0			1.0	" " " "
7-18-01	"	0	8	1.0			Rain – Too Wet to Work
7-19	"	4	8	1.0			Rain AM – Too Wet PM
7-20	"	8	8	1.0			Drying Grade – 0% eff.
7-23	"	8	12	0.5			Drying Grade – 50% eff.
8-21-01	"	0	0	1.0			Rain all Day – No Work
8-22	"	8	8	0.7			Drying Grade – 30% eff.
10-1-01	Base	8	8	0.5			Rain over Weekend – 50% efficiency
10-2	"	0	4	1.0			Drizzle – no base work
10-3	"	8	8	0.3			Wet conditions – 70% eff.
11-12-01	"	0	0			1.0	Contractor not on Project
11-13	"	0	0			1.0	" " " "
11-19	Bituminous	0	8		1.0		Strike by Operators
11-20	"	0	8		1.0		" " "
11-21	"	0	0		1.0		" " "
11-30	"	0	0	1.0			Rain all day
SUSPENDED 11-15-2001 AND RESUMED 05-06-2002							
5-14-02	Lighting	0	8		1.0		Promised delivery date of Light Standards (1)
5-15	"	0	8		1.0		" " " "
5-16	"	0	8		1.0		" " " "
5-17	"	0	8		1.0		" " " "
5-20	"	0	8		1.0		" " " "
5-21	"	4	8		0.5		Stds. Delivered at noon
5-28	"	0	0	1.0			Thundershowers
5-29	"	0	0	1.0			Extreme wet conditions
				9.0 (2)	15.5	7.0	

(1) Supplier was unable to meet promised delivery date for reasons beyond his control.

(2) Normal weather –loss expectancy (23% of the 149 Work Days in the contract period, excluding authorized suspensions) = 34 work days, therefore, no extension of time is allowable for delays caused by inclement weather.

Sample "F" Workable Days Chargeable After the Contract Period

WORKABLE DAYS CHARGEABLE AFTER THE CONTRACT PERIOD

S.P._____

From the day following the CONTRACT COMPETION DATE OF June 7, 2002 through the WAIVER DATE of July 23, 2002

DATE	PROGRESS CONTROLLING OPERATION	HOURS WORKED ON C.O.	TOTAL HOURS WORKED	WORKABLE DAYS CHARGEABLE	EXPLANATION OF DELAYS
6-10-02	Lighting	8	8	1.0	
6-11	"	8	8	1.0	
6-12	"	8	8	1.0	
6-13	"	4	4	0.5	Rain in PM – Too wet to work
6-14	"	8	8	1.0	
6-17	"	8	9	1.0	
6-18	"	0	8	1.0	No Work on Controlling Oper
6-19	"	0	8	1.0	" " " " "
6-20	"	0	8	1.0	" " " " "
6-21	"	0	8	1.0	" " " " "
6-24	"	0	9	1.0	" " " " "
6-25	"	8	8	1.0	
6-26	"	8	8	1.0	
6-27	Guard Rail	8	8	1.0	
6-28	"	8	8	1.0	
7-1-02	"	8	8	0.7	Rain/drizzle – 70% efficiency
7-2	"	8	8	1.0	
7-3	"	8	8	0.5	Heavy pre-holiday traffic 50% efficiency
7-4	"	0	0	0.0	Holiday
7-5	"	0	0	0.0	No work permitted by spec
7-8	"	0	0	1.0	Contractor not on project
7-9	"	8	8	1.0	
7-10	"	8	8	1.0	
7-11	"	8	8	1.0	
7-12	"	8	8	1.0	
7-15	"	8	8	1.0	
7-16	"	8	8	0.5	50% eff – extreme high temps
7-17	"	8	8	0.5	" " " " "
7-18	"	8	8	0.5	" " " " "
7-19	"	8	8	0.7	70% " " " "
7-22	"	8	8	1.0	
7-23	"	8	8	1.0	Completed Guard Rail Work
TOTAL WORKABLE DAYS CHARGEABLE				26.9	LIQUIDATED DAMAGES WAIVED AFTER 7-23-02 in accordance with Change Order No. 2

Sample "G" Final Contract Date Log

FINAL CONTRACT DATE LOG			
State Project : 0906-41	**Contractor:** Reemer Construction Inc.		
	Contract as a Whole	**Intermediate S-**	**Intermediate S-**
Date of Letting	10/25/96		
Notice of Approval Date	11/26/96		
Contract Start Date	5/19/97		
Actual Start Date	12/16/96		
Suspension of Work Date.	3/5/97, 12/10/97		
Resumption of Work Date	4/14/97,4/27/98		
Contract Date of Completion	150 W.D.		
Extended Date of Completion	185.7 W.D. (1)		
Liquidated Damages Waived	7/17/97		
Working Days Expended	154.6 W.D.		
Semi-Final Completion Date			
Working Days Expended			
Final Completion Date	11/10/98		
Working Days Expended			
Monetary Deductions (Per 1807)			
Liquidated Damages			
TOTAL DEDUCTIONS	None		

NOTES: (1) Extension of Time per Specification 1806.2
Final Contract Value = $3,330,559.35 = 1.238% x 150 W.D. 185.7 W.D.
Original Contract Value = $2,690,198.02

COMPILED BY _____ **DATE**_____

Sample "H" Final Contract Time Certification Report

FINAL CONTRACT TIME CERTIFICATION REPORT

S. P. Number : 1905-30
Contract No. : S07019
Contractor : Plucky's Road Repair

☑ No Liquidated Damages will be assessed on this Contract.

☐ Liquidated Damages will be assessed on this Contract in the amount of
$_____

☐ No Monetary Deductions for Contract Time will be assessed.

☑ Monetary Deductions for Contract Time will be assessed in the amount of
$ 2,500.00

☑ No Time-based Incentives will be assessed on this Contract.

☐ Time-based Incentives will be assessed on this Contract in the amount of
$_____

All necessary supporting documentation to verify the statements above is included with the Final Records in the Special Requirements and Contract Time files. This supporting documentation includes, but is not limited to, Weekly Construction Diaries, Construction Status Reports, revision of Work Day memos, Time Extension Letters, Item Over-run Time Extension Letters, and any calculations that effect Contract Time.

Verification Statement: I hereby certify that the Contract Time Portion of this project has been administered in accordance with the provisions of Standard Specifications 1806 & 1807 and as stated in the Special Provisions for this Contract. All extensions of Contract Time, if any, have been computed and considered in this assessment.

_____ Date _____
Project Engineer/Supervisor

Definitions of the following terms should be reviewed in Specification 1103 before reviewing the following section:

CHANGE ORDER
EXTRA WORK
MINOR EXTRA WORK
SUPPLEMENTAL AGREEMENT
WORK ORDER
WORK ORDER - MINOR EXTRA WORK

Conditions of the project may exist that will not necessarily be those anticipated when the plans and provisions were prepared. Certain omissions, errors or plan changes will need correction before the project is properly completed. This section of the manual is intended to furnish instructions on documents and procedures used to implement these changes. The documents are: Change Order, Work Order - Minor Extra Work ("Work Order - MEW") and Supplemental Agreement. See CONCHNG-20 for schematic view of these options.

Change Orders

The Engineer may issue a Change Order to document a contract change that is permitted by Special Provision, Plan or Specification. Change Orders are not mandatory but are recommended as tools for documentation. In the absence of a Change Order, all of the required documentation may be included on the applicable Item Record Account(s) or by separate record. In any case, all changes must have a clear and logical audit trail.

Only a Supplemental Agreement can revise the terms of a contract. See the Supplemental Agreement portion of this manual for further information.

The following are some (but not limited to) typical uses of Change Orders

- Revising the method of measurement as per Specification 1901 "Measurement of Quantities"

- Waiving liquidated damages after the project is in condition for safe and convenient use by the traveling public, or is otherwise available for next-stage construction without restriction

- Documenting unacceptable work or materials

- Documenting bonus payments to the Contractor for exceeding established pavement ride quality, quality standards, or early completion as provided in the Contract

- Documenting changes in the original plan (P) quantity due to re-measurement or re-computation. This is especially advised when revising a (P) quantity that is part of a Municipal Agreement.

- Documenting substitution of materials

- Documenting substitutions of methods or equipment at the Contractors request

- Documenting changes resulting from adoption of new standards, new instructional memoranda, or recommendations from Central Office

- Documenting increased or decreased quantities

- Documenting minor grades changes, sub-grade excavation changes (such as adding, lengthening, or deepening), and structure excavation changes (such as enlarging or deepening)

- Documenting item overruns in accordance with Specification 1806.2

- Documenting time extensions for late contract approval for completion date contracts

- Documenting final pay Quantities for landscape items

If any of the above changes result in a modification of contract time, a Change Order is recommended to document such modifications.

Contract cost overruns resulting from Change Orders must be encumbered according to the instructions contained in the Fund Encumbrance portion of this manual.

Whenever a Change Order affects items in a group that is funded wholly or in part by a County or Municipality, the Engineer must inform the Office of Technical Support, Municipal Agreements Unit promptly so that they can update the Cooperative Agreement associated with the project.

Sample Change Order language is available on the Construction Tools Website.

Work Order-Minor Extra Work (Work Order-MEW)

A Work Order-MEW is a document used by the Engineer or Project Supervisor directing the Contractor to perform "minor extra work" in situations where there is no contract unit price for the work or work item. This form is available on the Internet at http://www.dot.state.mn.us/const/forms/2460-12-92.pdf or by calling the Supplemental Agreement Specialist at 651-366-4227. The Work Order-MEW is not an agreement and does not authorize payment. Specification 1403 "Extra Work" authorizes payment for

minor extra work necessary to complete the Contract as originally intended. The Special Provisions for each contract will state the maximum dollar allowed per work order occurrence. **Work Orders - MEW may not be used for the sole purpose of adding working days to contract time or extend completion dates.**

Payment for minor extra work may be made by negotiated unit price or by force account. Approval for negotiated unit prices from the Mn/DOT Engineering Cost Data and Estimation Unit (Mn/DOT Estimating) is mandatory on any Work Order where the total of the negotiated items exceed $5,000.00.

All Work Orders that specify Force Account as the Basis of payment, regardless of cost, require approval of the equipment rental rates from the Mn/DOT Estimating Unit.

Each District's or Division's Construction ADE may choose to have approval of negotiated unit prices where the total of the negotiated items is less than $5,000.00. If a district opts to use this method, the price justification for each negotiated item, where the total of the negotiated items is less than $5,000.00, is the responsibility of that District or Division. The Mn/DOT Estimating Unit is willing to review and give approval on any negotiated Work Order item regardless of any of the above cost considerations.

Minor Extra Work shall not exceed $50,000 per individual occurrence. The Construction ADE (State Aid ADE in the case of State Aid projects) must sign all Work Orders that have a value greater than $25,000 per individual occurrence.

Each minor extra work occurrence may use any combination of methods of payment as may be provided by the Contract. However, each method of payment within the same Work Order-MEW will have a separate Item Record Account for each method used on every voucher pay group involved. An Item Record Account must be generated for every group affected by the Work Order-MEW.

Work Orders-MEW are numbered consecutively. They need not be written in formal language or typed. They must be legible, clearly state work to be accomplished, and include a total estimated cost. A detailed estimate of cost may be included on each Work Order-MEW. However, it is not mandatory. The total estimated cost must contain all items where the Engineer, Contractor, and when appropriate, the Mn/DOT Estimating Unit have agreed upon the unit price.

Contract cost overruns resulting from Work Orders- MEW must be encumbered in accordance with the Fund Encumbrance portion of this manual.

Whenever a Work Order-MEW affects items in a group that is funded wholly or in part by a County or Municipality, the Engineer must inform the Office of Technical Support, Municipal Agreements Unit promptly so that they can update the Cooperative Agreement associated with the project.

Sample Work Order language is available on the Construction Tools Website.

Supplemental Agreements

A Supplemental Agreement is a legal and binding document that modifies the original contract as executed and approved. Supplemental Agreements must be written and executed for contract modifications and for extra work that is not considered minor, or in the absence of allowable specification deviations, price schedules and adjustments, or modifications provided for in the Contract.
Sample SA Language is available at the Construction Tools Website.

The following are changes that must be made by Supplemental Agreement:

1. Performance of "Extra Work" as defined in Specification 1403:
2. Alterations in special provisions and specifications (including Contract Time);
3. Experimental work or procedures (approval required by the Research Implementation Coordinator in the Mn/DOT Office of Research Administration);
4. Revisions in the structural section above the sub-base;
5. Alterations in the scope of the contract or character of the work;
6. Major revisions in geometric design of the mainline roadway, ramps, frontage roads, or crossovers and additions, deletions or;
7. Additions, deletions or relocations of bridges or other structures that would affect the functional scope and intent of the approved design.

When new policies or changes in standards require modifications on active Contracts, the Office of Construction and Innovative Contracting (OCIC) may write draft boilerplate Agreements. The OCIC personnel will distribute these Agreements to the Resident Offices.

Whenever a Supplemental Agreement affects items in a group that is funded wholly or in part by a County or Municipality, the Engineer must inform the Office of Technical Support, Municipal Agreements Unit promptly so that they can update the Cooperative Agreement associated with the project.

A. Standard Procedure

The following is the Standard procedure in preparing Supplemental Agreements.

1. A project change, meeting one or more of the Supplemental Agreement criteria listed above, needs to be resolved. The Engineer and the Contractor discuss and consider possible solutions and initiate price negotiations.

2. The Engineer analyzes the possible solutions and solicits recommendations from District or Central Office personnel as needed. The Engineer works with the Contractor and the Mn/DOT Estimating to determine justifiable unit prices.

3. Depending on the complexity of the agreement, the Engineer meets with one or more of the following to choose the best solution to the problem: District Engineer, Assistant District Engineer, Resident Engineer or other delegated authorities.

4. The Engineer writes the Supplemental Agreement. A Supplemental Agreement is composed of four general areas. The first area ("Header") covers administrative information about the Contractor and the project. The second area ('Whereas") covers the background information for the Agreement. The third area ("Now, Therefore") clearly states the obligations for the Contractor and Mn/DOT to solve the problem. The fourth ("Estimate of Cost") reiterates the method of payment detailed in the "Now, Therefore" and establishes any change in contract value. The following is an outline of what should be addressed in the Agreement:

In the Header' portion:
- Contractor Name/Address
- State Project Number
- State Contract Number
- Federal Project Number (if applicable)
- Project Location
- Supplemental Agreement Number

In the “Whereas" portion:
- General Project Description
- Specific Problem/Change
- Determined Solution

In the "Now, Therefore" portion:
- Contractors Responsibility
- Mn/DOT's Responsibility
- Applicable Specification/Revision
- Method of Payment
- Method of Measurement
- Contract Time Provisions
- Appropriate Disclaimer Paragraph*

In the "Estimate of Cost" portion
- Increased Contract, Negotiated and Force Account items
- Decreased Contract Items
- Negotiated Credits
- Distribution of Funds

*While it is preferable to keep the disclaimer in the agreement, Contractors sometime elect to cross out this paragraph. The Office of Construction and Innovative Contracting

(OCIC) must review the validity of this change for each project. The Contractor may not cross out the disclaimer if the Agreement is a claim settlement, nor if the Agreement is being executed at the request of the Contractor.

The OCIC has a variety of boilerplate agreements available and personnel assigned to answer specific questions about Supplemental Agreements.

The most current Supplemental Agreement forms are available through the OCIC website at http://www.dot.state.mn.us/const/forms/SA.doc or by calling the Supplemental Agreement Technician at 651-366-4227. The OCIC encourages the use of the most recent form.

5. The Engineer has the Assistant District Engineer or Resident Engineer review the Supplemental Agreement. A draft copy of all agreements that are not routine in nature should be sent to the OCIC Supplemental Agreement Technician for review.
   Note: The draft copy may be sent using GroupWise, e-mail or fax. The GroupWise address is Karen Peters; the e-mail address is karen.peters@dot.state.mn.us. The fax number is 651-366-4251. GroupWise and e-mail are recommended because after review and modifications, the Agreement may be printed and ready for signing without the need to retype the Agreement. Drafts can be sent using Microsoft Word.

6. After making the final revisions, the Agreement is approved and signed by the Engineer and the Contractor. A transmittal letter that includes justification of the SA is added and sent to the Assistant District Engineer. All parties must sign the last page of the Agreement. However, all the pages of the Agreement may be signed if desired. The original Supplemental Agreement and copy of transmittal letter is sent to the Office of Construction and Innovative Contracting.

All Supplemental Agreements must include a transmittal letter that includes the supplemental agreement category and the justification of entitlement, impact, cost and time extension.

A valid transmittal letter is required prior to processing any standard agreement for payment. A sample Transmittal letter form is available on the web at: http://www.dot.state.mn.us/const/tools/documents/sajustificationltr.doc

Supplemental Agreement Category is the primary reason for the SA. See Explanation of Supplemental Agreement Reason Categories on CONCHNG-25 or at http://www.dot.state.mn.us/const/tools/docs/sareasondesc.pdf.

Entitlement addresses why the contractor is entitled to an adjustment (or DOT entitled to a credit). Is there a change? Who is responsible for the change?

Describe the change encountered. It is very important to cite the portion of the contract (spec, provisions) that supports the entitlement. If the decision is made to change the scope of a project with a Supplemental Agreement, district management needs to aware of it and approve it. A statement should be included specifically addressing the scope change with a concurrent statement signed by District Management and documented in the transmittal.

Change – The difference between the contract requirements at the time of bid and the actual requirements imposed during construction.

- **Types of Contract Changes**
  - **Directed Changes**
    - Initiated by the owner
    - Understood by the owner to be a change
      - Examples, including, but not limited to:
        - Alteration of the work (Mn/DOT 1402.1)
        - Suspensions of the work (Mn/DOT 1402.2B)
        - Extra work (Mn/DOT 1403 & 1904)
        - Eliminated work (Mn/DOT 1905)

  - **Constructive Changes**
    - Results from owner's actions or inactions
    - Not easily recognized: often at the heart of a dispute
      - Examples, including, but not limited to:
        - Differing site conditions (Mn/DOT 1402.2A)
        - Significant changes in the character of the work (Mn/DOT 1402.2C)
        - Errors and Omissions (Mn/DOT 1504)
        - Joint Occupancy (R/W) (Mn/DOT 1718)

Impact to the project schedule needs to be addressed. Is the progress controlling operation impacted? If so, is the delay avoidable or unavoidable? How might the contractor's efficiency be impacted? Will the contractor accelerate? Describe how any time extensions will be determined.

Cost estimate of the agreement should be justified and approved by Mn/DOT Estimating. Include a breakdown of the basis of any negotiated price. For example, the negotiated unit price per cubic yard includes a material price, price to haul, price to place plus markup. Statements comparing the negotiated price to average bid prices or to original request from contractor may be added. For Force Account work, indicate the estimate for labor, equipment and materials separately.

Include any other information that may indicate why this SA is in the public interest. Some of these may not be part of the written agreement but may be important nonetheless such as commitments made by the Department, political considerations, potential claims, etc.

7. OCIC will review and approve the Supplemental Agreement before routing the agreement through the following required areas: Mn/DOT Budget Office and Contract Management, as delegated by the Department of Administration. The following are additional areas that review or approve the Supplemental Agreement as needed: Time Extension, Cost Data and Estimation, and Claims. See section 5-591.120 for further discussion of pre-approval of SAs for Federal Funded projects.

8. When Contract Management has approved the Supplemental Agreement and the funds have been encumbered, the Agreement is considered fully executed.

After the SA is fully executed:

OCIC enters the necessary Agreement information into a Contract Management System (CMS).

CMS transfers the data to a District file queue.

District personnel can then download the file to a computer disk and distribute the disk to the appropriate field personnel for uploading into FieldOps.

OCIC sends a scanned email copy to the District Office. The District Office is requested to forward a copy to the ADE and District Design. However, the computer queue with approved funding may precede the fully executed Agreement. It is advisable to periodically check the queue for Agreement information. The OCIC Automation Section should be contacted for further information on appropriate procedures.

9. Once the information is loaded into FieldOps the Engineer can then pay the contractor for extra work that has been performed and accepted or apply credit as indicated in the Supplemental Agreement.

B. Expedited Supplemental Agreements Part A and Part B

When a project change occurs that requires extra work to be performed immediately or prior to execution of a Supplemental Agreement using the "Standard" procedure, an expedited Supplemental Agreement consisting of a Part A and Part B agreement may be used.

Supplemental Agreement Part A and Part B should not be used for Claims, changing Contract Time or Contract Specification Provisions that involve no change in cost, nor when there is ample time to complete negotiations of all aspects of the Agreement in the "Standard" procedure. Any questions regarding the proper use of Supplemental Agreement Part A and Part B should be referred to the OCIC Supplemental Agreement Specialist at 651-366-4227.

All Supplemental Agreements must include a transmittal letter that includes the justification of entitlement, impact, cost and time extension. When using the two-part agreement process, the transmittal letter must accompany the Part B portion of the agreement. The Part B portion of two-part agreements shall be executed within forty five (45) days of the execution of the Part A portion.

Supplemental Agreement Part A

Note: Authorizing the work involved with a SA Part A before it is fully executed is in violation of MN Statute 16C.05.

The following is the procedure for preparing Supplemental Agreements Part A. (Part A)

1. A project change, meeting one or more of the Supplemental Agreement criteria listed above, needs to be resolved. The Engineer and the Contractor discuss and consider possible solutions and initial price negotiations.

2. The Engineer analyzes the possible solutions and solicits recommendations from District or Central Office personnel as needed. The Engineer works with the Contractor and the Mn/DOT Engineering Cost Data and Estimation Unit (Mn/DOT Estimating Unit) to determine justifiable unit prices, or Force Account

3. Depending on the complexity of the agreement, the Engineer meets with one or more of the following to choose the best solution to the problem: District Engineer, Assistant District Engineer, Resident Engineer or other delegated authorities.

4. All negotiated costs must be reviewed and approved by the Mn/DOT Estimating Unit.

5. The Project Engineer/Supervisor writes the Part A. A Part A may be written in less formal manner than the “Standard” Supplemental Agreement and is composed of these general areas:

Header portion (same as standard format):
State Contract Number
Contractor Name/Address
State Project Number
Federal Project Number (if applicable)
Supplemental Agreement Number
Location of Work

General Scope of Project: Provide in general terms, the description of project. This may be copied from the cover of the contract.

Problem: Provide a general overview of the situation encountered and why it is essential to be completed under the contract.

Resolution: Briefly provide an explanation of what Extra Work is to be performed and what will be expected of the contractor. This should include a directive: “The Contractor will…”
Is this work within the scope of the project? Answer yes or no.

If No, please explain the urgency that the work has to be done now. This is mandatory in order to assure Contract Management and Mn/Dept of Administration that the work should not be considered as a separate contract.

Estimate of Cost: List all known Force Account, Contract Bid, and Negotiated Items with their estimated quantities, unit costs and the item amounts. It is understood that in certain circumstances it will not be possible to have all the prices negotiated. These items will be included in Part B. If the payment is to be Force Account, the amount will be estimated, and final costs will be included in Part B. If the work is not being paid by unit items, there must be an indication if the amount is Force Account or a negotiated Lump Sum.

The Mn/DOT Estimating Unit must approve all negotiated prices. The Project Engineer/Supervisor acknowledges approval by initialing the line "These costs have been reviewed and approved by the Office of Technical Support's Pre-Letting & Estimating Unit".

The statements may be brief but must contain sufficient information for all parties to understand the situation. There are no “Whereas” or “Now, Therefore” statements.

6. The Project Engineer/Supervisor, Contractor, and ADE sign the Part A. Part A may be faxed or scanned and e-mailed simultaneously to the Contractor and the

ADE for signature. The SA part A is then returned to the Project Engineer by fax or scanned e-mail.

7. All copies of the Part A are faxed to OCIC for Agency, Dept. of Administration approval, and FHWA (when appropriate) and fund encumbrance. These approvals are attained simultaneously rather then sequentially as required for a "traditional" Supplemental Agreement.

8. When all signers have returned a signed copy of Part A to OCIC and the necessary funds encumbered, the Part A is fully executed. It is anticipated that Part A would be fully executed within days after receipt by OCIC. The Supplemental Agreement signers are committed to expediting Part A Agreements.

9. OCIC faxes a copy of the fully executed Part A to the Office Manager for Construction.

After the SA is fully executed, the Engineer may authorize the work.

10. OCIC transfers the computer file containing a descriptive line and the encumbrance amount to a District file queue. No pay lines are included in the download. Payment will be made in the field as a miscellaneous back sheet item.

11. District personnel can then download the file to a computer disk and distribute the disk to the appropriate field personnel for uploading into FieldOps.

12. Payments may be made upon acceptance of the extra work.

13. Payments made under Part A may not exceed the total amount encumbered for Part A.

Supplemental Agreement Part B (Part B)

Part B will be a “standard” Agreement that will include all negotiated prices and requirements. Part B shall be executed within forty five (45) days of the execution of Part A. The Estimate of Cost will include the amount encumbered in Part A in order to ensure that the final encumbrance will be increased or decreased accordingly.

When Part B is fully executed and downloaded, a descriptive line and the pay lines will be added to the voucher in the manner of a “standard” Supplemental Agreement. At this time, any payments made on the back sheet pay lines will be reduced to 0.00. Any increase of funds listed in Part B will be downloaded. If Part A overestimated the money needed for the Agreement, Part B download will decrease the encumbrance.

When the Project Final is sent to OCIC, Part A will be deleted entirely from the Final Voucher.

C. Work Performed Before Authorization

Contract modifications may only be authorized by fully executed Supplemental Agreements, or by issued Work Orders-Minor Extra Work. Under no circumstances may Project Engineers/Supervisors authorize Extra Work prior to the execution of a Supplemental Agreement or the issuance of a Work Order. A signed and dated statement by the Engineer and Contractor describing the work to be performed and the basis of payment as previously required in section Emergency Procedures dated April 1, 1996 pages CONCHNG-7 to CONCHNG-8 infers authorization and is contrary to Statutes. Any order by the Engineer/Supervisor to commence work or make payment for work prior to execution of a Supplemental Agreement or issuance of a Work Order is in violation of Minnesota Statute 16C.05.

In those circumstances where a Contractor elects to begin work prior to execution of a Supplemental Agreement or issuance of a Work Order, the Engineer/Supervisor must inform the contractor, verbally or in writing, that such work is unauthorized work in accordance with Standard Specification 1512 (Unacceptable and Unauthorized Work)

D. MS16A and MS16C Violations

It is against Minnesota Statutes to pay for work before a SA is fully executed. Furthermore, it is against Minnesota Statutes to obligate the State to a new Contract (Supplemental Agreement) before the SA is fully executed. This is a MS16A (obligation for work before necessary funds are encumbered) and/or a MS16C violation (obligation for a contract before the contract is fully executed).

If the Contractor elects to perform work covered by an SA before it is fully executed, the work will be considered unauthorized as defined in Mn/DOT Specification 1512. See above, Section C Unauthorized Work.

If a MS16A or MS16C violation occurs, the Engineer must complete a **16A.15-16C.05 Violation Form** and submit with the SA. The Deputy/Assistant Commissioner and Agency Accounting Director signatures are the responsibility of the Office of Construction. This form may be downloaded from the web: http://www.mmd.admin.state.mn.us/doc/16a16cmemo.doc

E. Payment Options

In Addition to item overruns of Contract Unit prices, Mn/DOT Specification 1904 provides for extra work to be paid by Negotiated Prices or Force Account.

Negotiated Prices

Pay items that are not contained in the Contract may be paid using negotiated unit prices as a basis for payment. When negotiated prices are used the Engineer must obtain approval from the Mn/DOT Estimating Unit prior to allowing the Contractor to begin work.

The following criteria are used to justify the negotiated prices:

a) Using average bid prices as documented in the "Average Bid Price for Awarded Project in (year)" from the Mn/DOT Estimating Office.
b) Comparing prices from similar work on the same or an adjacent project.
c) Calculating a price by breaking the operation down into labor, equipment and material costs.

If a subcontractor or specialty contractor performs the work, the Prime Contractor may request a Prime Contractor's Allowance, an additional negotiated overhead cost that is added to the price. This "Prime Contractors Allowance" may not exceed 10% of the first $50,000.00 and 2% of the remaining balance of the work performed by the subcontractor or specialty contractor.

The justification information for all negotiated prices must be included as a part of the transmittal letter for Supplemental Agreements. Assistance and final approval for the negotiated prices is obtained from the Mn/DOT Estimating Office.

If prices cannot be negotiated, the work must be performed in accordance with Mn/DOT Specification 1904 “Extra and Force Account Work”.

Force Account Work

This section is intended to cover the administration of Force Account work. See “Force Account Records and Payments” (CONCHNG-15), and Mn/DOT Specification 1904 “Extra and Force Account Work” for additional information

Force Account refers to the method of accounting and paying for contract work done on the basis of time and materials expended by the contractors’ forces. This method is required when prices cannot be negotiated for extra work performed under Supplemental Agreement or minor extra work authorized by Work Order - MEW.

Basis of Cost Determination:

Material: Materials ordered specifically for the Extra Work: Cost are allowed at the contractor's invoice cost which may include additional costs such as taxes and transportation, if any, plus 15% of that total.

Material the Contractor has on stock not specifically purchased for the work. Costs are allowed if the Contractor will furnish an affidavit certifying that the materials were taken from stock, that the quantity claimed was used, that the material cost is correct, and that transportation costs claimed represent the actual costs to the Contractor.

Labor: The Contractor will receive the actual rate of wage paid for every hour that the employees and foreman are actually engaged in the Force Account work plus the additional costs as provided in the contract.

Foreman hours: In order to be included in this compensation, the Foreman must be in direct charge of the specific operation. If the foreman also supervises other work, the hours will be prorated according to the number of people supervised on each part of the work. The Engineer and the Contractor must agree on the hours worked and document them daily. Travel and subsistence pay are prorated based on the number of hours worked on the Force Account. The Specifications may also require the Contractor to submit a claim for reimbursement for workers compensation costs that exceed the set standard cost.

Equipment: For any machinery or special equipment authorized by the Engineer, other than small tools, the Contractor will receive the rental rates established in the Commissioner's Equipment Rental Schedule as last issued and currently in effect on the date the Force Account agreement is executed. See "Commissioners Equipment Rental Schedule" below. The Engineer is required to have on file a full description of the equipment being used for the force account work. This description should include measurements to verify compliance.

The hours for equipment should include the time actually worked on the Force Account performed by the Contractor, or a subcontractor. Travel time to and from the location of the Force Account work will be allowed at rental rates when the equipment is moved under its own power.

The Contractor will be paid the actual costs of miscellaneous fees incurred for the performance of Force Account Work (dump fees, permits, licenses, etc.)

The Contractor will receive payment plus an additional overhead compensation of 10 percent of the first $50,000 plus 2 percent of the balance in excess of $50,000. Only one overhead allowance is allowed to the Contractor.

Specialty Contract work will be paid at invoice price with an overhead allowance for the Prime Contractor as specified in the contract.

Commissioner's Equipment Rental Schedule

The Commissioner's Equipment Rental Schedule specifies using the "Rental Rate Blue Book" volumes 1, 2, 3 as published by Primedia Information, Inc., publishers of

Dataquest Machinery Information Division Guides, San Jose, California, to determine rental rates. In addition, the Commissioner' Equipment Rental Schedule lists established prices for most truck, tractors, trailer, flatbeds and water trucks. The Mn/DOT Estimating Unit is the authorized unit to use these references to determine the rental rates. Rental rates are established for equipment used to perform Force Account work when prices cannot be negotiated.

The schedule is issued as an Engineering Memorandum generally effective for one year or as specified. However, the memorandum may be superseded if conditions warrant. Specifications require the contractor to furnish the equipment at the rates established in the Commissioners Equipment Rental Schedule as last issued and currently in effect on the date the Force Account Agreement is executed. The Applicable rental rates should be determined and understood by both parties at the time the agreement is written.

The following information is necessary to insure the proper rental rate is determined for a piece of equipment:

1. Name and model number of the equipment;
2. Horsepower and type of fuel;
3. Type of tread (wheel or track) or stationary;
4. Capacity in cubic yards, tons or pounds;
5. Accessories;
6. Year of manufacture (or serial number)

Force Account Records and Payments

This section will explain two forms required documenting Force Account Work.

A. Daily Equipment-Labor Record

Mn/DOT's Daily Equipment-Labor Rental form 2137 (9-79) is completed each day labor, equipment, or material is used on the Force Account work. The Engineer and the contractor sign this form after reviewing and agreeing to the information on the daily form. The original form is placed in the project files and the Contractor is given a copy.

The following are instructions on completing the form:

1. Labor: Report the name and position of each individual working on the force account work. The pay rate is taken from the Contractors payrolls when rates are not specified in the Agreement. The overtime hours the employee actually works on the project work is recorded in the overtime column. The Engineer and Contractor should agree daily and record this agreement on the Daily Equipment Labor Rental Record.

2. Equipment: A brief description of the equipment and the rental rate determined by the Mn/DOT Estimating Unit are entered. Only the hours the equipment was actually used for the force account work are entered for each piece of equipment. The additional

transportation costs associated with hauling the equipment to the project are entered as a separate line.

3. Materials: All materials used in force account work are recorded daily in the “remarks" section of the form. Invoices showing material and associated costs must be attached for documentation.

B. Summary of Daily Force Account

Mn/DOT's Summary of Daily Force Account form TP-21659 (_) is used to summarize all the labor, equipment and material costs recorded on the Daily Equipment-Labor Rental Records after the Force Account work has been completed. Some Contracts may still need the older versions TP-21659 (2-79) or TP-21659 (1-93) form to compute the correct overhead allowances.

The Engineer and the Contractor must sign the original and all copies. The Contractor is given a copy and the original form must be submitted to Central Office, Office of Construction and Innovative Contracting with the final records.

The following are instructions for completing form TP-21659 (____)

1. Labor Section: A separate line is used to total the number of employees, hours, and pay amount for each class of labor with the same pay rate. The total of both regular and overtime hours are multiplied by the regular pay rate to determine the total dollars paid for each class of labor. The amount of overtime-premium pay for all employees is listed as one entry in the bottom portion labeled "Total Overtime". All the wages are then added to get a sub-total of the "taxable wages". When an employee's vacation time is taxed, that vacation time will be considered part of the employee's taxable wages. The specifications provided for an overhead compensation rate to apply to these "taxable wages". After applying the overhead rate, additional labor related costs such as health and welfare, pension funds, fringe benefits, travel, and subsistence are added to get a "Total of "Labor'.

Some older contracts may still require adding all the wages and labor related costs together before applying the overhead compensation percentage rate (use the older form TP-21659 (2-79) to compute these).

2. Materials Section: The materials section is a summation of all the materials costs documented in the remarks portion of the Daily Equipment-Labor Rental Records form. An overhead percentage, as directed in the contract, is computed and added to all the material costs to get the "Total of Material".

3. Equipment Section: Show the number of hours each unit of equipment used on the Force Account, a description of the equipment (including horse power), the rental rate established by the "Commissioners Equipment Rental Schedule" and the total cost of each unit of equipment. The actual cost of transporting equipment other than under its own power is included as a separate item. No overhead compensation percentage is added to equipment rentals unless provided for in the agreement. A grand total of all units of equipment is ten added to get the Total of Equipment".

4. Specialty Contractor Section: The specialty contract work will be paid for at invoice price with an overhead allowance a specified in the Contract to calculate "Total Specialty Contractor".

5. Miscellaneous Compensation Section: Additional costs such as dump fees, permits, and licenses will be paid for at actual cost. All these additional costs are added to get "Total Misc. Comp".

6. Computation of Contractor Section: When a subcontractor performs work on the force account, the Contractor is paid an additional percentage of the total cost as specified in the Contract for administration and overhead expenses. These amounts are paid only on the work actually done by the subcontractor. All the totals of Labor, Material, Equipment, Specialty Contractor, Miscellaneous Compensation, and Contractor's Allowance are added and entered as "Grand Total". This becomes the full payment amount for the Force Account work.

Specification, special provision or supplemental agreement frequently alters the percentages and dollar amounts shown above. Therefore, they should be reviewed before making this computation.

C. Payment

Payment for work performed under Force Account is made each month in the partial estimates. Supporting records are not submitted with the partial estimates but are submitted with the final record.

Negotiated Contract

A negotiated contract is used in those rare cases where it is in the best interest of Mn/DOT to have additional work performed, but the contemplated work is not essential to completion of the contract. Negotiated contracts are covered in Minn. Stat. 161.32 subd. 2 and are used where the estimated cost of the construction or maintenance work does not exceed $150,000. The Commissioner may enter into a contract for the work by direct negotiation with two or more quotations for the work. The Contract Administration Engineer for Construction and Innovative Contracting should be contacted for any questions or further instructions.

Claims

Specification 1517 "Claims for Compensation Adjustment" covers what the Contractor must do to seek additional compensation for work or materials not covered by the Contract or ordered as extra work. The Engineer should contact the Claims Engineer in the Office of Construction and Innovative Contracting for assistance on large or controversial claims as soon as possible. The Engineer may want to keep force account type records on the disputed work to verify the validity of the claims. See Federal-aid Projects section for additional claim procedures on Federal funded projects.

Third Party Resolution - Material Testing

Resolving disputes sometimes can be a time consuming process. It is necessary that the quality of products be determined as soon as possible to minimize the risk of producing out of specification material. A timetable for each project should be established for resolution of disputes based on criticality of the item in dispute and the degree of difference between the test results in question. Extremely large variations may be sufficient cause to cease further production until the cause for the discrepancy is found. Limited production may be necessary while corrective measures are pursued. Correction of problems and performance of the final product should be the primary objective of the resolution process. To avoid accusations of bias in resolving difference between parties, a third party will be used to resolve these differences. In the technical field of testing, this is done by identifying and resolving differences obtained using objective measurements rather than a negotiation process. The following are recommended alternatives to the resolution process:

- Use of Mn/DOT Maplewood Construction & Materials Engineer Laboratory (MMC&MEL)

  The third party should not be involved with either the QC or the acceptance processes. The MMC&MEL should be viewed as an “unbiased" source although technically not totally independent of both parties. The MMC&MEL is charged with the development of the IA Program and thus may be in the best position to act as the third party arbitrator. Additionally, the Department has a legal responsibility to decide the acceptability of the material.

- Independent Laboratory Requirements

  If used, a decision must be made with regard to the acceptability of the independent laboratory to both Mn/DOT and the Contractor. It is suggested that a pre-approved list of independent laboratories be established before a project begins. Qualification standards should be established but as a minimum the laboratory will be AASHTO accredited and use testing specialists certified under Department procedures.

  The MMC&MEL will assist in the selection of a specific third party laboratory to avoid a conflict of interest. In cases, where third-party investigations are used, the decision of the selected independent laboratory will have binding effect on the dispute in question.

- Cost of Resolution

  In principle, the determination of "who pays" for the additional testing will depend on the outcome of the final analysis. If the additional testing and investigation indicates that the Department's tests are correct, the Contractor will pay the cost

of the investigation. Likewise, if the additional testing and investigation indicates that the Department's tests were not correct the Department will pay the cost of the investigation.

In the case of the MMC&MEL, acting as the third party, the agency will establish a fixed cost for performing various tests based on historical cost records.

- Split Samples

The use of stored split samples for both Contractor and Department tests should be used when the nature of the material being tested allows. The split sample can be discarded after final determination of payment is agreed upon. Where the use of split samples is not possible or impractical, the dispute resolution investigation will use the best information possible related to the final product quality.

Procedure for Dispute Resolution

In this case the appropriateness of the test method is not in question. However, a comparison of the test results of the Contractor and the Department differs to such a degree that requires consideration of material rejection or correction work, imposition of a disincentive, or denial of an incentive in accordance with schedules established for each particular material and property.

Step 1: Preliminary Project Investigation

The Department has established an ongoing procedure to compare the Contractor QC test results and the Department's test results. This procedure is based upon applying the AASHTO multi-laboratory precision allowances for each test.

When the project level statistical comparison indicates that the Contractor's and Department results are dissimilar, appropriate review of sampling procedure, testing procedures, testing equipment, and computations will be performed by project personnel responsible for Quality Assurance program. The intent of this investigation is to ensure that the proper procedures are followed, equipment is properly calibrated and functioning, and that computational errors are eliminated. If problems are found, corrective action should be taken.

Step 2: Third Party Investigation

When Contractor QC results and Department results are dissimilar and the preliminary project investigation does not identify the reason for the dissimilarity, the situation should be forwarded to the Department's designated third party for a more thorough investigation.

The third party should examine:

a) Past similar/dissimilar comparisons for the disputed item to identify any particular trends;
b) The results of the preliminary project level investigation; and
c) The results of the IA Program

The third party should then have referee or "set aside" split samples, or new samples tested to compare with the Contractor and agency's test results.

The results obtained from the referee, split sample or new sample will be judged to determine whether the Contractor or Department's initial test results more accurately represent the particular material property. The third party will then recommend whether to require rejection, corrective work, a disincentive, or an incentive.

Step 3: Board of Dispute Resolution

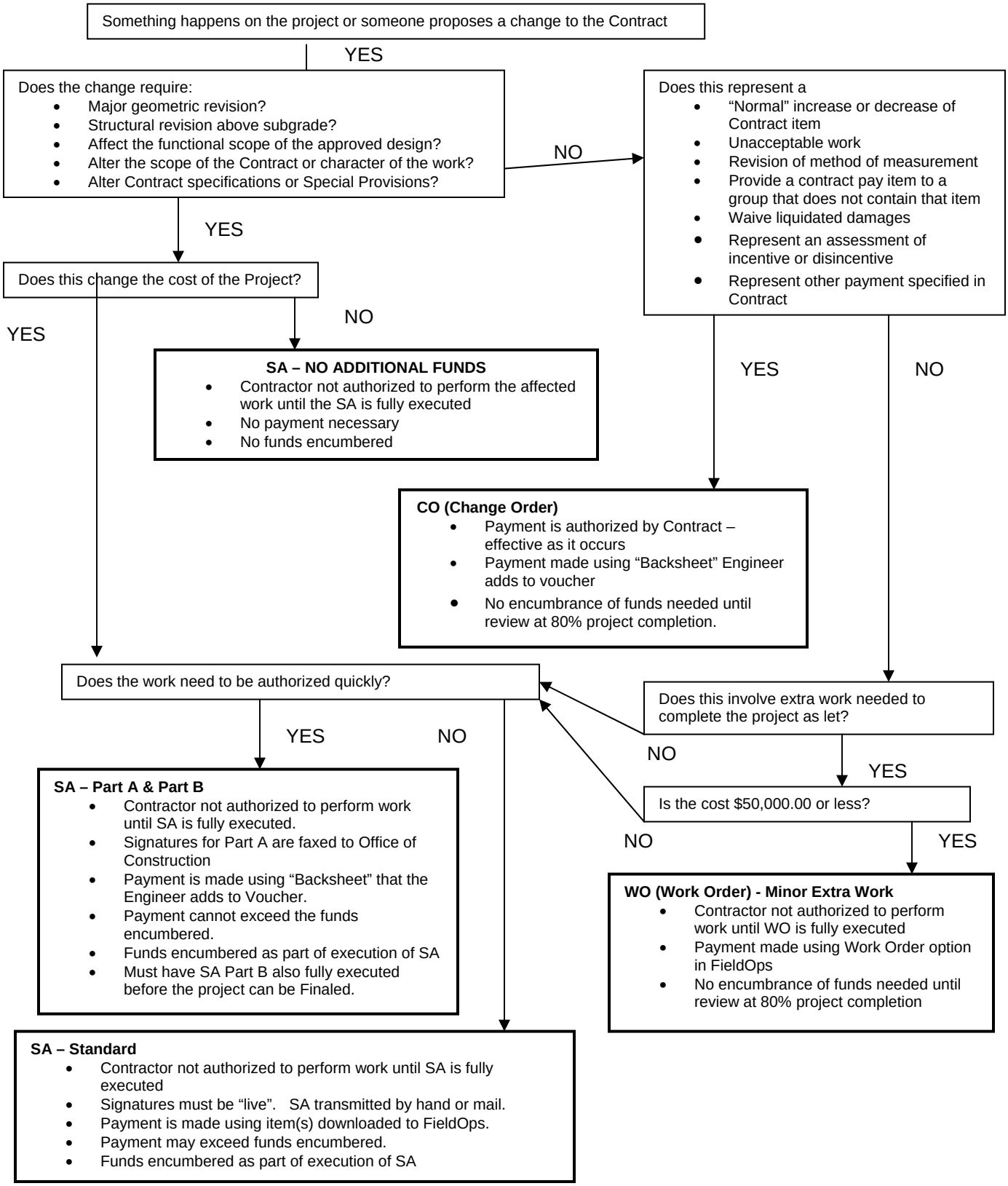
When preliminary project investigation (step 1) and third Party investigation (Step 2) do not resolve the dispute, the Contractor and/or the Department may request a decision by the Board of Dispute Resolution (BODR). Either party may submit a written request to the Director of the Office of Materials and Road Research for review by the BODR. The request must also briefly summarize the dispute. The Director will have the discretion to deny the request for review by the BODR if the request is determined to be without merit based on the findings of Steps 1 and 2.

If the Director approves the request for review by BODR, the Director will convene the group who will be responsible to resolve the disagreement. The BODR will consist of three individuals. The Department will select one member, the Contractor will select one member, and together the Department and Contractor will mutually agree on a third member.

The BODR will review all findings from Steps 1 and 2 to make a recommendation regarding acceptance of the material. The BODR may require Steps 1 and 2, or portions thereof, to be rerun before a final decision is made. Final resolution will be determined by a majority vote of the three individuals. Each individual is required to vote.

The Board of Dispute Resolution will make all attempts to expedite the decision making process, however, insufficient or inadequate information in Steps 1 or 3 may extend this process.

Both parties, regardless of the final decision, will share the cost incurred with establishing the BODR equally.


Something happens on the project or someone proposes a change to the Contract
YES
Does the change require:
Major geometric revision?
Structural revision above subgrade?
Affect the functional scope of the approved design?
Alter the scope of the Contract or character of the work?
Alter Contract specifications or Special Provisions?
NO
Does this represent a
"Normal" increase or decrease of Contract item
Unacceptable work
Revision of method of measurement
Provide a contract pay item to a group that does not contain that item
Waive liquidated damages
Represent an assessment of incentive or disincentive
Represent other payment specified in Contract
YES
Does this change the cost of the Project?
YES
NO
SA – NO ADDITIONAL FUNDS
Contractor not authorized to perform the affected work until the SA is fully executed
No payment necessary
No funds encumbered
YES
NO
CO (Change Order)
Payment is authorized by Contract – effective as it occurs
Payment made using "Backsheet" Engineer adds to voucher
No encumbrance of funds needed until review at 80% project completion.
Does the work need to be authorized quickly?
YES
NO
Does this involve extra work needed to complete the project as let?
NO
YES
Is the cost $50,000.00 or less?
NO
YES
SA – Part A & Part B
Contractor not authorized to perform work until SA is fully executed.
Signatures for Part A are faxed to Office of Construction
Payment is made using "Backsheet" that the Engineer adds to Voucher.
Payment cannot exceed the funds encumbered.
Funds encumbered as part of execution of SA
Must have SA Part B also fully executed before the project can be Finaled.
WO (Work Order) - Minor Extra Work
Contractor not authorized to perform work until WO is fully executed
Payment made using Work Order option in FieldOps
No encumbrance of funds needed until review at 80% project completion
SA – Standard
Contractor not authorized to perform work until SA is fully executed
Signatures must be "live". SA transmitted by hand or mail.
Payment is made using item(s) downloaded to FieldOps.
Payment may exceed funds encumbered.
Funds encumbered as part of execution of SA

Supplemental Agreement Process Flowchart
SA Part A

Step	Entity	Action	Method
1	Project Engineer	Determines change to Contract is warranted, writes, signs, sends	by hand, or simultaneoulsy by fax or scanned e-mail to
2	Contractor & ADE	Signs and returns	by hand, or by fax or scanned e-mail to
3	Project Engineer	sends	by hand, or by fax or scanned e-mail to
4	OCIC (refers to SA Specialist, Karen Peters	Enters SA into CMS , checks language, sends	by hand to
5	Claims Engineer - Mike Leegard (OCIC)	Approves SA, signs as delegated authority for Commissioner of Transportation, returns	by hand to
6	OCIC	If the SA is for a FFO project and the SA is for >$100,000, or if the SA is for a project with any Federal funds and provides for stopping the project before completion, changing the scope or termini of the project, or for experimental work continue to step 7, for all others, skip to step 8.	send by fax to (7)
7	FHWA (Kevin Kliethermes, Tim Anderson, Phil Forst, Chris Cromwell, Bill Lohr, et al)	Signs indicating they received copy, returns	by fax to
8	OCIC	Updates tracking in CMS, send	by hand simultaneously to (9A, 9B, 9C)
9A	Finance (John Kellerman)	Encumbers estimated funds needed, returns	by hand to OCIC
9B	Estimating (Joe Tummers et al)	Review and approve costs, file copy, no further action	
9C	Contract Management (Jim Cownie)	If the SA* is for a Design/Build Project, Review SA and send to 10. If not D/B, Approve SA, sign as Delegated Authority for Comm of Admin and send to 12.	by hand to
10	Department of Administration	Approves SA, signs as delegated authority for Commissioner of Administration, returns	by hand to
11	Contract Management	Acknowledges Admin signature, sends	by hand to
At this point the SA is fully executed. The approval date is the date of the latest signature			
12	OCIC	Updates tracking in CMS, downloads encumbrance & paylines to CAARS/FieldOps, Scans SA, enters e-file to shared file, sends file	by E-mail to (13A, 13B)
13A	Finance-Federal Billing (Lori Peterson) & Office of Technical Support-Design Standards (Michael Elle)	File in their records. No further action.	
13B	District Office Manager	Forwards e-file	by E-mail to
14A	Project Engineer	Payment may now be made to Contractor	
14B	ADE, & District Design	No further action.	

* For Design Build contracts, a Change Order level 2 is the equivalent of a SA and is treated as such.

DRAFT SA: SA's submitted without Engineer's, Contractor's and ADE's signatures for the purpose of approving/editing wording. OCIC will review a Draft Form for: correct form version, correct Contract and Contractor information; the "Whereas" portion for: correct general description of the work, clear definition of the problem, logical sequence of events or facts, solution to problem, etc.; the "Now, Therefore" portion for: clear description of the Contractor's and Mn/DOT's responsibility, clear and logical method of measurement/payment, proper use of "will" and "shall", etc.; and the Estimate of cost for: specification number for item if possible, Group Distribution, logical name for item, etc.

Draft SA are submitted by fax, mail, or e-mail. A response in the form of an edited SA draft or approval of the original draft should be made by the end of the next business day.

Supplemental Agreement Process Flowchart
Standard SA and SA Part B

Step	Entity	Action	Method
1	Project Engineer	Determines change to Contract is warranted, writes, signs, sends	by hand or mail to
2	Contractor	Signs and returns	by hand or mail to
3	Project Engineer	Add justification letter, sends	by hand or interoffice mail to
4	ADE	Signs and sends	by hand or interoffice mail to
5	OCIC (refers to SA Specialist, Karen Peters	Enters SA into CMS , checks language, sends	by hand to
6	Estimating unit - Tech Support (Joe Tummers, Daryl Nelson, Estimating Engineer)	Checks & approves cost, returns	by hand to
7	OCIC	Updates tracking in CMS, send	by hand to
8	Claims Engineer - Mike Leegard (OCIC)	Approves SA, signs as delegated authority for Commissioner of Transportation, returns	by hand to
9	OCIC	If the SA is for a FFO project and the SA is >$100.000, or if the SA is for a project with any Federal funds and provides for stopping the project before completion, changing the scope or termini of the project, or for experimental work, the SA follows steps 10,11,12. All other SAs skip to step 11.	send by interoffice mail to
10	FHWA (Kevin Kliethermes, Time Anderson, Phil Forst, Chris Cromwell, Bill Lohr, et al)	Signs, indicates Federal Participation on the routing slip & returns	by interoffice mail to
11	OCIC	Updates tracking in CMS, send	by hand to
12	Finance (John Kellerman or John Fox - State Aid projects)	Encumbers estimated funds needed, returns	by hand to OCIC
13	Contract Management (Jim Cownie)	If the SA* is for a Design/Build Project, Review SA and send to 14. If not D/B, Approve SA, sign as Delegated Authority for Comm of Admin and send to 16.	by hand to
14	Department of Administration	Approves SA, signs as delegated authority for Commissioner of Administration, returns	by hand to
15	Contract Management	Acknowledges Admin signature, send	by hand to
At this point the SA is fully executed. The approval date is the date of the latest signature			
16	OCIC	Updates CMS, downloads encumbrance & paylines to CAARS/FieldOps, Scans SA, enters e-file to shared file, sends file	by E-mail to (17A, 17B)
17A	Finance-Federal Billing (Lori Peterson) & Office of Technical Support-Design Standards (Michael Elle)	File in their records. No further action	
17B	District Office Manager	Forwards e-file to	by E-mail to
	Project Engineer	Payment may now be made to Contractor	
18	ADE, & District Design	No further action.	

* For Design Build contracts, a Change Order level 2 is the equivalent of a SA and is treated as such.

DRAFT SA: SA's submitted without Engineer's, Contractor's and ADE's signatures for the purpose of approving/editing wording. OCIC will review a Draft Form for: correct form version, correct Contract and Contractor information; the "Whereas" portion for: correct general description of the work, clear definition of the problem, logical sequence of events or facts, solution to problem, etc.; the "Now, Therefore" portion for: clear description of the Contractor's and Mn/DOT's responsibility, clear and logical method of measurement/payment, proper use of "will" and "shall", etc.; and the Estimate of cost for: specification number for item if possible, Group Distribution, logical name for item, etc.

Draft SA are submitted by fax, mail, or e-mail. A response in the form of an edited SA draft or approval of the original draft should be made by the end of the next business day.

Part B shall be executed within forty five (45) days of the execution of the Part A portion of the agreement.

Explanation of Supplemental Agreement Reason categories:

1402 – Alteration of Work: Changes to the cross section of the roadbed above the sub-base, changes to the placement or number of bridge piers, changes to location or number of turn lanes. This category also includes other changes to the plans or Standard Plates.

1402 – Differing Site Conditions: The work site is found to be different than what was represented by the contract changing how the Contractor performs his work. This may include changes in cross-sectional composition of work site, water table, landscape features, location of utilities, additions to or lack of features reported in the Contract.

1402 – Local Government: Additions, elimination, changes to work, permits or inspections requested/required by Local Governments (Municipality, County, Tribe) or other Government entities (Corps of Engineers, DNR, etc).

1402 – Scope Change: Addition to work not originally intended. Include a statement addressing the scope change with a concurrent statement by District Management.

1402 – Specification Changes: Additions, changes or elimination of all or portions of Standard Specifications or Special Provisions.

1408 – Value Engineering: Acceptance of a Contractor's Value Engineering proposal.

1504 – Error/Omission: Items of work not accounted for in Bid Estimate or conflict between Contract and other contract documents.

1504 – Quantity Error in Plan: Adjustment of plan quantity due to significant discrepancy between plan quantity and the as-built quantity with no change in the intended scope of work shown on the plans, as well as changes for a pay item that was not included in the plans, but for which work was called for in the plans with the intention of paying for such work as a separate pay item. Use when payment for fixed costs is not easily distributed using the method of paying for the work. Errors in this category are not a change to the intended design but include costs that, had the error not been made, would have been included in the awarded contract amount.

1507- Utility Coordination: Additions, changes or elimination of utility relocations. Also, changes to method of new utility placement, size or material. Utility Delays.

1508 – Staking error: misinterpretation of plans or provisions. Additional compensation to the contractor due to errors in layout or construction within the responsibility of the department.

1517 – Claim: Settlement of Claims submitted by Contractor, sub-contractors, or suppliers. This is a Primary Reason that should have a Secondary Reason.

1717 – Air, Land, and Water Pollution: NPDES permits, regulated waste, contaminated soil and/or water.

1718 – Right of Way: Additions, changes or elimination of Right of Way permits and acquisitions. Right of Way delays.

1806 – Contract Time/Contract Delay: Primary reason should be limited to delay to Contract Start date or acceleration of work ordered by the Owner. A secondary reason may include changes to Contract Start Date, Intermediate Completion Dates, and Final Completion Date, including delay or acceleration of work as a result of Contractor's actions or other reasons listed here.

1808 – Default and Termination of Contract: Mn/DOT cancels the Contract after giving due notice to the Contractor and its Sureties.

1809 – Emergency Cancellation of Contract: The owner terminates all or a portion of the work when deemed in the best public, State or national interest for reasons beyond the control of the Contractor.

1903 – Price Adjustment: Adjust Contract Bid Price because item has overrun or underrun by at least 25% (<75% or >125% of contract bid quantity). This is not to be used for 1402 – Differing Site Conditions, 1402 – Alteration of Work, 1402 – Local Government, 1402 - Scope Change, 1408- Value Engineering, 1504 – Error/Omission, 1504 – Quantity Error in Plan, 1808 – Cancel Contract, 1905 – Elimination of Work , or 1809 Emergency Cancellation of Contract.

1905 – Elimination of Work: Reduce all or portion of work item or type of work.

Other: Changes not included in any other category above. It is intended that this category be used rarely, if at all.

Request To Sublet[1]

Mn/DOT Specification 1801, "Subletting of Contract" specifies the requirements for subcontracting portions of a contract.

The following are general subcontracting guidelines that that contracting authority[2] (CA) shall adhere to:

If the prime contractor intends to sublet any portion of the contract, the CA shall require the completion and submission of the MN/DOT, TP-21834, Request To Sublet Form and Request to Sublet Summary Form to the project engineer (PE) 10 days prior to the first day of work for any subcontractor.

The CA shall ensure that the prime contractor has not subcontracted any portion of the contract without prior written consent from the project engineer.

The CA shall ensure that the prime contractor's organization performs work amounting to not less than 40 percent of the total original contract cost. However, contracts with Disadvantaged Business Enterprise (DBE) or Targeted Group Business (TGB) established goals, or both, the CA shall allow the prime contractor's organization to perform work amounting to not less than 30 percent of the total original contract cost. The prime contractor's organization shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators[3] and includes materials paid for and supplied by the prime contractor.

The CA shall ensure that the first tier subcontractor has not subcontracted any portion of its work under this contract unless approved by the prime contractor and the PE. Additionally, the CA shall ensure that the first tier subcontractor has not subcontracted more than 50% of its original subcontract.

The CA shall not allow a second tier subcontractor to subcontract any portion of its work under this contract.

The CA shall ensure that each contractor has not subcontracted with or purchased materials or services from a debarred or suspended person.[4]

The CA shall place each completed MN/DOT, TP-21834, Request To Sublet Form and Request to Sublet Summary Form into the project file. The CA shall forward copies of the forms to the Mn/DOT Labor Compliance Unit (LCU).

[1] MN/DOT Standard Specifications for Construction, 2005 Edition, Section 1801
[2] Mn/DOT Standard Specifications for Construction, 2005 Edition, Section 1103
[3] Required Contract Provisions Federal-Aid Construction Contracts, Form 1273, Section VII, Subpart 1(a)
[4] Minnesota Statute 161.315, Subdivision 3(3)

The CA is responsible for ensuring that all subcontracts contain the applicable contract provisions and/or specifications. It's recommended that a minimum of one subcontract per federal-aid contract be reviewed to ensure the inclusion of the applicable provisions and/or specifications.

The CA should be aware that Disadvantaged Business Enterprise (DBE) requirements and designated "specialty items" may impact the percentage of work to be sublet. Questions related to the DBE subcontracting rules shall be directed to the Mn/DOT Equal Employment Opportunity (EEO) Office. Other questions should be addressed to a professional in the LCU.

"Specialty Items" shall be designated during the contract's design phase and shall be specified under Specification 1801 in the contract proposal. Failure to incorporate "specialty items" into the contract constitutes no "specialty items". Furthermore, contractors performing the work of "Specialty Items" are subject to the contract labor provisions.

DEFINITIONS

Cooperative Agreement = Municipal Agreement
- Usually for construction and construction engineering, may include R/W
- Traffic Signal agreement are treated the same

Joint Powers
- Usually for technical services

Partnership
- Sharing resources and used when local money pays your salary

How do you know if you have an Agreement?

Before the plan is complete:
- PPMS activity 1290 Coop Agreement
- PPMS activity 1293 Traffic Agreement or
- PPMS activity 1296 Agreements Other

- Groups in the Plan
- Look on the Estimated Quantity sheet in plan
- Check UMART (Utility and Municipal Agreement Report and Tracking)
- A copy of each fully executed agreement is mailed to the Project Engineer
- Call Maryanne Kelly-Sonnek 651-366-4634

TYPES OF AGREEMENTS
- Schedule I = groups in plan
  - Any changes in construction can be added or removed from the schedule I
  - Assign those costs to the local group(s)
  - Usually used for utility work, aesthetic items or tied construction items.
  - Can be for a Traffic or Co-op agreement

- Lump Sum on Bid = may have groups
  - Will have a note in Plan as to Lump sum agreement
  - Design needs to prepare pay items and quantities for local cost share.
  - There may be a group already in the plan or it is a separate document
  - Changes pertaining to this work are not charged to local

- Lump Sum = a note on the Statement of Estimated Quantities if Federal
  - Local cost is based on estimate
  - Changes pertaining to this work are not charged to local
  - Changes outside this scope – requested by locals need to be paid by locals

- Composite = groups in plan and an odd %
  - Local % of cost is based on estimate of their work versus all work.
  - All items have this split.
  - Changes outside this scope – requested by locals need to be paid by locals.

- A combination of any of the above

Contract Changes if there is an agreement

Whenever a Change Order, Work Order, or Supplemental Agreement affects items in a group that is funded wholly or in part by a County or Municipality, the Engineer must inform the Municipal Agreements Unit promptly so the Cooperative Agreement associated with the project can be updated.

STATE LET PROJECTS:

- ☐ If Schedule I
  - City sign the SA, or paper document requesting change
  - Send Maryanne copy
  - Big cost changes –local agency will be billed

- ☐ If Lump sum or any other type
  - If local agency requested:
    - May need to amend the agreement
    - Call Maryanne and send copy
  - If it is part of the work that is in lump sum
    - No additional cost (or credit) to local agency

- ☐ If there is NOT an agreement
  - Local Agency work requires an agreement
  - Call Municipal Agreements unit – There needs to be an agreement written and executed.

Prior to construction completion
Is the local agency satisfied with what they are paying for?

For Projects with Agreements, upon Construction Completion:

- ☐ Multi year project: at year end, send Municipal Agreements unit a copy of the most recent voucher
- ☐ Municipal Agreements completes the final Schedule I
- ☐ Send Municipal Agreements unit a copy of the final voucher and supporting documentation (SA, CO, WO)
- ☐ If project has Labor holds – send Municipal Agreements unit a copy of final voucher at the same time as sending it to Contractor.

DETOUR AGREEMENTS

- ☐ Detour agreements pay roadlife used based on duration (mileage and ADT)
- ☐ When the detour signing is removed, the Municipal Agreements unit needs to know the duration of the detour.
- ☐ Standard form letter on Municipal Agreements IHUB website to send to the local agency informing of removal of detour signing and duration.

Local Let Projects

Oversight is defined as the act of ensuring that any construction activity undertaken on or affecting the TH system is designed and constructed in accordance with the laws and rules of the State of Minnesota and policies of the DOT

4 LEVELS OF OVERSIGHT

- ☐ **Mn/DOT Project Administration**: usually for level 1 work that is on the Interstate system or a NHS; the FHWA Stewardship agreement requires this. New interchange, new bridge, ramp modifications etc.
    - o Locals are in charge, Mn/DOT work for them (sometimes this is our financial contribution).
    - o Mn/DOT actively supervises and directs all construction engineering, surveying, staking, inspection, testing, etc. Mn/DOT also furnishes other personnel, services, supplies and equipment.
    - o Not always in our system (Transport or FieldOps)
    - o Charge ID for your time and testing.
    - o Mn/DOT prepares SA's; Locals sign them.
    - o Certify cost estimates for work completed, locals pay.

- ☐ **Mn/DOT Enhanced Oversight**: usually for level 2 work that is on the Interstate system but doesn't require full oversight. A Mn/DOT project engineer is assigned to the project to oversee contract administration that has been delegated to the local agency.
    - o Spot check material certifications, have authority of SA's and CO's, and have a say in traffic control operations.
    - o Locals pay for all testing.

- ☐ **State Aid Oversight**: usually for level 3 work that will utilize TH funds in addition to other funds. A State Aid project manager will be assigned as lead and they may enlist the assistance of construction. Mn/DOT project engineer will have periodic site visits.
    - o Spot check material certifications, approve SA's and CO's for funding.

- **Permit Unit Oversight**: Minor impact to the T.H.

Levels

Level 1= Major construction on Freeways or high speed multi lane roadways. Major bridges or major changes in freeway access.
Level 2= changes in # of lanes, raised channelization, major intersection revisions, roundabouts, moderate changes in access.

Local Let Projects – Closeout

- If Mn/DOT full oversight, we provide the documentation to the locals
- Locals provide final payments, voucher and supporting documentation to District Agreement contact.
- Final contract items, SA's CO's etc. Cancelled checks paying contractor, and a Certification form signed by locals and Mn/DOT.

Use of Change Order on Projects that have Municipal Agreements with (P) Plan Quantity Items

When a Municipal Agreement is connected to a Contract, it is highly recommended that any changes in quantity of a (P) Plan Quantity Item be documented by Change Order. Use of a Change Order will serve to clearly delineate the proper quantity splits for each Group. The Change Order will also eliminate the need for the Mn/DOT Municipal Agreement section to search field records to locate documentation. Municipalities routinely request this information /documentation to verify their portion of financial responsibility in the project. (Often a municipality will request this information long after the project is completed.)

In the absence of a Change Order, such changes may also be made by including all of the above-required information on the applicable Item Record Accounts or by separate record. In all cases, documenting changes to (P) Plan Quantity Items must have a clear and logical audit trail.

Fund Encumbrances

When a Contract has been officially approved, the funds to cover the Contract amount have been encumbered. This encumbrance is a legal process governed by State laws to ensure money has been designated or set aside to pay the Contractor. The Engineer cannot issue a partial payment until the Office of Construction & Innovative Contracting (OCIC) downloads the original encumbrance to the field, and it is entered into the field computer application. This original encumbrance download will be made approximately three working days after Contract approval.

In addition to the original encumbrance, the following conditions may need the encumbrance of additional funds.

1. Supplemental Agreement (SA)

SA funds are encumbered at the time the agreement is approved in the Central Office. Funds are encumbered by group number, thus the Engineer must take care to ensure the proper distribution of funds on the SA and in subsequent requests for funds to cover over-runs on the agreement. Any additional encumbrance for overruns, claims, etc. because of work performed under the SA is addressed below.

2. Anticipated Overrun in Contract Items

The Engineer should review all pay items in the Contract, SAs and Work Orders for Minor Extra Work (WO-MEW) for over-runs and under-runs when the certified value of work completed on a partial estimate voucher is equal to 80 percent of the total encumbrance to date. The Engineer should then estimate the final amount of each pay item. If the estimate indicates that the amount encumbered is inadequate to make final payment to the Contractor, the Engineer must submit a request for encumbrance to the OCIC Contract Administration Engineer, or the District State Aid Engineer, as appropriate, sufficient to meet the estimated value of the final payment for each pay group. The OCIC Contract Administration Engineer or District State Aid Engineer will review and approve prior to submitting it to the Department of Finance for encumbrance of additional funds.

The Engineer must list the amount to be encumbered by group in the request for encumbrance. Pay Items documented by Change Order, Work Order-Minor Extra Work, and Back Sheet Item entries are considered overruns and must be included in the request for encumbrance. The Engineer may submit as many requests for encumbrance as are needed.

Fund De-encumbrances

When the Contract work is completed, the Engineer should review the final quantities and determine the amount of excess encumbered funds, if any. When the final voucher is received from the Contractor, or the 90-day clock has expired, whichever comes first, a de-encumbrance of any excess funds should be made in the same manner as described for encumbering.

Partial Payment Process

In accordance with *Standard Specification* 1906, "Partial Payments," at least once a month at regular intervals, the Engineer will prepare an estimate of the value of the work completed or substantially

completed for each Contract item, less an amount adequate to cover contingencies and costs still to be incurred. Partial payments may be withheld from the Contractor if any required documents in the Contract are delinquent or for other causes discussed in Specification 1906 "Partial Payments."

A partial payment cannot be made if the amount of the voucher exceeds the amount encumbered to date. When needed, the Engineer must encumber additional funds following the procedures outlined previously in this section.

Note: Notify the Contract Administration Supervisor in OCIC when there is a partial payment voucher that shows a minus dollar figure (Credit owed the State.)

The Project Engineer/Supervisor will review the voucher prior to approving it. By approving the voucher, the Project Engineer/Supervisor is certifying that Work has been done in accordance with the Specifications and that the quantities or work is a fair estimate of work performed.

Item Record Accounts (IRAs)

Partial payments to Contractors are made based on the pay item quantities that the Engineer has entered on to the IRAs contained in the field computer application. The IRA provides the Engineer with the ability to electronically record and track daily pay item quantity entries as they are measured, documented, and become eligible for payment.

Original Contract Pay Item IRAs

At the time of Contract award, a complete set of IRAs is downloaded to the field computer application. This original download includes one IRA for each original Contract pay item for each funding split or Group included in the Contract. The Engineer can immediately make entries and keep track of quantities on these IRAs prior to Contract approval.

Back Sheet Pay Item IRAs

Back sheet pay items are those Contractual payments provided for by the Standard Specifications, Plans, or Special Provisions, excluding Contract bid Items and Supplemental Agreement pay items. Back Sheet pay items IRAs are not included in the original Contract pay item download; the Engineer must create the IRAs for Back sheet payments in the field computer application.

The following are examples of back sheet payments or deductions and authorizations:

- Credit (Deduction) for out of tolerance Curb & Gutter in accordance with *Standard Specification* 2531K1 "Workmanship and Finish."
- Items for additional traffic control that may be required as per *Special Provision* S-___.
- Deduction taken for failing aggregate as authorized by memo from Mn/DOT Bituminous Office.

Material on Hand (MOH) Payments

In accordance with *Standard Specification* 1906 "Partial Payments," a payment will be made for acceptable material produced or furnished for incorporation as a permanent part of the work to be completed.

In case any Vendor claims against the Contractor (for materials so paid for) remain unsatisfied for more than 30 days following issuance of the partial payment voucher to the Contractor, the applicable payment may be canceled on the next partial estimate.

The required invoice, billing, title, or assignment documents furnished by the Contractor shall contain complete material description and identification data.

Raw materials stockpiled at production plants or fabrication sites must be stored separately to qualify for partial payment and shall be used only for the assigned Contract.

No MOH payment will be made for living plant materials until planted. [Note: payment of certain percentages of the bid amount for plants can be made under the provisions of *Standard Specification* 2571.5 "Basis of Payment" (e.g. up to 10% payment can be made upon satisfactory completion of Preparatory Work etc.)]

MOH will be paid for as a Back Sheet Item. MOH payments will not be combined or "lumped together" as one MOH payment covering several pay items. (E.g.: Stockpile for Aggregate Shoulder Class 3, Structural Steel Beams and 12 inch Reinforced Concrete Culvert requires three separate MOH payments.)

The Engineer is responsible for monitoring all MOH payments to ensure that payment for such materials is appropriately reduced from the pay voucher as the actual pay items represented by the MOH are being placed and paid for under the Contract items.

MOH payments for Contractor produced materials

The Engineer determines the amount of the MOH payment for those materials produced by the Contractor. The Engineer may request the Contractor to submit an itemized list showing the cost of producing the material, or use the following table as a guide, but in no case will the partial payment exceed the value of work it will be used in.

Item No.	Item	Percent of Item Unit Bid Price
2118	Aggregate Surfacing	40% in stockpile in pit
2211	Aggregate Base	or
2221	Aggregate Shouldering	65% in stockpile on project
2461	Concrete Sand	$3.75 Ton at batch plant
		$5.25 CY at batch plant
		$2.00 Ton at producing plant
		$2.80 CY at producing plant
2461	Concrete Coarse Aggregate	$6.25 Ton at batch plant
		$8.75 CY at batch plant
		$4.25 Ton at producing plant
		$5.95 CY at producing plant
2331, 2341	Bituminous Aggregate	12% in stockpile in pit
		20% in stockpile on project

Fuel Cost Escalation

1. A Fuel Cost Adjustment payment to the Contractor will be made as a lump sum each payment period based on the last published CFI.
2. A Fuel Cost Adjustment credit to the Department will be deducted as a lump sum each payment period from any monies due the Contractor.
3. Upon completion of the work under the Contract, any difference between the estimated quantities previously paid and the final quantities will be determined.
4. The CFI in effect on the day of completion of the Contract will be applied to the quantity differences in accordance with the procedures set forth above.
5. Only items shown in the 1910 Fuel Escalation Clause in the Special Provisions of the Contract will be considered for compensation adjustments.

Credit or additional payment will be computed as follows:

1. The Engineer will estimate the quantity of work done in that month under each of the Contract items listed in the 1910 Fuel Escalation clause in the Special Provisions of the Contract.
2. The Engineer will compute the gallons of fuel used in that month for each of the Contract items listed in the 1910 Fuel Escalation clause in the Special Provisions of the Contract by applying the unit fuel usage factors shown.
3. The Engineer will summarize the total gallons (Q) of fuel used in that month for the applicable items.
4. The Engineer will determine the Fuel Cost Adjustment (FCA) from the formulas as shown in the 1910 Fuel Escalation clause in the Special Provisions of the Contract.

Escalation for other items will only be allowed as provided for by the Contract.

Partial Estimate

After quantities have been entered, the Engineer may print a partial estimate. It is wise to create a Draft Partial Estimate for review by the Engineer and the Contractor prior to creating the “hard copy” partial estimate. This will allow the Engineer to make adjustments in quantities before submitting to Central Office Construction for payment.

After printing the voucher, the Engineer will sign the signature page and submit it with the front face of Partial Estimate Voucher to**:**

MN/DOT OCIC
Attention: Estimate Section MS 650
395 John Ireland Blvd
St Paul MN 55155

OR
Scan the front face of the Partial Estimate and the signed signature sheet and send to: CPG.DOT@state.mn.us.
Include the S.P. number, Contract number, and voucher number in the subject line.

The Estimate Section then checks the voucher for accuracy prior to submitting it to the Mn/DOT Office of Finance for payment. If the voucher is not payable as submitted, the Engineer is notified immediately of any corrective action necessary.

PAYMENT FOR SURPLUS MATERIAL

Pay for surplus materials made in accordance with Specification 1907 "Payment for Surplus Materials." Mark payments as nonparticipating for all Federal-aid projects

See Section 5-591.500 for FINAL ESTIMATE AND PAYMENT PROCESS

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General

- This policy will apply to all routes, including 9 and 10-ton routes.

- The allowable legal gross weight is defined as the vehicle(s) licensed gross weight plus the tolerance provided in Minnesota Statutes § 168.013 or the gross vehicle weight provided by Minnesota Statutes §169.824, whichever is less.

- In no case will the allowable legal gross weight exceed 80,000 lbs.

- No payment will be made for any material in excess of the allowable legal gross weight. Any deduction from payment may be made during the life of the contract.

- When discovered at the point of loading, any loads in excess of the allowable legal gross weight shall have material removed to bring the actual gross weight down to the allowable legal gross weight. No scale ticket will be issued or released until this is done.

- The Project Engineer will check to see that the contractor has complied with the provisions of Specification 1513 as it relates to completing a Weight Information Card for each truck hauling. These cards will be spot Group checked by randomly selecting cards and checking all the information on the card for accuracy. Once the accuracy of the information has been established, the engineer will compute the allowable legal gross weight for each truck using the method in part B of this section. If the information supplied on these cards (including the gross weights) is determined to be correct, the information on the remaining cards will be assumed to be correct. However, the Project Engineer may, at any time during the project, randomly select trucks to verify the information supplied on the Weight Information Card.

Method of Determining Allowable Legal Gross Weight (GVW)

The allowable legal gross vehicle weights shall be the least GVW obtained by applying each of the different methods shown below.

- The gross vehicle weight obtained from the Minnesota Gross Weight Table. Consideration must be given as to the legal axle limits of the highway involved. Spring posting restrictions require another chart that may be obtained thought the Resident Office.

- The amount of current vehicle licensed gross weight plus 4% or 1000 pounds, whichever is greater.

- The Gross-Vehicle Weight obtained by combining the totals of groups of axles utilizing the weight chart and the portion of that law requires a maximum of 600

lbs. per inch of tire width on the steer axle (2 axles maximum) and a maximum of 500 lbs. Per inch of tire width on all other axles.

Examples that you may encounter:

1) The vehicle is a tandem axle truck with a spacing of 19 feet from center of the first axle to the center of the last axle, the tandem axle group has dual 10.00 x 20 tires and the front axle has single 11.00 x 20 tires (10:00 series = 10 inch wide & 11:00 series = 11 inch wide).

- Gross vehicle weight from the weight chart (3 axles with 19' spacing) = 50,500 lbs.

- The vehicle is licensed for 61,000 lb., 4% of 61,000 lbs. = 2,440lbs. Therefore: 61,000 + 2,440 = 63,440 lbs.

- Gross Vehicle Weight from the total of axle groups as shown below: 47,200 lbs.

Front Axle 13,200 lbs. Obtained by multiplying 600 lbs. x 22 inches total front axle tire width. Tandem axle group maximum is 34,000 lbs. obtained by using the weight chart column for 2 axles Even though the tandem axle group has a total of 80 inches of tire width (80 x 5OO = 40, 000lbs). It exceeds the 34, 000 lbs. shown in the weight chart; therefore, the 34,000 lbs. must be used.

Keep in mind; the lowest number is always the limiting factor. Therefore, the allowable legal gross vehicle weight for this unit is 47,200 lbs. (13,200 + 34,000.)

2) The vehicle is a 5-axle flow-boy with an overall spacing of 43 feet from center of the first axle to the center of the fifth (last) axle and spacing of 30 feet from the center of the second axle (lead axle of the tractor tandems) to the center of the fifth (last) axle with all 10.00 x 20 tires on a ten ton route. (GVW is 73,280 lbs. On 9-ton axle limit route)

- Gross vehicle weight from the weight chart. (5 axles with total of 43 feet spacing) 75,000 lbs.

- The vehicle is licensed for 83,000 lbs., 4% of 83,000 lbs. = 3,320 lbs. Therefore, 83,000 + 3,320 = 86,320 lbs.

- Gross vehicle weight from the total axle groups as shown below: 74,000 lbs.

Front Axle 12,000 lbs. Obtained by multiplying 600 lbs/inch x 20 inches total front axle tire width.

Combined drive tandem axle group plus trailer tandem axle group is limited to 62,000 lbs., that is obtained by referring to the 4 axle column of the weight chart for 30 feet

spacing. (Note that each tandem by itself theoretically could carry 34,000 lbs. for a total of 68,000 lbs., however the weight chart specifically does not allow a total of 68,000 lbs. on these axles unless the overall spacing of this 4 axle group is 36 feet or greater.) The allowable legal gross vehicle weight for this unit is 74,000 lbs. Based on 12,000 on steer plus 62,000 on the 4 load-carrying axles with neither tandem exceeding 34,000.

ADDITIONAL REQUIREMENTS

MN § 169.822 subd. 6 defines tire width as the manufacturer's width as shown on the tire or the width at the widest part of the tire excluding protective side ribs, bars and decorations. The Manufacturer's tire width can be obtained from a tire spec book or by noting the first 2 to 4 digits of the full tire marking, i.e., 11:00 series tire is deemed to be 11 inches wide. In addition, the manufacturer's tire weight rating must never be exceeded.

The maximum of any axle is 18,000 lbs. on a 9-ton road and 20,000 on a ten-ton road, regardless of tire width.

For a tri-axle to be legal, the pressure varying mechanism for the tri-axle must be outside the cab. The raising and lowering device may be inside the cab.

Additional Policies/Procedures

1. Net Weight automatic scaling/Print out Operation

   The tare weights supplied by the contractor on the Weight Information Cards are to be used in computing the actual gross vehicle weights from the net weight scale tickets. These tare weights shall be verified by random checks, during the duration of the project, at a certified scale of the contractor's choice.

2. For loads that are measured for payment by loose volume, the following shall be the Mn/DOT policy.

   a. Tare Weight: Same as I above.

   b. The difference between the tare weight and allowable legal gross weight will be the net weight to be used in determining the pay quantity.

   c. The weight per cubic foot of the material to be hauled must be determined. This may be done by the following method:

      - Load tared truck with the material to be hauled and weigh on an acceptable scale.
      - Determine volume of the truck box that the settled loose material is occupying.

- Divide the net weight of material by the determined volume to obtain the weight per cubic foot of material.
- Alternate methods of determining the weight per cubic foot of material considered acceptable by the Project Engineer may be used.

d. The net weight divided by the determined material weight will be the maximum volume to be used for pay quantity.

e. A marker shall be placed on the side of the box to correspond to that volume or a lesser volume.

f. The measurements that correspond to the marked volume being used will be recorded on the Computation of Truck Box Capacity form and the contractor will be notified of that volume to be used for pay purposes.

g. The above procedure will be followed for each type of material (granular borrow, topsoil borrow, etc.) to be measured by loose volume measurement. If this procedure is followed, it is not necessary to process a Change Order for a change in method of measurement. The fact that this procedure was followed in determining the allowable box capacity shall be noted on the Computation of Truck Box Capacity form. This only applies to loose volume determinations. Spot checks of the loads, to ensure conformance with the above-determined volumes, will be conducted as directed by the Engineer as provided for in Mn/DOT Specification 1901.5C.

3. For loads that are not measured for payment by weight, and the net weight of the load is known, such as concrete ready-mix trucks, concrete batch trucks, bituminous distributor, or other similar vehicles, the following shall be Mn/DOT policy.

   a. Tare Weight: same as 1 above.

   b. The difference between the tare weight and allowable legal gross weight will be the net weight allowed to be hauled.

   c. Tickets or invoices certifying the material will not be issued for any loads known to exceed the allowable legal gross weight.

4. For loads that are not measured for payment by weight and the net weight of the load is not directly known, the following shall be Mn/DOT policy.

   a. Loads will be randomly selected at the Project Engineer’s discretion to check if loads are within legal weight requirements.

b. Loads shall be weighed on an approved scale at the Contractor's expense or weights may be checked by procedures outlined for L.B. measurements.

c. Should the contractor persist in hauling overweight loads the State Patrol or appropriate law enforcement agency may be contacted to determine action to be taken. Minnesota Statute 169.85

Gross Weight Table – Minnesota Statute 169.824. Subd. 1

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Daily Diary

Keeping project records, including the preparation, assembly, and preservation of such records is considered one of the most important duties and responsibilities that the Engineer delegates to the Inspector.

Diaries are kept to provide a complete narrative picture of the project, covering both the normal work processes and anything unusual that might have occurred on the project. The diary is used to document work progress, site conditions, labor and equipment usage, and the contractor's ability (or inability) to perform his/her work, and can provide valuable information necessary to accurately reconstruct the events of the project in preparation of a claim. It is a collection point for many of the project's pertinent facts arrange in any chronological order. It may show: how questions were answered, how problems were solved, and unusual conditions pertaining to working days charged. In maintaining these reports, project personnel must be consistent in recording the events and activities on the job, particularly those relating to claims or potential claims. Daily diaries are the key to claims avoidance and mitigating damages. It is also available for reference long after the work is complete.

Failure to record an event carries with it the implication that the event did not occur or was insignificant and threatens the credibility of the entire log.

- The diaries and daily or other reports are meant to supplement each other and do not need to contain identical information.
- The diaries and other reports are public record and may be used in case of litigation.
- Include only factual information in them.
- Minimize personal remarks, which may not be factual, about operations or personnel of the Contractor, Agency, or other organization. Such remarks may be used to demonstrate the inspector was hostile and did not behave in a manner consistent with good faith.
- All entries should be clear, neat, and most importantly, legible.
- Summarize key points of any discussion of work activities with the Contractor.
- Be specific.

Each technician assigned to a supervisory position or as Inspector of a major phase of a contract such as grading, bridge, or street inspection is encouraged to keep a diary. An Engineer or Project Supervisor exercising supervision of a project need not maintain a daily diary; however, entries should be made in an Inspector's diary whenever an event occurs that is likely to require personal involvement later. Diaries must be kept for each separate contract even though there may be two or more contracts within the same general area that involves the same contractor and engineering personnel. The diaries will become an important part of the project records if the project is subjected to audit, investigation, or litigation. To be effective, all entries should be accurate and concise yet complete enough so that the writer can recall the events early. No personal opinions or editorial comments are to be made in any diary that is a part of the project records.

All diaries are to be kept in bound field notebooks or in an approved electronic format. Each book is to be labeled and indexed but pages need not be numbered since all entries are dated. Label the complete

set of diaries uniformly; place the project, highway, and contract numbers on the front cover, together with other information indicating the scope and contents of each book.

Entries are to be made each day the diarist is on or involved with the project. The entry for each day must be dated. Note all critical changes at the time of change. Entries should be referenced to the appropriate stationing or other convenient reference.

When the project is small or will only require a minimum amount of staking, supervision or inspection, all entries may be made in one book, which will be known as the project diary.

Engineer's Diary/Project Diary

The Project Engineer is responsible for ensuring that a Project Diary is kept current for every construction contract. The Project Engineer may delegate the responsibility of keeping the project diary to the Chief Inspector. The Project Diary is a recorded collection of events, data, occurrences, instructions, situations, circumstances, and work performed each day during a construction project. Data is collected on every phase of work performed by a contractor, subcontractor, or utility company. Recorded information must be clear, detailed, accurate, complete, and objective. Anyone reading the Project Diary should be able to comprehend the project status and determine work performed. The Project Diary should be used to record all matters of importance which are not covered by other routine reports or may contain a record of routine matters if the circumstances are unusual, conferences with the Contractor, agreements made, special notes regarding equipment or organization, labor conditions, weather or other causes for delays if of any consequence, and any other matters that might have a bearing on the completion of the project.

Entries that may prove helpful include:

- Weather conditions affecting operations and temperature range. Identify days when crews were sent home or were unable to work due to weather or field conditions.
- Contractor's work force, equipment, and hours worked. Describe inefficient operations and poorly maintained equipment.
- Description of major construction activity. Include locations and approximate quantities. Description of any extraordinary work being performed.
- Controlling item(s) of work.
- Comments on the progress of operations as compared to the Contractor's approved schedule.
- Suspensions and resumptions of contractor operations. Causes and dates should be recorded.
- Utility operations. Report on their progress, conflicts with contractor operations and any resultant delays, and quality of workmanship as it affects the project.
- Summary of significant conversations. Include orders to the contractor, especially those pertaining to work schedule, work methods, materials, or payment; directions and advice from supervisor, and discussions with FHWA representative, property owners, local officials, and utility and railroad representatives.
- Reports of meetings and conferences. Record all sources of dispute and subsequent decisions.
- Comments on construction safety hazards and corrective measures.

- Unusual or materially different physical working conditions from those expected under the contract. Record all significant information about the working conditions, progress of work, working force, equipment and materials, which would be of value should the contractor file claims for extra compensation.
- Disagreements with the Contractor over work quality or performance, including rejected work or materials and reasons.
- Delays, difficulties, accidents, utility damages, and other unusual conditions.
- Lane closures, traffic disruptions, etc.
- Days charged and days worked. If no day is being charged, the reason for lost time days or periods when no work is in progress or no work was accomplished and reasons why.
- Describe factors or conditions that may hinder the Contractor's operations and cause delays. Also, include the time of suspending or resuming work and explanations.
- Significant information on other work operations if not recorded in a separate field inspection diary.
- Major discrepancies in the contract. Necessary changes and subsequent actions taken to correct the situation should be recorded.
- Work or materials rejected and why.

Inspector's Diary

Each Inspector who is charged with the responsibility of reporting a construction activity must keep a daily diary. Ordinarily, separate diaries should be kept for such major construction items as grading, bridge, base and surfacing construction; for plant production of aggregates, concrete and bituminous mixtures and for specialty items such as fencing, lighting and signing. These, however, depend on the size and scope of the contract. In any event, all construction operations must be covered whether in a single diary or in separate diaries. When the contractor operates on a multiple shift basis the entry for each succeeding shift is made in the same diary under the date on which the shift started. The Inspector on each shift is responsible for making and signing his/her own record.
The inspector's daily diary should include a record of the day's happenings, contractor activity on the project, instructions given the contractor, and extra work order agreements made. Daily diaries can assume legal importance.

If a diary is lost, stolen, or otherwise misplaced, a new diary should be started immediately. The first entry in the replacement diary should document the conditions relative to the loss of the original diary and then continue with the usual diary entries for the remainder of the project.

Inspectors should include in their diaries all decisions made and all actions taken each day, material record and progress estimates and other information, which might be of assistance in case of dispute. When one individual makes all entries in a diary, a statement to this effect, along with that individual's signature may be placed on the front page of the diary. Otherwise, the person making the entry must sign each separate entry.

***Entries that may prove helpful include**:*

- Weather conditions and how they affect operations

- Contractor forces, equipment, materials used, and hours worked.
- Detailed description of work, including location, sizes, quantities and methods, the quality of workmanship, difficulties encountered and method of correction.
- Percent of delays, reasons for the delays and subsequent corrections by the contractor.
- Inspection checks, tests and samplings. Material accepted on visual inspection or material rejected.
- Information as to time, materials, working force and equipment used for authorized extra work, i.e., claims, force account.
- Instruction from Mn/DOT representatives.
- Instructions given to the contractor.
- Requests from the contractor and disposition of those requests.
- Contact with property owners, utilities, the public, and others.
- Contractor compliance with specifications.

Remember to date each page (include year) and sign each entry.

The diary should be turned into the District Office upon completion of the contract work.

For Projects with Utility Agreements

Document the Utility company's time, workforce, equipment on the diary; this replaces the daily Utility Report. Document any overtime worked by Utilities. The Utility company may be added to the diary similar to the method used to add Contractors.

Survey Chief's Diary

Survey Chiefs may keep a diary. If they do, it should include a brief listing of the survey crew activities for each day, indicating the progress of staking operations, difficulties encountered, contact with the contractor, any resetting of stakes necessary, and other information indicating the sequence and adequacy of construction surveying.

Also included, along with the date, weather, and temperature data, should be the names of the individuals working in the survey party each day. The person making the entry must sign each daily entry, unless one individual makes all entries in which case that person should sign the diary on the front page.

Critical Path Management (CPM) Projects - Weekly Diary and Working Day Documentation

Projects that utilize 1803.1 CPM Special Provisions and their accompanying modifications to Special Provisions 1804, 1806 and 1807 will not be required to submit a Weekly Diary or Statement of Working Days to the contractor, nor be required as part of the finals package. It is still advisable to maintain project records documenting conditions that affect work in a Daily Diary or Daily Report.

Photography as Documentation

Should the project ultimately become immersed in a dispute, job photos can serve as an important element in the presentation of facts surrounding the details of a claim.

You may be asked to recall details of what you saw at the site some months or years after the site visit. Nothing will refresh your memory as well as a good photograph. Photographs provide excellent evidence, and are one of the least challenged tools used to document a case.

Take a lot of pictures. The most common problem is too few photographs. Photographs should be of high quality and should illustrate the facts of the site as accurately as possible. Know what the issue is that you're trying to document. Photographic documentation should tell the story with as little need for narrative as possible.

Remember, size and distance of objects in photographs can often be deceiving. Think about including a reference point in your photographs - a person, a notebook, a pen, or ruler are examples of common objects that can give a sense of scale to other objects in the picture. Remember too that photographs can also distort or understate conditions. Try to be objective in making your visual record. It is helpful to take a series of photos from varying perspectives as described below.

- Establish a reference: Take photos from a distance to establish perspective. Show the subject in reference to one or more permanent landmarks. If helpful, show the compass orientation of the subject.
- Medium shots: Take multiple photos to depict the object or event in context of the immediate surroundings. Shoot a series from all angles.
- Tight or Detail shots: Focus on the issue under review; photos should identify the specific item or event in question.

Type of Camera and Photographic Media

The following types of cameras are acceptable for use in the field:

- Digital camera.
- 35 mm still camera.
- Video camera.

Do not use a Polaroid camera to document case evidence. Polaroid photos are not very useful for evidentiary purposes because they can’t easily be enlarged or duplicated with quality.

Instructions for Taking Pictures and/or Video

Photographs/videos should be taken from the perimeter of the area in toward the center in increasingly close shots. Be sure to capture all objects and markings thoroughly so they can be identified later. Pencils, rulers, pens, and similar familiar objects--even a person--can provide a reference to the sizes of objects in the frame.

Important notes:

- Use natural light wherever possible, even if you must use fast film.
- Never videotape a violation scene with the recording microphone turned on. It is easy to reach erroneous conclusions, make other verbal mistakes, or make disparaging or prejudicial comments during a live narration. The video should be supported by live testimony later in the case without any taped comments that conflict with sworn testimony. Remember you cannot erase taped verbal errors.
- Be aware that you may need permission to record someone.

Identification of Photos/Videos

Identifying information must be written on the back of each picture (for prints) and/or in a "photo log" (for all types of cameras).

Documentation should include the following:

- Type of camera, film, and/or video equipment used.
- Date/time the picture/video was taken.
- Film roll/frame number (for 35 mm still cameras).
- A brief description of the photograph's location, content, or what is being documented, and direction of the view depicted in the picture. Names of individuals present when the picture was taken and their place of employment and position.
- Light conditions and/or weather.
- Person's name who took the picture(s) and his/her signature or initials.
- Chain of custody on the photographs or video.

Storage of Photographs/Videos

- Prints and negatives - keep with the photo log in the field staff file. Photos should NOT be attached to sheets of paper with tape.
- Digital photo files – copy to a CD/DVD marked with the date/location and keep with the photo log in the field staff file. Backup copies can be kept in a secure electronic file location. This location should be noted in the field staff file.
- Videotapes – keep in their individual cases, marked with the date/location and keep with the photo log in the field staff file.

Suggested Photos:

Preliminary Photos
Prior to construction, take photos over the entire project. Include:

- areas that are not to be disturbed,
- areas of unusual terrain,
- existing structures and water courses which are to be replaced or altered,
- existing road conditions,

- other locations where changes of interest will occur.

Progress Photos
As construction progresses, take photos showing:

- intermediate stages of work,
- equipment and adequacy,
- construction methods employed,
- other indications of progress.

Feature Photos
During construction, take photos of all features of special interest and significance:

- special construction methods
- new equipment and experimentations,
- subsurface or latent physical conditions

Final Photos
Upon completion of the project, photos should be taken over the entire project as “repeats” of the preliminary photos to show the end results. Other photos should be taken as necessary to show the completed construction at all points of interest. All repeat photos should be taken from the same camera position as the preliminary photos so the before and after relationship will be a true representation.

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DOCUMENTATION OF PAY ITEM QUANTITIES

Introduction

This chapter is intended to provide a reference and to act as guidance for the project office in the keeping of Construction Contract Records. While there may be differing needs or circumstances that must also be met within each project office, it is intended that this guidance be used to help identify the minimum requirements that are necessary in order to establish an adequate method of record keeping. These minimum requirements also help to establish a basic level of uniformity among all project offices statewide. This can help to facilitate the review of records by others and promotes greater efficiency when engineering personnel are transferred or reassigned between different projects or even different project offices. If a clear method of record keeping can be identified prior to the beginning of work, then original field notes and records can be easily prepared and maintained as the work progresses. This will also help to reduce the effort required to produce the final contract records upon completion of the project.

Successful contract documentation requires that measurements and calculations supporting contract payments are accurate and that records of these actions are complete.

Contract records and documentation must be sufficiently detailed and maintained in a manner that will withstand an audit and be clear enough to be read and understood by anyone unfamiliar with the project. The Project Engineer is responsible to ensure that these accurate and complete records are maintained for all construction project work.

It is recommended that original field notes be kept in a form that can be filed and retained as basic documentation. Transcription of field notes to final record form should be avoided due to the possibilities of error and the unnecessary cost of duplication.

All personnel are responsible to ensure that notes are made correctly and are complete with all pertinent information.

Facsimile machines, scanned documents, and electronic mail are normal business practices in most state and private offices. It is acceptable to take action on these types of correspondence. Follow up mail copies are required for all issues that require an original signature.

Documents that must stand up in a court of law or meet the requirements of a State or Federal Audit require a signature. A signature, whether digital, electronic, or hand-written, is primarily a symbol signifying intent and identifying those who worked on the documentation record.

The Office of Construction and Innovative Contracting (OCIC) encourages the project offices to utilize electronic resources to aid them in their work, and does not wish to stifle creativity in the use of those electronic media. However, it is important to be able to identify an original document, who created it, and to maintain a consistent approach to documentation throughout the State in order to meet the requirements of the contract, an audit, or a court of law. The use of electronic records and signatures is voluntary.

General Responsibility

The Engineer is responsible for ensuring that all quantity measurements are made and documented in accordance with the contract and instructions included in this manual. Section .420 of this manual includes a compilation of the methods of measurement, basis of payment, and documentation requirements for all pay items contained in the Standard Specifications. The contract may address specific methods of measurement and payment requirements pay items that supersede the Standard Specifications.

Item Record Account (IRA)

The IRA is the basis of recording and documenting all pay quantities. Upon contract award, each contract pay item has an IRA that is downloaded from the Office of Construction & Innovative Contracting (OCIC) to the Engineer via the field computer application. Pay quantities may be entered directly on the IRA or transferred from other records. The quantity entries, including supporting documentation, serve as both partial and final verification that correct payments are made on all vouchers. There are two types of IRAs in which quantity entries are made by the Engineer: main body and back sheet, described as follows:

Main Body

All pay items in the contract for which the contractor submits a unit bid price, are referred to as "main body" items. Quantities for items are entered and documented as they are satisfactorily furnished and placed. See Section .420 of this manual for pay item documentation requirements and instructions.

Back Sheet

Back sheet pay items are for items with contractual payments provided for by the contract, excluding contract bid Items and Supplemental Agreement (SA) pay items. Back sheet payments require the creation of an IRA by the Engineer. The quantities for these items are entered as the items are satisfactorily furnished and installed. Each IRA entry for back sheet items must include a payment authorization. Examples:

- Credit taken for out of tolerance B624 Curb & Gutter as per Standard Specification 2531.3 K (1).
- Items for additional traffic control as per Special Provision S-_____.
- Water for dust control as per Standard Specification 2130.5
- Item provided for in contract, needed in additional group

Entries for Work Orders-Minor Extra Work payments must include the payment entries and a brief explanation of why the extra work was required of the contractor.

OCIC downloads IRA's for pay items created by SAs to the field upon approval of the agreement. When the download is properly installed into the field computer application, IRAs for each SA Item will be created.

Distribution of Pay Quantities by Group

Pay quantities on construction projects are usually divided into separate pay groups. The individual groups are identified on the first page of the payment voucher and further explained on subsequent pages. Group splits are required in order to account for separate funding sources. The Mn/DOT Office of Finance makes appropriate billings based on the final voucher quantities.

Review group descriptions and locations prior to documenting and recording pay quantities. An IRA is provided for each group in which a pay item is included.

The Engineer is responsible for appropriate pay group distribution of all contractual pay items and back sheet payments.

If there is a Municipal Agreement associated with a contract, see Use of Change Order (CO) in this section.

Change in the Method of Measurement of a Contract Pay Item.[1]

Any change in the method of measurement from the method specified in the contract or special provisions shall be clearly documented either by CO or by entering an explanation of the change on the applicable IRAs. The unit of measure, for payment purpose, must remain the same as the original contract item, and may require a conversion factor to accomplish. Any conversion factor(s) that are be used must be included either by CO, on the supporting documentation, or with the explanation in the "Remarks" field of the IRA. Factors for conversion shall be established by the Engineer and agreed to by the contractor in writing.

For Example: Item Gravel Base Class 5 is designated by the contract to be paid for by the ton. The method of measurement is changed to Cubic Yard (LV). In this case, the Cubic Yard total obtained by field measure must be converted back to tons for payment by using a conversion factor similar to 1.0 Cubic Yards. (LV) = 1.40 tons. Using this example, if a CO is not used, the following (or similar) statement would be necessary either on the supporting documentation or directly on the IRA in the "Remarks" field.

[1] Mn/Dot Standard Specifications for Construction, 2005 Edition, 1901.11

“The method of measurement for Contract Item No. 2211.501 Gravel Base Class 5 is changed from ton scale weight to Cubic Yards (LV). Cubic Yard totals will be converted back to tons for payment by using a conversion factor of 1.0 Cubic Yard (LV) = 1.4 tons."

If a CO is used to accomplish a change in the method of measurement, it would be written to include all of the above requirements. When a CO is used, the "Remarks" field of the IRA would simply state "See Change Order # _____.”

In all cases, whenever a change in the method of measurement occurs, the new method of measurement will dictate the supporting documentation that must be properly referenced on the IRA and submitted to OCIC with the final records.

Supporting Documentation

The term Supporting Documentation is defined as any physical record that was created to serve as verification of either a partial or final pay quantity of a pay item. For daily update entries, the nature of these records must be entered on the IRA in either the "Document Location / Verification" field or the "Remarks" field. (Example: Concrete Measurement Book). For final documentation, this same Concrete Measurement Book that was used as support for each daily entry, will be completed and more specifically referenced in the "final Document Location" field as BOOK B-1 PAGES 1-8 CONCRETE WALK. Supporting Documentation includes, but is not limited to, various books, booklets, envelopes, forms, packets, quantity tabulations, data collection forms, and other field measurements/computations.

No erasures or overwriting is permitted in any documentation. If an error is made it will be corrected by neatly crossing out the erroneous data with a single line and entering the correct data in the most logical place.

Field Notes

Field notes are one of the many items that might be considered as a Support Document. It is recommended that all field notes, base line notes, centerline notes, and grade books be recorded in bound books. If loose-leaf books are to be used, care must be exercised to prevent lost pages. Notes should be recorded in a manner that is neat, clear, un-crowded, and in sufficient detail to be easily understood.

Original entries later determined to be in error must not be obliterated by erasing, application of correction fluid, taped over, or in the case of computer-generated documents, deleted. Instead, a line should be cleanly drawn through the mistaken entry and corrections entered directly above with the initials of the person making the change. This is very important, as erasures, or deletions will destroy the legal standing of notes. When revisions require abandonment of a considerable portion of notes, they shall be crossed out and a cross reference made of the book and page number where the revised notes may be found.

Each Final Records book should be labeled. Each book is to be numbered and a table of contents included on the first page. It is essential that original field notes and documents be carefully organized, kept, recorded, and maintained in safe filing facilities during the active stage of a project. At all times, when not in use, all support documents, reports, survey notes, etc., should be kept in fire resistant files where possible.

Requirements for Notes

The following notations should be carefully observed for correct procedure:

1. Each set of notes must contain the date when they were made and the initials of the persons making them.

2. Each set of notes, should contain the date when the phases of work are accomplished, the initials of the persons who compute and check the quantities noted, the dates when the quantities were computed, the dates when the computations were subsequently checked, the locations where the work was performed, and the corresponding group number (if more than one group on project).

3. When field notes are used as the basic support document in supporting a payment to the Contractor, they must include the date and initials of the person making the entry into the computer application and the person verifying the entry.

4. Each pay quantity identified in the field notes should be designated with the corresponding item number and correct item name listed in the contract.

5. It is recommended that the correct field book or loose leaf sheet always be used for the particular kind of work being staked or measured.

6. The degree of accuracy required for computing unit quantities should be consistent with standards established in Chapter 5-591.420.

7. It is recommended that sets of field notes and field books be numbered and titled in order to prevent their loss and to aid in tracking payments and their supporting information. Information and documentation loses its value if it cannot be retrieved.

8. Notes should be kept so that work can be checked without returning to the field. Use positive controls. If notes are properly kept, any person familiar with the project should be able to verify accuracy of the work from information contained in notes.

Source Documentation

Application

When using "Source" documentation, the user is declaring that supporting documentation is nonexistent and was at no time ever created to document the quantity. If any supporting documentation does exist, it must be submitted with the final records and "Source" cannot be used. To qualify as "Source" documentation, all entries must be entered directly on to the IRA via the field computer application Update option, with no intermediate transfers of entries taken from other documents.

Verification

In order for "Source" documentation to be valid it must be accompanied by an explanation of how the quantity being entered is verified. For daily Update computer entries, this verification must be entered on the IRA in either the Document Location / Verification field or the "Remarks" field. (Examples of this verification would be: field measure, field count, date completed, etc) As final documentation, the Documentation Location field of the field computer application Certify option will simply state "Source Documentation" as a reference.

The use of "Source Documentation" does not relieve the user from meeting any of the quantity verification requirements. Sufficient data to fulfill all documentation requirements for the item must be contained solely on the applicable IRA.

Quantity Documentation Using the Computer Generated Data Collection Forms (Also referred to as Field Record Documentation or FRDs).

Using the Reports option, the user has the capability to create Data Collection Forms within the field computer application for use in documenting pay quantities. These forms are self-explanatory and are designed to fulfill daily documentation requirements when completed correctly. When FRDs are used, they become part of the supporting documentation and must be properly referenced on the applicable IRA and submitted with the final records.

The Data Collection Form (FRD) will be acceptable documentation in lieu of any specific Mn/DOT forms requirements contained in section .420 of this manual provided all of the quantity documentation required by the form is present. However, there may be a reason other than quantity documentation that would cause you to adhere to the required form. (Example: You would want to use the required Mn/DOT Form 2210 Pile Driving Report to document 2452 Piling pay items because in addition to quantity documentation Mn/DOT form 2210 requires you to enter other vital information (i.e. pile penetration, bearing, elevations, etc.)

(P) Plan Quantity Documentation[2]

(P) Quantity is NOT the same as Lump Sum. (P) Quantities must be verified in the field and that the original plan dimensions are still valid. Verification may include length-width-depth checks, stake checks, form checks, spot check measurements.

(P) Plan Quantity Item designations are found only in the Statement of Estimated Quantities contained in the project Plans. NOTE: Even though the (P) designation is contained in the Statement of Estimated Quantities the Engineer can change the method of measurement from (P) Plan Quantity to an actual field measured item, on any item so designated, provided it be agreed upon by both the Engineer and the contractor. The inverse is also true, as any pay item can also be designated as a (P) Plan Quantity item with the mutual agreement of the Engineer and contractor, even if it is not so designated in the Statement of Estimated Quantities.

Manually entering (P) Plan Quantity Designations in the Field Computer Application

(P) Plan Quantity Item Designations are not included in the original project download to the Engineer. All (P) designations must be manually entered into the Field Computer Application in order to match the (P) designations contained in Statement of Estimated Quantities plan sheets. These entries should be made in Field Computer Application at the onset of the project.

Verification / Documentation

If no change in the Contract Proposal Quantity occurs, final Documentation of a (P) Plan Quantity is accomplished by completing the following "Plan Quantity Statement"

"The finished product is in close conformity with the specified dimensions as verified by the _____ method."

The blank space provided in the above statement will be used to indicate the method of **checking** that was used in lieu of actual field measurement to verify that the specified dimensions used to originally establish the Contract Proposal (P) Quantity were attained. (Examples: form check, depth check, length-width-depth, stake check etc. These check measurements will be retained in the Engineer's project records to substantiate the validity of the Plan Quantity statement.

Documenting Changes to (P) Plan Quantity

In order to provide flexibility for increases or decreases all (P) items are bid by a measurable unit and price (such as $4.00 per Cubic Yard). For quantity documentation purpose, any change

[2] Mn/DOT Standard Specifications for Construction, 2005 Edition, 1901

in (P) Plan Quantity is classified as either a *computed only change* or an *actual field measured change.*

Documenting a Computed Only Change to (P) Plan Quantity – [New (P) Plan Quantity]

If the Contract Proposal Quantity of a (P) item is changed based on computation only, (either in part or as a whole), the single "Plan Quantity Statement" and "Source Documentation will then apply to the new (P) Quantity arrived at by adding (or subtracting) the computed changed portion of the final Pay Quantity to the original contract Proposal Quantity. Computations of this type that are not based on actual field measurements will remain in the Engineer's files.

Documenting an Actual Field Measured Change to (P) Plan Quantity – [(P) Plan Quantity Plus]

Any actual field measured additions or subtractions to the (P) Plan Quantity must include all "Supporting Documentation" with the final records. On the IRA, any actual field measured change must be documented separately from the computed only changes portion of the final Pay Quantity.

Use of the Change Order to Document Changes in (P) Plan Quantity

It is recommended to document changes to (P) Plan Quantity via Change Order. This is especially true when dealing with (P) items that have a large quantity. [Example: Item 2105.501 Common Excavation 785,000 Cu. Yd. (P)]. It is not unusual for an item such as Common Excavation to undergo both computed and actual field measured changes several times throughout the life of the Contract. In these cases, the Change Order is a good tool to document each change systematically. In all cases, the following information is required to document any change to (P) Plan Quantity:

- Reason for change
- Location
- Specific Increase / Decrease Quantity
- Method of Measurement- Actual Field Measured or Computed

Use of Change Order on Projects that have Municipal Agreements with (P) Plan Quantity Items

When a Municipal Agreement is connected to a Contract, it is highly recommended that any changes in quantity of a (P) Plan Quantity Item be documented by Change Order. Use of a Change Order will serve to clearly delineate the proper quantity splits for each Group. The Change Order will also eliminate the need for the Mn/DOT Municipal Agreement section to search field records to locate documentation. Municipalities routinely request this information

/documentation to verify their portion of financial responsibility in the project. (Often a municipality will request this information long after the project is completed.)

In the absence of a Change Order, such changes may also be made by including all of the above-required information on the applicable IRAs or by separate record. In all cases, documenting changes to (P) Plan Quantity Items must have a clear and logical audit trail.

Secondary Documentation

When it is found impractical or impossible to comply with the documentation requirements of a pay item as set forth in this manual, secondary documentation can be used.

Secondary documentation is a three-step process whereby the Engineer:

- Recognizes the problem of documenting a pay item in the manner required.
- Resolves the situation by using a logical, secondary method to accomplish the documentation.
- Explains the circumstances necessitating the use of Secondary Documentation

An explanation must be included for each item where Secondary Documentation is used. This explanation can either be entered directly on the IRA or affixed to the actual Secondary Documentation submitted with the final records.

When original documentation is lost or destroyed due to unforeseen circumstances such as fire, flood, vandalism, etc. it will become necessary to document pay items in a secondary manner. Each situation is unique. Prior to attempting to document pay item(s) in this manner the project Engineer should contact the Contract Administration Supervisor in OCIC to discuss and determine what secondary documentation is appropriate (or possible).

SPECIAL NOTES

Standard Plate Items

If any pay item is placed in accordance with a Mn/DOT Standard Plate that has predetermined quantities set forth (or formula for such quantities), these quantities (or formulas) will be accepted in lieu of any measurements or computations required elsewhere in this manual. Enter a statement on the IRA (or other supporting documentation) that confirms the item was placed in accordance with the provisions of said Standard Plate. (Example: Class II Riprap placed in accordance with Standard Plate No. 3133C.)

Special Pay Items

Special pay items, not specifically covered by the Standard Specifications, shall be measured and documented in accordance with the method of measurement and basis of payment outlined in the special provisions. If a special pay item is not addressed in the special provisions, measurement and payment shall be made in accordance with the Standard Specifications as applied to a similar or "like" pay item.

Invoice Documentation (Non-Force Account)

When shipments are received on the project and the contractors invoice will serve as documentation of a pay item, the inspector shall make certain that the material furnished is indicative of the quantities shown on the invoice. The inspector shall initial the invoices to verify the quantity of material used and identify the State Project No. on each invoice.

Lump Sum Items

Pay Lump Sum items as directed in the Contract. Pay percentage complete for item on each partial estimate if no schedule of payment is provided. Pay 100 percent upon satisfactory completion of the item. All lump sum items used must have a final quantity of one.

Vehicular Measure

The hauling capacity of trucks, trailers, and semi-trailers shall be documented on Form 2141 (Computation of Truck Box Capacities). Calculations may also be made based upon verified Manufacturer’s truck bed dimensions supplied to the Contractor by the Manufacturer. The hauling capacity of scrapers shall be documented by listing the make model number and manufacturers rated struck capacity on form 28266 (Quantity Tally Sheets). If sideboards are added, measure and compute the added capacity on form 2141 and add it to the manufacturer’s rated struck capacity. Heaped capacity is restricted to elevating scrapers only.

Uniform Load Establishment & Method of Quantity Verification

There are numerous acceptable methods of establishing uniform loads and various methods of quantity verification. Often, the methods used are not readily evident by the documentation submitted with the final records. When this is the case, the Engineer will include with the final records, a short memorandum addressed to OCIC that explains the specific steps taken in both the establishment and the verification of such loads.

Uniform Load Documentation - Spot Checks

Documentation of Uniform Loads shall be accomplished on Weigh Tickets or form 28266 (Quantity Tally Sheets) and the daily spot checks.

Spot Check Weight - Spot checks will be as determined by the Engineer, and will be performed as follows: A loaded truck selected by the Engineer shall be stopped and directed to a commercial scale were the actual weight of material is determined to ensure that this actual load is equal to or exceeds the established uniform load weight. The commercial scale tickets showing tare, gross and net weight checks shall be recorded and submitted with the final, with proper reference on the applicable IRA.

Spot Check Volume - Spot checks will be as determined by the Engineer, and will be performed as follows: The contractor shall level the load upon its arrival at the point of delivery if so directed by the Engineer. No allowance will be made for material heaped above the struck capacity of the vehicle. The actual volume of material will be determined to ensure that this actual load is equal to or exceeds the established uniform load volume. The results of these spot checks may be recorded directly on form 28266 (Quantity Tally Sheets), or by separate record. All spot check records shall be submitted with the final, with proper reference on the applicable IRA.

Weigh Tickets

For Bituminous: The Contractor shall furnish an automated weigh scale and computer generated weigh ticket. The ticket shall indicate project number, mix designation (including binder grade), Mixture Design Report #, truck identification and tare, net mass, date and time of loading. Any deviations from the minimum information to be provided on the computer generated weigh ticket must be approved by the Engineer in writing.

For Structural Concrete from Certified Ready-Mix plant: See requirements in Standard Specification 2461.4 D7a. The ticket shall also include the following information printed with enough room beside each item to allow the field inspector to record the appropriate test results: air content, air temperature, concrete temperature, slump, cylinder number, location/part of structure, time discharged, and signature of Inspector.

A Field Inspector must initial all tickets at the point of delivery and verify the S.P. No. on each ticket.

Payment and documentation of materials received should be based on the original tickets received at the project site. Any tickets that may be identified as missing should be reconciled immediately with the Contractor so they will not be in contention for payment later.

Rounding Procedures

The "Unit" columns in section .420 of this manual show the units (Cu.Yd.; Lin. Ft.; 0.1 Cu. Yd.; etc.) to which the individual contract pay items will be paid. Items that are to be paid to fractions of the unit are so designated in this "Unit" column. In addition, pay items shown as fractional quantities in the "Approximate Quantities" column of the proposal should be rounded off and paid as fractional quantities. All other units will be paid to the closest whole unit.

Exceeding the accuracy of the requirements shown in the "Unit" columns in section .420 of this manual will be acceptable for all pay items. Rule: No pay item used will be rounded to a "0" (zero) final pay quantity. The objective of the rounding procedures is to create a fair payment for any pay item. Consistent math rounding procedures throughout a given pay item will be used in all intermediate measurements leading up to the final pay quantity for that item.

Rounding Exception

When a pay item has a substantial unit price, paying to the closest whole unit can at times cause undue overpayment or underpayment to the contractor. (For example, Structural Concrete @ $300.00 per cubic yard). In this case, the Engineer may use discretion to invoke a "Rounding Exception."

Using the above structural concrete example, the Engineer may want to pay to the closest 0.1 of a cubic yard rather than to the closest 1.0 cubic yard as designated in section .420 in this manual. This "Rounding Exception" can be used on all pay items except those items that are to be measured as "Each," "Lump Sum" or (P) Plan Quantity. Common sense will prevail and no special notation on the IRA will be required when "Rounding Exception" is used.

Elimination of Pay Items / Pay Items Not Used or Needed

Whenever any pay item is either eliminated by the Engineer or not used or needed, the IRAs for those pay items will show a final Pay Quantity of "0" (Zero). In addition, an explanation of why the item was not used must be given in the "final Documentation Location" or "Remarks" field of the applicable finalized IRA. Examples: (Item not used; item eliminated by Engineer or similar statement).

Special Forms Requirements

It is acceptable to replace any of the special forms required by Section .420 of this manual with a district office computer generated version. However, in order to be acceptable, all of the information and documentation requested by the original form must be accurately included with the computer-generated version. (Also, see Data Collection Form (FRD) mentioned previously in this section).

Special Pay Items

Special pay items, not specifically covered by the Standard Specifications, shall be measured and documented in accordance with the method of measurement and basis of payment outlined in the Contract Special Provisions. If a special pay item is not addressed in the Contract Special Provisions, or in this section 420 of the Contract Administration Manual, measurement and payment shall be made in accordance with the Standard Specifications as applied to a similar or "like" pay item.

Special pay items are listed in the Contract Special Provisions using a .600 suffix after the 4 digits item number. [Example: Item 2506.603 - L.P. Catch Basin Design Special]

Spec. No.:	2021
Contract Items:	Mobilization
Unit - U.S.:	L. S.
Unit - Metric:	L. S.
Documentation:	Enter on I.R.A. as a decimal for the Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.
Method of Measurement:	Lump Sum - Engineer will estimate the dollar value percentage of the completed work for the Partial Estimate. See Standard Specifications for Construction.

Spec. No.:	2031
Contract Items:	Field Office, Type _____ Field Laboratory, Type _____
Unit - U.S.:	Each
Unit - Metric:	Each
Documentation:	Record on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.
Method of Measurement:	Unit - Payment based on number of satisfactory accepted units.

Spec. No.: 2051
Contract Items: Maintenance & Restoration of Haul Roads

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record in remarks column on the I.R.A. the date the haul road was released. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - One hundred percent (100%) of this item paid upon satisfactory restoration.

Spec. No.: 2101
Contract Items: Clearing and Grubbing

Unit - U.S.: Acre
Unit - Metric: *(Hectare)*

Documentation: Record topographic notes. For the Final, submit the topographic notes with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute the horizontal area bounded by lines 10 feet, (3 m) outside the line of trunks of trees cleared, or stumps grubbed. Compute each area to the closest 0.05 acre, (0.02 ha).

Spec. No.: 2101 (cont.)
Contract Items: Clearing and Grubbing

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. as a decimal for Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - Pay the percent completed in each Partial Estimate. Pay 100% of each item on the satisfactory completion of all clearing and grubbing.

Spec. No.:	2101 (cont)
Contract Items:	Clearing Grubbing
Unit - U.S.:	Tree
Unit - Metric:	Tree
Documentation:	Record tree count for each item, in each area as part of the notes. For the final, submit these records with proper reference on the I.R.A.
Method of Measurement:	Unit - Count for payment all trees more than 4", (100 mm) in diameter at a point 2 feet, (600 mm) above ground, or at cutoff point for stumps.

Spec. No.:	2102
Contract Items:	Pavement Marking Removal Pavement Marking Removal – Temporary Pavement Marking Removal - Permanent
Unit - U.S.:	S.F
Unit - Metric:	*(Square Meter)*
Documentation:	Record location, dimensions and computations. For the Final, submit these records with proper reference on the I.R.A.
Method of Measurement:	Area Computation - Measure and compute the area of the markings as Acceptably Removed. Striping areas will computed on the basis of nominal widths and actual lengths as originally applied and still evidenced at the time of removal.

Spec. No.:	2102 (cont.)
Contract Items:	Pavement Marking Removal Pavement Marking Removal – Temporary Pavement Marking Removal - Permanent
Unit - U.S.:	L.F.
Unit - Metric:	*(Meter)*

Documentation: Record location and measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Feet, *(meter)* - Measure length of the original markings as acceptable removed. Removal length will be computed by the actual length of each pavement marking removed and will not include the gap between the broken lines.

Spec. No.: 2103
Contract Items: Building Removal

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. For the Final, submit as Source Documentation.

Method of Measurement: Lump Sum - All buildings, on the project, removed will comprise Lump Sum.

Spec. No.: 2103 (cont.)
Contract Items: Disconnect Sewer Service
Disconnect Water Service

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2103 (cont.)
Contract Items: Basement Fill

Unit - U.S.: C.Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record inside dimensions and computations. Record date of backfill as part of the notes. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Measure and compute fill as volume of air space inside the basement walls below the ground level.

Spec. No.: 2104
Contract Items: Remove
Salvage

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record location and length of each removal and/or salvage. Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Feet *(meter)*- Length measurements will be made along the longitudinal center line of the structure, parallel to the base or foundation upon which the structure is placed, and from end to end of the structure as removed. Pipe measurements will be made from center to center of junction fittings, catch basins, or manholes, and will include the length of any aprons required to be removed in conjunction therewith.

Note: *Specify Item Name, such as: culvert pipe, sewer pipe, drainpipe, curb and gutter, curb, sidewalk, fence, concrete or masonry structures, railway track, manholes or catch basins, integrant curb, concrete pavement, bituminous pavement, pavement, trench pavement, guard rail, water well, etc.*

Spec. No.: 2104 (cont.)
Contract Items: Remove

Unit - U.S.: S.F. /S.Y.
Unit - Metric: *(Square Meter)*

Documentation: Record location, dimensions and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute the in-place area. Removal includes base and cushion courses if applicable. Also includes the removal of integrant curb, if applicable.

Note: *Specify Item Name, such as: culvert pipe, sewer pipe, drainpipe, curb and gutter, curb, sidewalk, fence, concrete or masonry structures, railway track, manholes or catch basins, integrant curb, concrete pavement, bituminous pavement, pavement, trench pavement, guard rail, water well, etc.*

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Spec. No.: 2104 (cont.)
Contract Items: Remove

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record three dimensional sketches, measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Measure length, width and depth, and compute volume.

Note: *Specify Item Name, such as: culvert pipe, sewer pipe, drainpipe, curb and gutter, curb, sidewalk, fence, concrete or masonry structures, railway track, manholes or catch basins, integrant curb, concrete pavement, bituminous pavement, pavement, trench pavement, guard rail, water well, etc.*

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Spec. No.: 2104 (cont.)
Contract Items: Remove
Salvage
Abandon

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record location of each removal and/or salvage. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Note: *Specify Item Name, such as: culvert pipe, sewer pipe, drainpipe, curb and gutter, curb, sidewalk, fence, concrete or masonry structures, railway track manholes or catch basins, integrant curb, concrete pavement, bituminous pavement, pavement, trench pavement, guard rail, water well, etc.*

Spec. No.: 2104 (cont.)
Contract Items: Sawing Concrete Pavement
Sawing Bituminous Pavement

Unit - U.S.: L.F
Unit - Metric: *(Meter)*

Documentation: Record location and measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Feet, *(meter)* - Measure length along the saw cut line(s) as staked by the Engineer.

Spec. No.: 2105
Contract Items: Common Excavation
Sub-grade Excavation
Unclassified Excavation
Common Channel Excavation
Rock Excavation
Rock Channel Excavation
Muck Excavation

Unit - U.S.:
Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

Spec. No.: 2105 (cont.)
Contract Items: Common Excavation
Unclassified Excavation

Common Channel Excavation

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-section notes in x-section book. Plot area and show computations on x-section rolls. For the Final, submit the x-section book and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross Section Measure (Re-measurement) - Volume will be computed by the average-end-area method, using the latest available x-section as the original x-sections.

When Common Channel Excavation is Not a Bid Item - Excavation ordered and performed that would otherwise be classified as Common Channel Excavation will be paid for separately at the Contract price for Common Excavation in the body plus $1.00 additional per C.Y., ($1.30 additional per m3) as a back sheet item.

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Spec. No.: 2105 (cont.)
Contract Items: Rock Excavation

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit the x-section book and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross Section Measure (Re-Measurement) - Use "the rock when stripped" elevations as the original x-sections.

Over-break Allowance - Compute volume using a 6-inch (6"), (150 mm) over-break allowance outside the grading section as staked, with the exception that 20 inches (20"), (500 mm) (measured horizontally) will be allowed outside of back-slopes in hard rock types where

pre-splitting is not required. No over-break allowance will be made for pre-split back-slopes.

When Rock Excavation and Rock Channel Excavation are not bid Items - If the Proposal fails to include a bid item for rock excavation or rock channel excavation, and material is uncovered that is so classified, excavation of the rock will be paid for separately at the Contract price for common Excavation or common channel excavation, plus $12.00 additional per cubic yard, ($16.00 *additional per M* 3) as a back-sheet item. If no bid item is provided for common channel excavation, excavation of materials classified as rock channel excavation will be paid for at the Contract price for common excavation plus $13.50 additional per cubic yard, ($18.00 *additional per* m3) as a back-sheet item. Such stipulated prices for rock excavation will apply up to a maximum of 250 cubic yards, (200 m3) of excavation per item or to such quantity as may be performed by mutual consent prior to execution of a Supplemental Agreement.

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Spec. No.: 2105 (cont.)
Contract Items: Muck Excavation

Unit - U.S.: C.Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record x-section notes in x-section book. (If borings have been taken after backfill is in-place - in lieu of x-sections - record the boring results in the x-section book.) Plot areas and show volume computations on x-section's rolls. For the Final, submit the x-section book (with borings notes, if necessary) and x-section rolls - with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Section Measure (Re-measurement) - When additional Muck Excavation, as required by the Engineer, is removed from below a plane parallel to, and 15 feet (5.0 m) below the natural ground surface, the additional Muck Excavation will be measured in

5-foot (2.0 m) depth-zone increments and will be paid for, separately as a back-sheet item, as follows:

15'- 20'depth-zone: Contract Bid price + $0.15/C. Y.
20'- 25' depth-zone: Contract Bid price + $0.20/C.Y.
25'- 30' depth-zone: Contract Bid price + $0.25/C.Y.
5.0 - 7.0 m depth-zone: Contract Bid price + $0.20/m3
9.0 m depth-zone: Contract Bid price + $0.25/m3
9.0 - 11.0 m depth-zone: Contract Bid price + $0.30/m3
(i.e., each 2.0 in increment in depth, etc., below 11 m deep, will increase the adjusted unit price by $0.05)

Spec. No.: 2105 (cont.)

Contract Items: Rock Excavation

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record measurements and volume computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Measure and compute as instructed by the Engineer all boulders and detached stones, having a volume of 1 C.Y. (0.75 *m3)* or more.

Spec No.: 2105 (cont.)

Contract Items: Granular Borrow (EV)
Select Granular Borrow (EV)
Common Borrow (EV)
Topsoil Borrow (EV)
Select Topsoil Borrow (EV)

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit x-section books and rolls with proper

reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Sectional Measure (EV - Excavated Volume) – Compute volume using the average-end area method, of the material in its original position at the source of supply.

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Spec. No.: 2105 (cont.)
Contract Items: Granular Borrow (LV))
Select Granular Borrow (LV)
Common Borrow (LV)
Topsoil Borrow (LV)
Select Topsoil Borrow (LV)
Unit - U.S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit the above forms in booklet or folder form, with proper reference on the I.R.A. See Vehicular Measure Note.

Method of Measurement: Vehicular Measure (LV - Loose Volume) - Measure and compute the capacity of the hauling vehicle to the closest C.Y. (0.1 m3) Round the total for each area to the closest C.Y. (m3) per day.

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Spec. No.: 2105 (cont.)
Contract Items: Granular Borrow (CV)
Select Granular Borrow (CV)
Common Borrow (CV)
Topsoil Borrow (CV)
Select Topsoil Borrow (CV)

Unit - U.S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit the x-section books and rolls with

proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Section Measure (CV - Compacted Volume) – Compacted volume will be determined by cross-section measure of the material as placed in the work based on the required placement dimensions, as shown in the Plans, described in the Specifications, or designated by the Engineer.

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Spec. No.: 2105 (cont.)
Contract Items: Granular Borrow (SV)
Select Granular Borrow (SV)
Common Borrow (SV)
Topsoil Borrow (SV)
Select Topsoil Borrow (SV)

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit x-section books and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Section Measure (S.V. - Stockpile Volume) – Compute volume using the average-end area method of the material in the stockpiled position. The Contractor shall shape the stockpile to a condition as directed by the Engineer prior to measurement.

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Spec. No.: 2105 (cont.)
Contract Items: Stabilizing Aggregate

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record uniform loads on Form 28226. Record non-uniform loads on Form 2177 with tape, slip or other accumulation, showing total for each area per day. For the Final, submit these forms in booklet, folder or packet

form, with proper reference on the I.R.A. See Delivery Tickets Note. See Uniform Load note – section .410.

Method of Measurement: Weight (Mass) (Scale) - Weigh on approved scales. Round each load to closest 0.1 ton *(0.1 metric ton).* Round the total for each area to closest ton *(metric ton)* per day. For uniform load method Delivery Tickets are not required.

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Spec. No.: 2105 (cont.)
Contract Items: Stabilizing Aggregate

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit these forms in booklet or folder form, with proper reference on the I.R.A. See Vehicular Measure Note.

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y. (0.1 m3) Round the total for each area to the closest C.Y. (M) per day.

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Spec. No.: 2105 (cont.)
Contract Items: Salvage Aggregate
Salvage Topsoil
Salvage Aggregate (LV)
Salvage Topsoil (LV)

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit these forms in booklet or folder form, with proper reference on the I.R.A. See Vehicular Measure Note.

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y. (0.1 m3) Round the total for each area to the closest C.Y. (m 3) per day.

Spec. No.:	2105 (cont.)
Contract Items:	Salvage Aggregate (EV) Salvage Topsoil (EV)
Unit - U.S.:	C.Y.
Unit - Metric:	*(Cubic Meter)*
Documentation:	Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit x-section books and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Sectional Measure - Compute the volume, using the average-end-area method, of the material.

Spec. No.:	2105 (cont.)
Contract Items:	Salvage Aggregate (SV) Salvage Topsoil (SV)
Unit -U.S.:	C. Y.
Unit - Metric:	*(Cubic Meter)*
Documentation:	Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit x-section books and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Section Measure (SV - Stockpile Volume) – Compute volume using the average-end area method of the material in the stockpiled position. The Contractor shall shape the stockpile to a condition as directed by the Engineer prior to measurement.

Spec. No.:	2106
Contract Items:	Excavation - Common Excavation - Sub-grade Excavation – Muck Excavation – Rock
Unit - U.S.:	Cubic Yard

Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

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Spec. No.: 2106 (cont.)
Contract Items: Excavation - Common
Excavation - Subgrade

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-section notes in x-section book. Plot area and show computations on x-section rolls. For the Final, submit the x-section book and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross Section Measure (Re-measurement) - Volume will be computed by the average-end-area method, using the latest available x-section and the original x-sections.

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Spec. No.: 2106(cont.)
Contract Items: Excavation - Rock

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit the x-section book and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross Section Measure (Re-Measurement) - Use "the rock when stripped" elevations and the original x-sections.

When Rock Excavation is not a bid Item - If the Proposal fails to include a bid item for rock excavation, and material is uncovered that is so classified, excavation of the rock will be paid for

separately at the Contract price for Excavation - common plus $20.00 additional per cubic yard, ($26.00 *additional per M* 3) as a back-sheet item. Such stipulated prices for rock excavation will apply up to a maximum of 260 cubic yards, (200 m3) of excavation per item or to such quantity as may be performed by mutual consent prior to execution of a Supplemental Agreement.

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Spec. No.: 2106 (cont.)
Contract Items: Excavation - Muck

Unit - U.S.: C.Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record x-section notes in x-section book. (If borings have been taken after backfill is in-place - in lieu of x-sections - record the boring results in the x-section book.) Plot areas and show volume computations on x-section's rolls. For the Final, submit the x-section book (with borings notes, if necessary) and x-section rolls - with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Section Measure (Re-measurement) - When additional Muck Excavation, as required by the Engineer, is removed from below a plane parallel to, and 15 feet (5.0 m) below the natural ground surface, the additional Muck Excavation will be measured in 5-foot (2.0 m) depth-zone increments and will be paid for, separately as a back-sheet item, as follows:

15'- 20'depth-zone: Contract Bid price + $0.30/C. Y.
20'- 25' depth-zone: Contract Bid price + $0.50/C.Y.
25'- 30' depth-zone: Contract Bid price + $0.70/C.Y.
(i.e., each 5 ft increment in depth, etc., below 20 ft deep, will increase the adjusted unit price by $0.20/CY)

5.0 - 7.0 m depth-zone: Contract Bid price + $0.39/m3
9.0 m depth-zone: Contract Bid price + $0.65/m3
9.0 - 11.0 m depth-zone: Contract Bid price + $0.91/m3
(i.e., each 2.0 m increment in depth, etc., below 11 m deep, will increase the adjusted unit price by $0.26/m3)

Spec. No.: 2106 (cont.)

Contract Items: Excavation – Rock

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record measurements and volume computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Measure and compute as instructed by the Engineer all boulders and detached stones, having a volume of 1 C.Y. (0.75 *m3)* or more.

Spec. No.: 2106 (cont.)
Contract Items: Common Embankment (CV)
Granular Embankment (CV)
Select Granular Embankment (CV)
Select Granular Embankment Modified (1)(CV)
Granular Embankment – Muck (CV)
Select Granular Embankment – Muck (CV)

(1) Specify basis of percent modification (ie. 5%, 7%, 10%, etc.)

Unit - U.S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit the x-section books and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Section Measure (CV - Compacted Volume) – Compacted volume will be determined by cross-section measure of the material as placed in the work based on the required placement dimensions, as shown in the Plans, described in the Specifications, or designated by the Engineer.

Spec. No.:	2106 (cont.)
Contract Items:	Stabilizing Aggregate
Unit - U.S.:	Acre
Unit - Metric:	*(Hectare)*
Documentation:	Record dimensions and computations for the accepted areas. For the Final, submit these records with proper reference on the I.R.A.
Method of Measurement:	Area Computation - Measure and compute accepted areas.

Spec. No.:	2111
Contract Items:	Test Rolling
Unit - U.S.:	Road Station
Unit - Metric:	*(Meter)*
Documentation:	Record the length and location of the Roadbed tested. For the Final, submit these records with proper reference on the I.R.A
Method of Measurement:	Road Station - Measure length in road stations of 100 feet along the centerline of the roadbed. Measure ramps and loops to the ends of entrance and exit noses. If the Engineer orders testing on any portion of the roadbed to an extent less than the full width specified, the measurement will be is proportion to the width tested.

Spec. No.:	2112
Contract Items:	Subgrade Preparation
Unit - U.S.:	Road Station
Unit - Metric:	*(Meter)*
Documentation:	Record measurements. For the Final, submit the measurements, with proper reference on the I.R.A.
Method of Measurement:	Road Station - Measure length in road stations of 100 feet, along the centerline of the roadbed. The work on each separate roadbed in the case of divided highways

will be measured separately. Locations where grading or subgrade excavation (as described in 2105) is required will not be included in the measurements. On ramps and loops, the length will be measured between the ends of the exit and entrance noses, along the centerline of the ramp or loop roadbed.

Spec. No.: 2118
Contract Items: Aggregate Surfacing, Class _____

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit these forms in booklet or folder form, with proper reference on the I.R.A. See Vehicular Measure Note. Section 500

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y. (0.*1 m3).* Round the total for each area to the closest C.Y. (W) per day.

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Spec. No.: 2118 (cont.)
Contract Items: Aggregate Surfacing, Class _____

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record uniform loads on Form 28226. Record non-uniform loads on Form 2177 with tape, slip or other accumulation showing total for each area per day. For the Final, submit the above forms in booklet, folder or packet form, with proper reference on the I.R.A. See Delivery Tickets Note. See Uniform Load Note - Section .410.

Method of Measurement: Weight (Mass) (Scale) - Weigh on approved scales. Round each load to closest 0.1 ton (0.1 *metric ton*). Round the total for each area to the closest ton *(metric ton)* per day. For uniform load method Delivery Tickets are not required.

Spec. No.: 2120 (Spec year 2000)
Contract Items: Earth Shoulder Material

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit the above forms in booklet or folder form, with proper reference on the I.R.A. See Vehicular Measure Note.

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y (0.1*m3*). Round the total for each area to the closest C.Y. (m3) per day.

Spec. No.: 2123
Contract Items: Common Laborers
Motor Grader
____C.Y. *(m3)* Dragline
____C.Y. (*m3*) Shovel
C.Y. *(m3)* Scraper
Dozer
____C.Y. (*m3*) Truck
H.P. (kW) Tractor
Rotary Tiller
____C.Y. (*m3*) Front End Loader
Pneumatic Tired Roller
Pneumatic Tired Roller (Tractor Drawn)
Pneumatic Tired Roller (Self-Propelled)
Tamping Roller
____Ton *(metric ton)* Steel-Wheeled Roller

Unit - U.S.: Hour
Unit - Metric: Hour

Documentation: Record equipment and labor hours on Form 2137. For the Final, submit these forms in booklet or folder form, with proper reference on the I.R.A.

Method of Measurement: Miscellaneous - Measure the hours of actual working time and necessary traveling time within the project

limits. Round the time for each item to the closest half-hour per day.

Note: *The only overtime work, which will receive additional compensation, will be that work ordered by the Engineer.*

Spec. No.: 2130
Contract Items: Water

Unit - U.S.: 1000 (M) Gal.
Unit - Metric: *(Cubic Meter)*

Documentation: Record on Form 21236. For the Final, submit these forms with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (Liquid- Load-Count Method.
Measure and compute tank capacities to the closest 100 gallons *(0.4 m3)* and count the number of loads used.
Tank Method. If tank has a rated capacity stenciled or placarded use capacity shown on tank, and count the number of loads used.
Meter Method. Use calibrated meter, and modify Form 21236 to show beginning and ending reading. When a municipal meter is used, a certificate from the municipal officer is acceptable.
In the absence of a contract bid for and when water is not included as incidental to another contract pay item, water applied by order or approval of the Engineer, such as for dust control, will be paid for at a unit price of $11.00 per 1000 gallons ($3.00 *per m3).*

Spec. No.: 2131
Contract Items: Calcium Chloride, Type _____

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Bulk Method - Record the mass of the material from the railroad or truck invoices. (Use converted weights, if applicable). For the Final, submit these invoices and records with proper reference on the IR.A.

Method of Measurement: Weight *(Mass)* (Scale) - Measured by the net railroad or track invoice. Round total to the closest 0.1 ton (0.*1 metric ton).* Convert to equivalent mass if other than specified analyses is furnished.

Spec. No.: 2131 (cont.)
Contract Items: Calcium Chloride, Type____

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Bag or Drum Method - Record bag or drum count and computations. (Use converted weights, if applicable). For the Final, submit these records and computations with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass)* - (By Computation) - Count the number of individual containers and multiply by the weight per container. Round total to the closest 0.1 ton (0.1 *metric ton).* Convert to equivalent weights if other than specified analyses is furnished.

Spec. No.: 2131 (cont.)
Contract Items: Calcium Chloride Solution

Unit - U.S.: Gal.
Unit - Metric: *(Cubic Meter)*

Documentation: Record on Form 21236. For the Final, submit these forms with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (Liquid) - Measure each distributor load by Weight, or by Calibrated Meter. Convert to liquid volume at 60^{o} F (15^{o} C) using the Mn/DOT Bituminous Manual correction factors for Asphalt Emulsion. Convert quantity of 35 % solution to equivalent quantity.

Spec. No.: 2201
Contract Items: Concrete Base
Concrete Base, Standard Width
Concrete Base, Irregular Width

Base Reinforcement, Type

Unit - U.S.: S. Y.
Unit - Metric: *(Square Meter)*

Documentation: See Plan Quantity Note Section .410

Method of Measurement: See Plan Quantity Note.

Spec. No.: 2201 (cont.)
Contract Items: Structural Concrete

Unit - U.S.: C.Y.
Unit - Metric: (Cubic *Meter)*

Documentation: See Plan Quantity.

Method of Measurement: Engineer will pay for additional cement used in the Structural Concrete as per Specification 2301.5*. Extra Work Compensation will be provided by the following formula: (Engineer shall have Documentation for total C.Y. (M) of each specific design in the records.)

$$E = \frac{(D - Y) \times C \times I \times 1.15}{2000}$$

E = (D - M) x C x I x 1.15 Metric *Equivalent*

*Note: *see Standard Specifications for Construction: deletions in 2005.*

Spec. No.: 2201 (cont.)
Contract Items: Expansion Joints, Design _____
Integrant Curb, Design _____

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record on Form 28233. For the Final, submit these forms in booklet form with proper reference on the I.R.A.

Method of Measurement: Linear Feet *(meter)* Measure length of work actually performed.

Spec. No.: 2201 (cont.)
Contract Items: Dowel Bars

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit records with proper reference on the I.R.A.

Method of Measurement: Dowel Bars - Physical count of the actual number of individual placed. No measurement will be made under this item that are paid for as a part of expansion joint construction.

. . . . . .

Spec. No.:
Contract Items: Reinforcement Bars

Unit - U.S.: Lb.
Unit - Metric: *(Kilogram)*

Documentation: Record on Form 2215 or 28233.For the Final submit these forms in booklet or folder form with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass) (By* Computation) - Compute the mass of reinforcement bars based on the lengths shown in the Plans. The quantity measured will include only those splices, which are shown in the Plans. Use table shown in Specification 2472.4A. Do include bar supports or tie wires.

Spec. No.: 2204 (Not in Spec 2005)
Contract Items: Bituminous Material for Mixture

Unit - U.S.: Gal.
Unit - Metric: *(Liter)*

Documentation: Record quantity of material used each day on Form 24326. Show method of determining quantity under "Remarks" on first day. For the Final, submit Form 24326 in booklet or folder form with proper reference on I.R.A.

Method of Measurement: Volumetric Measure (Liquid) - Measure storage tank content at start of day; add material received; subtract material wasted, hauled off job and remaining at end of day. Convert all bituminous material to liquid volume at 60^{o} F (15^{o} C). (Do not include additional water mixed with asphalt emulsions.)

Spec. No.: 2204 (cont.)
Contract Items: Bituminous Mixture, Class ____ Aggregate

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record uniform loads on Form 28226. Record non-uniform Form 2177 with tape, slip or other accumulation, showing total for each area per day. For the Final, submit the above forms in booklet, folder or packet form, with proper reference on the I.R.A. See Delivery Tickets Note. See Uniform Load Note - section .410.

Method of Measurement: Weight *(Mass)* (Scale) - Weight on approved scales. Round to closest 0.1 ton (0.*1 metric ton).* Round total for each area to closest ton *(metric ton)* per day. For uniform load method, Delivery Tickets are not required.

Spec. No.: 2206 (Not in 2005 Spec Book)
Contract Items: Soil Cement Base

Unit - U.S.: S. Y.
Unit - Metric: *(Square Meter)*

Documentation: See Plan Quantity Section .410

Method of Measurement: See Plan Quantity.

Spec. No.: 2206 (cont.)
Contract Items: Cement
Soil
Sand Cover

Unit - U.S.: Ton

Unit - Metric: *(Metric Ton)*

Documentation: Record uniform loads on Form 28226. Record non-uniform Form 2177, with tape, slip or other accumulation showing total for each area per day. For the Final, submit the above in booklet or packet form, with proper reference on the I.R.A. See Delivery Tickets Note. See Uniform Load Note – section .410.

Method of Measurement: Weight *(Mass)* (Scale) - Weigh on approved scales. Round load to closest 0.1 ton (0.*1 metric ton).* Round total for each area to closest ton *(metric ton)* per day. For the uniform load method, Tickets are not required.

Spec. No.: 2206 (cont.)
Contract Items: Soil (LV)
Sand Cover (LV)

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit the above forms in booklet or folder form, with proper reference on the I.R.A. See Vehicular Measure Note.

Method of Measurement: Vehicular Measures - Measure and compute vehicle capacities to closest 0.1 C.Y. (0.1 m3). Round total for each area to the closest C.Y. (m3) per day.

Spec. No.: 2206 (cont.)
Contract Items: Bituminous Curing Material

Unit - U.S.: Gal.
Unit - Metric: *(Liter)*

Documentation: Record on Form *21841.* For the Final, submit these forms in packet form with proper reference on the I.R.A

Method of Measurement: Volumetric Measure (Liquid) - Measure each distributor load by weight, or by calibrated meter. Convert to liquid

volume at 60° F (15° C). (Do not include additional water mixed with asphalt emulsions.)

Spec. No.: 2207 (Not in 2005 Spec Book)
Contract Items: Bituminous Material for Mixture

Unit - U.S.: Gal. / Liter

Documentation: Record on Form *21841.* For the Final, submit these forms in packet form with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (Liquid) - Measure each distributor load by sticking, by weight, or by calibrated meter. Convert to liquid volume at 60° F (15° C). (Do not include additional water mixed with asphalt emulsions.)

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Spec. No.: 2207 (cont.)
Contract Items: Bituminous Stabilized Sub-grade, _____*(mm)* Thick

Unit - U.S.: S.Y.
Unit - Metric: (Square Meter)

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity

Spec. No.: 2211
Contract Items: Aggregate Base, Class _____
Stockpile Aggregate, Class _____

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record uniform loads on Form 28226. Record non-uniform loads on Form 2177 with tape, slip or other accumulation showing total for each area per day. For the Final, submit the above forms in booklet or packet form, with proper reference on the I.R.A. See Delivery Tickets. See Uniform Load – section .410.

Method of Measurement: Weight *(Mass)* (Scale) - Weigh on approved scales. Round each load to closest 0.1 ton (0.1 *metric ton).* Round total for each area to closest ton *(metric ton)* per day. For the uniform load method, Tickets are not required.

. . . . . .

Spec. No.: 2211 (cont.)
Contract Items: Aggregate Base (LV), Class _____
Stockpile Aggregate (LV), Class_____

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record vehicle measurement and volume computations on 2141. Record the load-count of material used on Form 28226. For the Final, submit the above forms in booklet or form with proper reference on the I.R.A. See Vehicular Measure Note section .410.

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.*1 C.Y (0.1 m*3). Round total for each area to the closest C.Y. *(m* 3) per day.

. . . . . .

Spec. No.: 2211 (cont.)
Contract Items: Aggregate Base (CV), Class

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

. . . . . .

Spec. No.: 2211 (cont.)
Contract Items: Stockpile Aggregate (SV), Class _____

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-sections notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit these records with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Section Measure (SV - Stockpile Volume) – Compute volume using the average-end area method of the material in the stockpiled position. The Contractor shall shape the stockpile to a condition as directed by the Engineer prior to measurement.

Spec. No.:	2221
Contract Items:	Aggregate Shouldering, Class _____ Stockpile Aggregate, Class _____
Unit - U.S.:	Ton
Unit - Metric:	*(Metric Ton)*
Documentation:	Record uniform loads on Form 28226. Record non-uniform loads on Form 2177 with tape, slip or other accumulation showing total for each area per day. For the Final, submit the above forms in booklet or packet form with proper reference on the I.R.A. See Delivery Tickets. See Uniform Load note in section .410.

Method of Measurement: Weight (Mass) (Scale) - Weigh on approved scales. Round to closest 0.1 ton *(0. 1 metric ton).* Round total for each area to closest ton *(metric ton)* per day. For the uniform load method, Tickets are not required.

. . . . . .

Spec. No.:	2221 (cont.)
Contract Items:	Aggregate Shouldering (LV), Class _____
Unit - U.S.:	C.Y.
Unit - Metric:	*(Cubic Meter)*
Documentation:	Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit the above forms in booklet or folder form with proper reference on the I.R.A. See Vehicular Measure section .410

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y (0. 1 m3). Round total for each area to the closest C.Y. *(m3)* per day.

. . . . . .

Spec. No.: 2221 (cont.)
Contract Items: Stockpile Aggregate (LV), Class _____

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurement and volume computations on Form 2141. Record the load count of material used on Form 28226. For the Final, submit the above forms in booklet or folder form with proper reference on the I.R.A. See Vehicular Measure – Section .410

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y (0.1 m*3)*. Round total for each area to closest C.Y. *(M)* per day.

. . . . . .

Spec. No.: 2221 (cont.)
Contract Items: Stockpile Aggregate (SV)

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit the x-section books and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross-Section Measure (SV - Stockpile Volume) - Compute using the average end area method of the material in the stockpiled position. The Contractor shall shape the stockpile to a condition as directed by the Engineer prior to measurement.

. . . . . .

Spec. No.: 2221 (cont.)
Contract Items: Aggregate Shouldering (CV), Class _____

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity in Section .410

Method of Measurement: See Plan Quantity.

Spec. No.: 2231
Contract Items: Bituminous Patching Mixture

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record uniform loads on Form 28226. Record non-uniform on Form 2177, with tape, slip or other accumulation showing total for each area per day. For the Final, submit the above forms in booklet or packet form with proper reference on the I.R.A. See Delivery Tickets. See Uniform Load – section .410.

Method of Measurement: Weight (Mass) (Scale) - Weigh on approved scales. Round each load to closest 0.1 ton (0.1 *metric ton).* Round total for each area to closest ton *(metric ton)* per day. For uniform load method, Tickets are not required.

. . . . . .

Spec. No.: 2231 (cont.)
Contract Items: Bituminous Patching Mixture

Unit - U.S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit these forms in booklet or folder form with proper reference on the I.R.A. See Vehicular Measure in Section .410.

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y (0.1 m*3)*. Round total for each area to the closest C.Y. *(m3)* per day.

. . . . . .

Spec. No.: 2231 (cont.)
Contract Items: Mixture for Joints and Cracks

Unit - U.S.: LB.
Unit - Metric: (Kilogram)

Documentation: Record uniform loads on Form 28226. Record non-uniform loads on Form 2177, with tape, slip or other accumulation showing total for each area per day. For the Final, submit the above forms in booklet or packet form with proper reference on the I.R.A. See Delivery Tickets. See Uniform Load note - section .410.

Method of Measurement: Weight *(Mass)* (Scale) - Weigh on approved scales. Round each load to closest 10 pounds (5 *kg).* Round total for each area to closest Lb. per day. For uniform load method, Tickets are not required.

Spec. No.: 2231 (cont.)
Contract Items: Joint and Crack Filler

Unit - U.S.: Lb.
Unit - Metric: (Kilogram)

Documentation: Record on Form 28226. For the Final, submit Forms 28226 in booklet form with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass) (By* Computation) - Count containers of sealer used and multiply by pounds per container.

Spec. No.: 2232
Contract Items: Mill Bituminous Surface
Mill Concrete Pavement Surface

Unit - U.S.: S.Y.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A

Method of Measurement: Area Computations - Measurements and computations will be those areas milled as specified, based on actual finished dimensions of the work.

Spec. No.: 2301

Contract Items: Concrete Pavement
Concrete Pavement, Standard Width
Concrete Pavement, Irregular Width
Pavement Reinforcement, Type _____

Unit - U.S.: SY.
Unit - Metric: *(Square Meter)*

Contract Items: Structural Concrete
Structural Concrete, HE (High Early Strength)

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

Note: *Engineer will pay for additional cement used in the Structural Concrete as per Specification 2301.5. Extra Work Computation will be provided for by the following formula:*

* *

2301.5(l) *Standard Strength Concrete* (Not in Spec 2005)

$$E = \frac{(D - M) \times C \times I \times 1.15}{2000}$$

(E) =*Extra pay for additional cement*
(D) =*Design Cement in pounds/C. Y (From Form 2155)*
(M) = Minimum Cement in pounds/C. Y (From 2461.3C or Spec. Provisions)
(C) = *C.Y Concrete at specific design excluding waste (Total C. Y. Concrete will not exceed*
the final quantity of the Structural Concrete pay item)
(I) =Invoice price of cement per ton

E = (D - M) x C x I x 1. 15 Metric equivalent
E = (D - M) x C x I x 1. 15 Metric equivalent
(E) = Extra Pay for additional cement
(D) = Design Cement in *kilograms/cubic meter* (From form *2155)*
(M) = Minimum Cement in minimum Cement in *kilograms/cubic meter* (From 2461.3C or Spec. Provisions)

(C) = *Cubic Meter* Concrete at specific design excluding waste (Total *Cubic Meter* Concrete will not exceed the final quantity of the Structural Concrete pay item.) Invoice price of cement per *kilogram.*

* *

2301.5(2) *-High Early Strength Concrete furnished and placed at the Contractor's discretion with the Engineer's approval, beyond the Contract requirements and without the Engineer's order.* (Not in Spec 2005)

$$E = \frac{(D - M) \times C \times I \times 1.15}{2000}$$

(E) = Extra pay for additional cement
(D) = Design Cement in pounds/C. Y (From Form 2155)
(M)= Minimum Cement in pounds/C. Y from 2461.3C *or Spec. Provisions as established in the Standard Strength Concrete*
(C) = C. Y Concrete at specific design excluding waste (Total C. Y Concrete will not exceed the final quantity of the Structural Concrete pay item.)
(I) = Invoice price of cement per ton

E=(D-M) x C x I x l.l5 Metric equivalent

(E) Extra pay for additional cement
(D) Design Cement in *kilograms/cubic meter* (From form 2155)
(M)= Minimum Cement in *kilograms/cubic meter* (From 2461.3C or Special Provisions)
(C) = *Cubic Meter* Concrete at specific design excluding waste (Total *Cubic Meter* Concrete will not exceed the final quantity of the Structural Concrete pay item.)
2005 Spec Year – High Early Concrete Mixes – Contractor Requested, Engineer Approved: NO EXTRA COMPENSATION will be provided for high early when requested by the Contractor.

* *

2301.5(3) - High Early Strength Concrete furnished as a separate pay item (2301.513 Structural Concrete H.E.)

$$E = \frac{(D - M) \times C \times I \times 1.15}{200}$$

(E) = Extra pay for additional cement
(D) = Design Cement in pounds/C.Y. (From Form 2155)

(M) = Minimum from Standard Strength Concrete plus 30%

Example: Standard Minimum (530#) + 30% H.E. (159) = H.E. Minimum (689#)
(C) = C.Y. Concrete at specific design excluding waste (Total C.Y. Concrete will not exceed the final quantity of the Structural Concrete pay item.)
(I) = Invoice price of cement per ton

E = (D - M) x C x I x 1.15 Metric equivalent

(E) Extra, Pay for additional cement
(D) = Design Cement in *kilogram/cubic meter* (From form 2155)
(M) = Minimum from Standard Strength Concrete plus 30%
Example: Standard Minimum (240 *kg)* + *30*% HE. (72 *kg)* = *H*.E. Minimum (312 *kg)*
(C) =*Cubic Meter* Concrete at specific design excluding waste (Total *Cubic Meter* Concrete will not exceed the final quantity of the Structural Concrete pay item.)
(I) = Invoice price of cement per *kilogram.*

* *

2301.5(4) - High Early Strength Concrete ordered by the Engineer without a separate pay item. Extra work is paid for as 20% of Contract Unit Price.

$$E = \frac{(D - M) \times C \times I \times 1.15 + 0.02 \times B}{2000}$$

(E) = Extra pay for additional cement
(D) = Design Cement in pounds/C.Y. (From Form 2155
(M) Minimum from Standard Strength Concrete plus 30%

Example: Standard Minimum (530#) + 30% H.E. (159) = H.E. Minimum (689#)
(C) C.Y. Concrete at specific design excluding waste (Total C.Y. Concrete will not exceed the final quantity of the Structural Concrete pay item.)
(1) = Invoice price of cement per ton
(B) = Contract Unit Price per Cubic Yard

E = (D - M) x C x Ix 1.15) + 0.02 x B x C *Metric equivalent*

(E) = Extra, Pay for additional cement

(D) = Design Cement in *kilograms/cubic meter (From* form 2155)
(M) = Minimum from Standard Strength Concrete plus 30%
Example: Standard Minimum (240 *kg)* + *30%* H.E. (72 *kg)* = H.E. Minimum (312 *kg)*
(C) Cubic Meter Concrete at specific design excluding waste (Total *Cubic Meter* Concrete will not exceed the final quantity of the Structural Concrete pay item.)
(I) = Invoice price of cement per *kilogram.*
(B) = Contract unit Price per *cubic meter.*
Documentation for 2301.5(l) - 2301.5(4) - Reference computations on the I.R.A. Submit the I.R.A. for Final Pay.

* *

2301.3M - Extreme Service Membrane Cure

Will be provided at the rate of $0.225 per square yard($0.25 per square meter) of Concrete Pavement placed requiring this type of cure. Payment will be made as a"Backsheet " item.

Spec. No.: 2301 (cont.)
Contract Items: Bridge Approach Panels, Design ______

Unit - U.S.: S.Y.
Unit - Metric: (Square Meter)

Documentation: Record on Form 28233. For the Final, submit these forms in booklet form with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute the area of pavement as constructed.

. . . .

Spec. No.: 2301 (cont.)
Contract Items: Bridge Approach Panels_

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Measure as a complete in-place item.

. . . .

Spec. No.: 2301 (cont.)
Contract Items: Dowel Bar

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit records with proper reference on the I.R.A.

Method of Measurement: Unit – Physical count.

. . . . . .

Spec. No.: 2301 (cont.)
Contract Items: Concrete Coring

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

. . . . . .

Spec. No.: 2301 (cont.)
Contract Items: Reinforcement Bars (Epoxy Coated)

Unit - U.S.: Lb.
Unit - Metric: (Kilogram)

Documentation: Record on Form 2215 or 28233. For the Final, submit these forms in booklet or folder form with proper reference on the I. R. A.

Method of Measurement: Weight (Mass) (By Computation) - Compute the mass of reinforcement bars, prior to coating with epoxy, based on the lengths shown in the Plans. The quantity measured will include only those splices that are shown in the Plans. Use table shown in Specification 2472.4A. Do not include bar supports or tie wires.

. . . . . .

Spec. No.: 2301 (cont.)
Contract Items: Expansion Joints, Design _____
Integrant Curb, Design _____

Unit - U. S.: L. F.

Unit - Metric: (Meter)

Documentation: Record on Form 28233. For the Final, submit these forms in booklet form with proper reference on the I.R.A.

Method of Measurement: Linear Feet (meter) - Measure length of work actually performed.

Spec. No.: 2321
Contract Items: Bituminous Material for Mixture

Unit - U.S.: Gal
Unit - Metric: (Liter)

Documentation: Record on Form 21841. For the Final, submit these forms in form with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (Liquid) - Measure each load by sticking, by calibrated meter. Convert to liquid volume at 60^{o} F (15^{o} C). (Do not include additional water mixed with asphalt emulsion.)

Note: Fog seal material will be measured and included with the Bituminous Material for Mixture.

. . . . . .

Spec. No.: 2321 (cont.)
Contract Items: Aggregate
Stockpile Stockpile Aggregate, Class _____

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record uniform loads on Form 28226. Record non-uniform loads on Form 2177. Automatic printout type tickets may be substituted for either of the above two methods. For the Final, submit the above forms in booklet, packet or bundle form, with proper reference on the I.R.A. See Delivery Tickets. See Uniform Load note - section .410.

Method of Measurement: Weight (Mass) (Scale) - Weigh on approved scales. Round each load to closest 0.1 ton (0.1 *metric ton*).

Round total for each area to closest ton *(metric ton)* per day. For uniform load method, Tickets are not required.

Spec. No.: 2321 (cont.)
Contract Items: Aggregate
Stockpile Aggregate, Class _____

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material used on Form 28226. For the Final, submit these forms in booklet or folder form with proper reference on the I.R.A. See Vehicular Measure.

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y. (0. 1 *m3)* Round total for each stockpile to the closest C.Y. (W) per day.

Note: *When 2321 material is mixed in a hot mix Plant, convert recorded weights to individual quantities of aggregate and bituminous material, and show computations.*

Spec. No.: 2331 (Spec 2000)
Contract Items: Wearing Course Mixture
Binder Course Mixture
Leveling Course Mixture
Base Course Mixture
Shoulder Mixture
Bituminous Mixture for (Specific Purpose)
Bituminous Mixture Production
Type _____, _____ Course Mixture

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record non-uniform loads on Form 2177.
Record uniform loads on either Form 28226 or Form 2177.

Automatic printout tickets may be substituted for either of the above two methods.

For the Final, submit these Forms or automatic printout tickets in booklet, packet or bundle form with proper reference on the LR.A.

Sq. Yd. In. *(Square Meter, Millimeter)* - Record computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass)* (Scale) - Non-uniform loads weigh on approved scales. Round each load to the closest 0.1 ton (0.1 *metric ton).*

Weight *(Mass)* (Sq. Yd. Inch (Square *Meter, Millimeter* Measure area in square yards (W) and compute weight based on thickness.

Uniform Loads - Weigh on approved scales. Round each load to the closest ton (0.1 *metric ton).* If Form 2177 is used, the first ticket each day and the first ticket reflecting any subsequent changes in batch weight and/or number of batches per load, shall be modified to include: (1) Weight per batch, (2) number of batches per load, and (3) total weight per load.

. . . . . .

Spec. No.: 2331 (cont.)
Contract Items: Irregular Width Paving
Type _____, _____ Course Mixture, _____, mm thick

Unit - U.S.: S. Y.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method *of* Measurement: Area Computation - Measurements and computations will be based on actual surface dimensions as placed.

Note: *If either mineral filler or hydrated lime is to be required, the Item Name must be expanded by addint the words: (with Filler) or (with Lime).*

Spec. No.: 2340 Plant Mixed Bituminous Pavement (Spec 2000)
Quality Control / Quality Assurance
(Type 31,41, 47,61)

Contract Items:
Wearing Course Mixture
Binder Course Mixture
Leveling Course Mixture
Base Course Mixture
Shoulder Mixture
Bituminous Mixture for (Specific Purpose)
Bituminous Mixture Production
Type_____, _____Course Mixture
Contractor Testing - (A)

(A)- Payment for Contractor Testing item No. 2340.501 by the ton (metric ton) will be made only when the pay item is specified in the Contract. If specified, payment for Contractor Testing of the plant mixed bituminous surface will be compensation for all costs of the required testing. Contractor Testing will be paid for as follows :Item 2340.501 - Contractor Testing

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record Computations. For the Final, submit these Forms or automatic printout tickets in booklet, packet or bundle form with proper reference on the IRA.

Method of Measurement: Weight *(Mass)* (Scale) - Based on the mass of plant mixed bituminous mixture used and tested.

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Spec. No.: 2340 (cont.)
Contract Items:
Wearing Course Mixture
Binder Course Mixture
Shoulder Mixture
Leveling Course Mixture
Base Course Mixture

Bituminous Mixture for (Specific Purpose)
Bituminous Mixture Production

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*
Documentation: Record non-uniform loads on Form 2177. See Delivery Tickets.

Record uniform loads on either Form 28226 or Form 2177. See Uniform Load.

Automatic printout tickets may be substituted for either of the above two methods.

For the Final, submit these Forms or automatic printout tickets in booklet, packet or bundle form with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass)* (Scale) - Non-uniform loads weigh on approved scales. Round each load to the closest 0.1 ton (0.1 *metric ton).* Uniform Loads - Weigh on approved scales. Round each load to the closest 0.1 ton (0.1 *metric ton).* If Form 2177 is used, the first ticket each day and the first ticket reflecting any subsequent changes in batch weight and/or number of batches per load, shall be modified to include:
(1) Weight per batch, (2) Number of batches per load and
(3) Total weight per load.

Note: *If either mineral filler or hydrated lime is to be required, the Item Name must be expanded by adding the words: (with Filler) or (with Lime).*

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Spec. No.: 2340 (cont.)
Contract Items: Irregular Width Paving

Unit - U.S.: Sq. Yd.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measurements and computations will be based on actual surface dimensions as placed.

Spec. No.: 2350 (Spec 2000)
Plant Mixed Asphalt Pavement
Quality Control / Quality Assurance
(Type LV- MV - HV)

Contract Items:
Type (1) (2) Wearing Course Mixture *(4) Metric ton (ton)*
Type (1) (2) Non Wearing Course Mixture *(4) Metric ton (ton)*
Type (1) (2) (3) Course mixture (4), (5) mm (inch) thick *Square Meter (Square yard)*
Type (1) (2) (3) Course Mixture *(4) (Square Yard Inch)*
Type (1) (2) Bituminous Mixture for Specified Purpose *Metric ton (ton)*
Type (1) (2) Bituminous Mixture Production *-Metric ton (ton)*
(1)- Traffic Level Designation (L VMV or HV as appropriate)
(2)- Aggregate size designation
(3)- "Wearing" or "Non Wearing" as appropriate
(4) -A C Grade Designation
(5)- Specified Lift Thickness

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record non-uniform loads on Form 2177.

Record uniform loads on either Form 28226 or Form 2177.

Automatic printout tickets may be substituted for either of the above two methods. For the Final, submit these Forms or automatic printout tickets in booklet, packet or bundle form with proper reference on the LR.A.

Sq. Yd. In. (*Square Meter, Millimeter)* - Record computations. For the Final, submit these records with proper reference on the I.R.A. *

Method of Measurement: Weight *(Mass)* (Sq. Yd. Inch (Square *Meter, (Millimeter)*
Measure area in square yards *(m2)* and compute weight based on thickness. *

** - Asphalt Mixtures measured by the Square Meter (Square Yard) per specified thickness (mm or inch) and for mixtures measured by the Square Yard Inch. Asphalt mixture of each type and for each specific course will be measured separately by area and the thickness shall be based on the planned dimensions.*

Note: In the absence of appropriate Contract items covering shoulder surfacing and other special construction, the accepted quantities of material used for these purposes will be included for payment with the wearing course materials.

Weight *(Mass)* (Scale) - Non-uniform loads weigh on approved scales. Round each load to the closest 0.1 ton (0.1 *metric ton).*

Uniform Loads - Weigh on approved scales. Round each load to the closest ton (0.1 *metric ton). If* Form 2177 is used, the first ticket each day and the first ticket reflecting any subsequent changes in batch weight and/or number *of* batches per load, shall be modified to include: (1) Weight per batch, (2) number of batches per load, and (3) total weight per load.

Spec. No.: 2350 (cont.)
Contract Items: Type _____, _____Course Mixture, _____mm thick

Unit - U.S.: S. Y.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measurements and computations will be based on actual surface dimensions as placed.

Spec. No.: 2355
Contract Items: Bituminous Material for Fog Seal

Unit - U.S.: Gal.
Unit - Metric: *(Liter)*

Documentation: Record volume on Form 21841. For the Final, submit these forms in booklet or packet form with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure - Measure each distributor load by sticking, by weight or by calibrated meter. Convert to liquid volume at 60° F (15° C). (Do not include additional water mixed with asphalt emulsions.)

Spec. No.: 2356
Contract Items: Bituminous Material for Seal Coat

Unit - U.S.: Gal.
Unit - Metric: *(Liter)*

Documentation: Record volume on Form 21841. For rile Final, submit these forms in booklet or packet form with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure - Measure each distributor load by sticking, by weight or by calibrated mater. Convert to liquid volume at 60° F (15° C). (Do not include additional water mixed with asphalt emulsions.)

Spec. No.: 2356 (cont.)
Contract Items: Seal Coat Aggregate

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation Record uniform loads on Form 28226. Record non-uniform loads on Form 2177 with tape, slip or other accumulation showing total per day. For the Final, submit these Forms in booklet or packet form with proper reference on the I.R.A. See Delivery Tickets. See Uniform Load note – section .410.

Method of Measurement: Weight (Mass) (Scale) - Weigh on approved scales. Round each load to closest 0.1 ton (0.1 *metric ton).*

Round total for each area to closest ton *(metric ton)* per day.

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Spec. No.: 2356 (cont.)
Contract Items: Seal Coat Aggregate (LV)

Unit - U.S.: C.Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record vehicle measurements and computations on Form 2141.
Record the load-count of material used on Form 28226. For the Final, submit these forms in booklet or folder form with proper reference on the I.R.A. See Vehicular Measure.

Method of Measurement: Vehicular Measure - Compute vehicle capacities to the closest 0.1 C.Y (0.1 m3) Round total for each area to the closest C .Y. (M) per day.

Spec. No.: 2357
Contract Items: Bituminous Material for Tack Coat

Unit - U.S.: Gal.
Unit - Metric: *(Liter)*

Documentation: Record volume on Form 21841. For the Final, submit these Forms in booklet or packet form with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure - Measure each distributor load by sticking, by weight or by calibrated meter. Convert to liquid volume at 60^{o} F (15^{o} C). (Do not include additional water mixed with asphalt emulsions.)

Spec. No.: 2358
Contract Items: Bituminous Material for Prime Coat

Unit - U.S.: Gal.
Unit - Metric: *(Liter)*

Documentation: Record volume on Form 21841. For the Final, submit these forms in booklet or packet form with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure - Measure each distributor load by sticking, by weight or by calibrated meter. Convert to liquid volume at 60° F (15° C).

Spec. No.: 2360 Plant Mixed Bituminous Pavement (Super pave)

Contract Items:
Type (1) (2) Wearing Course Mixture *(3) (4) Metric ton (ton)*
Type (1) (2) Non Wearing Course Mixture *(3) (4) Metric ton(ton)*
Type (1) (2) (3) Course mixture (4), (5) (6) mm (inch) thick *Square Meter (Square yard)*
Type (1) (2) (3) Course Mixture (4) (5) *(Square Yard Inch)*
Type (1) (2) Bituminous Mixture for Specified Purpose *Metric ton (ton)*
Type (1) (2) Bituminous Mixture Production -Metric *ton (ton)*

(1)- Mixture Design Type (SP or SM as appropriate)
(2)- Aggregate size designation, 9.5, 12.5 or 19 as appropriate
(3)- "Wearing" or "Non Wearing" as appropriate
(4)- Traffic Level as per table 2360-1 in 2000 Specifications
(5) -AC binder grade Designation
(6)- Specified Lift Thickness

Note: In the absence of appropriate Contract items covering *shoulder surfacing* and other special construction, the accepted quantities *of* material *used for these purposes* will *be included for* payment with *the wearing* course materials.

Unit - U.S.: Ton
Unit - Metric: (Metric Ton)

Documentation: Record non-uniform loads on Form 2177.

Record uniform loads on either Form 28226 or Form 2177.

Automatic printout tickets may be substituted for either of the above two methods. For the Final, submit these Forms or

automatic printout tickets in booklet, packet or bundle form with proper reference on the LR.A.

Sq. Yd. In. *(Square Meter, Millimeter)* - *Record* computations. For the Final, submit these records with proper reference on the I.R.A.*

Method of Measurement: Sq. Yd. Inch (Square *Meter, (Millimeter)* - Measure area in square yards (*m2*) and compute weight based on thickness. *

**For Asphalt Mixtures measured by the Square Meter (Square Yard) per specified thickness (mm or inch) and for mixtures measured by the Square Yard Inch. Asphalt mixture of each type and for each specific course will be measured separately by area and the thickness shall be based on the final dimensions.*

Weight *(Mass)* (Scale) - Non-uniform loads weigh on approved scales. Round each load to the closest 0.1 ton (0.1 *metric ton).*

Uniform Loads - Weigh on approved scales. Round each load to the closest ton (0.1 *metric ton).* If Form 2177 is used, the first ticket each day and the first ticket reflecting any subsequent changes in batch weight and/or number of batches per load, shall be modified to include: (1) Weight per batch, (2) number of batches per load, and (3) total weight per load.

Spec. No.: 2360 (cont.)
Contract Items: Type _____, _____Course Mixture, _____, mm thick

Unit - U.S.: S. Y.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measurements and computations will be based on actual surface dimensions as placed.

Spec. No.: 2401
Contract Items: Structure Concrete (Grade or Mix No.)

Structure Excavation, Class _____

Unit - U. S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

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Spec. No.: 2401 (cont.)
Contract Items: Structure Concrete (Mix No.)
Bridge Slab Concrete (Mix No.)
Sidewalk Concrete (Mix. No.)
Raised Median Concrete (Mix No.)

Unit - U.S.: S.F.
Unit - Metric: *(Square Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

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Spec. No.: 2401 (cont.)
Contract Items: Type _____Railing Concrete (Mix No.)
_____ Median Barrier Concrete (Mix No.)

Unit - U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

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Spec. No.: 2401 (cont.)
Contract Items: Reinforcement Bars Delivered
Reinforcement Bars Placed
Reinforcement Bars _____
Steel Fabric _____
Spiral Reinforcement

Unit - U.S.: Lb.
Unit - Metric (Kilogram)

Documentation:	Record on Form 2215. For the Final, submit these forms in booklet or folder form with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass) (By* Computation) - Compute the mass of re-bars based on the lengths shown in the Plans. The quantity measured will include only those splices, which are shown in the Plans. Use the table shown in Specification 2472.4A. Do not include bar supports or tie wires. For Steel Fabric compute the mass incorporated into the structure based on the quantity shown in the plans. Spiral Reinforcement is based on the mass shown in the Mn/DOT Bridge Construction Manual.

Spec. No.:	2402
Contract Items:	Structural Metals (All items paid for by the pound (kilogram))
Unit - U.S.:	Lb.
Unit - Metric:	(Kilogram)
Documentation:	Record computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Weight Mass (By Computation)- Compute the mass of all structural metals based on the net finished dimensions shown in the Plans using a density of 490 lbs. per cubic foot (7849 *kg/m3).*

Spec. No.:	2402 (cont.)
Contract Items:	Floor Drains, Type _____ _____ Bearing Assemblies Elastomeric Bearing Pads, Type _____ Elastomeric Bearing Assemblies, Type _____
Unit - U.S.:	Each
Unit - Metric:	Each
Documentation:	Record on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Unit - Physical count.

Spec. No.:	2402 (cont.)
Contract Items:	Ornamental Metal Railing Pipe Railing Plate Railing Expansion Joint Devices, Type _____
Unit - U.S.:	L. F.
Unit - Metric:	*(Meter)*
Documentation:	See Plan Quantity.

Method of Measurement: See Plan Quantity.

Spec. No.:	2403 Timber Bridge Construction
Contract Items:	Untreated Timber Treated Timber
Unit - U.S.:	1000 Board Feet
Unit - Metric:	(Cubic *Meter)*
Documentation:	Record computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Miscellaneous - Measurements and computations based on nominal sizes and lengths incorporated in the structure.

Spec. No.:	2403 (cont.)
Contract Items:	Hardware
Unit - U.S.:	Lb.
Unit - Metric:	(Kilogram)
Documentation:	Record computations. For the Final, submit these records with proper references on the I.R.A.

Method of Measurement: Weight (Mass) (By Computation) - Compute the hardware mass based on the unit of mass shown in the plans. (Do not include the mass of rails, dowels, or panel hardware in quantities for payment.)

Spec. No.: 2403 (cont.)
Contract Items: Prefabricated Timber Panels, Type _____
Glued Laminated Deck Panels, Type _____

Unit: - U.S.: Each
Unit - Metric: Each

Documentation: Record on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Unit - Physical count. (Panel hardware is included in this item).

Spec. No.: 2404
Contract Items: Concrete Wearing Course (Type or Mix No.)

Unit - U.S.: S.F.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - The Concrete Wearing Course will be measured by surface area, as computed from specific dimensions. No deduction will be made for the surface area of expansion devices or other miscellaneous appurtenances.

Spec. No.: 2405
Contract Items: Pre-stressed Concrete Beams, Type _____
Pre-stressed Concrete Double Tee-Beams, Type _____

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Unit - Physical count.

Spec. No.: 2405 (cont.)
Contract Items: Pre-stressed Concrete Beams _____ Inch (_____mm)

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record measurements on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Linear Foot *(meter)* - Measured by summation of the individual lengths, out to out, along the centerlines of beams.

Spec. No.: 2405 (cont.)
Contract Items: Diaphragms for Type _____ Pre-stressed Beams

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record measurements on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Linear Foot *(meter)* - Measure horizontal distance of intermediate diaphragms from centerline to centerline of beam along axis of the diaphragms.

Spec. No.: 2411
Contract Items: Structure Excavation Class _____
Structure Concrete (Mix No.)

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity.
Method of Measurement: See Plan Quantity.

Spec. No.: 2411 (cont.)
Contract Items: Concrete (Type of Structure)

Unit - U.S.: S.Y.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measurements and computations will be based on actual surface dimensions as placed.

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Spec. No.: 2411 (cont.)
Contract Items: Reinforcement Bars
Unit - U.S.: Lb.
Unit - Metric: (Kilogram)
Documentation: Record on Form 2215. For the Final, submit these forms in booklet or folder with proper reference on the I.R.A.

Method of Measurement: Weight (Mass) (By Computation) - Compute the mass of reinforcement bars based on the lengths shown in the Plans. The quantity measured will include only those splices, which are shown in the Plans. Use table shown in Specification 2472.4A. Do not include bar supports or tie wires.

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Spec. No.: 2411 (cont.)
Contrail Items: Granular Backfill (CV)
Aggregate Backfill (CV)

Unit - U.S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Computations will be based on the dimensions shown in the Plans, described in the Specifications, or designated by the Engineer.

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Spec. No.: 2411 (cont.)
Contract Items: Granular Backfill (LV)
Aggregate Backfill (LV)

Unit -U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of materials used on Form 28226. For the Final, submit the above Forms in booklet or folder form, with proper reference on the I.R.A. See Vehicular Measure.

Method of Measurement: Vehicular Measure - Measure and compute vehicle capacities to closest 0.1 C.Y. (0.1 m) Round the total for each area to the closest C.Y. *(M)* per day.

Spec. No.: 2411 (cont.)
Contract Items: Concrete Structures, Design _____
Concrete (Type of Structure) _____

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2412

Contract Items: ____in (mm) X ____ in(mm) Pre-cast Concrete Box Culvert

Unit - U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation: Record measurements. For the Final, submit these records with proper reference on the IR.A.

Method of Measurement :Linear *Foot (meter)* - Measured as a summation of the nominal laying lengths of the individual sections incorporated into each structure. Transition sections measured for payment as the larger (or more costly) size.

Spec. No.: 2412 (cont.)
Contract Items: ____ in (mm) X ____ in(mm) Pre-cast Concrete Box Culvert End

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2422
Contract Items: Structure Excavation, Class _____

Unit -U.S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity.
Method of Measurement: See Plan Quantity.

Spec. No.: 2422 (cont.)
Contract Items: Metal Crib Walls
Concrete Crib Walls (2000 Spec)

Unit - U.S.: S.F.
Unit - Metric: (Square *Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute the area of the front face of wall, based on actual completed dimensions.

Spec. No.: 2422 (cont.)
Contract Items: Concrete Crib Walls

Unit - U.S.: S.Y.
Unit - Metric: (Square *Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute the area of the front face of wall, based on actual completed dimensions.

Spec. No.: 2422 (cont.)
Contract Items: Earth Crib Filling
Gravel Crib Filling
Rock Crib Filling

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and computations on Form 2141. Record load-count of material used on Form 28226. For the final, submit these Forms with proper reference on the I.R.A. See Vehicular Measure.

Method of Measurement: Vehicular Measure - Compute vehicle capacities to closest 0.1 C.Y. *(0.1 m3)* Round total for each area to closest C.Y. *(m3)* per day.

Spec. No.: 2433
Contract Items: Structure Removals
Remove (Item Name)
Place Used (Item Name)

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. as a decimal for partial estimate. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - Engineer will estimate the dollar-value percentage of the completed work.

Spec. No.: 2433 (cont.)
Contract Items: Remove (Item Name)
Place Used (Item Name)

Unit - U. S.: Lb.
Unit - Metric: (Kilogram)

Documentation: Record Structural Metals Engineer's quantities on the I.R.A. For the Final, submit these reports in folder or booklet form with proper reference on the I.R.A.

Method of Measurement: Miscellaneous - Contractor will furnish physical properties to Structural Metal's Engineer.

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Spec. No.: 2433 (cont.)
Contract Items: Remove (Item Name)

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Measure length, width and depth and compute volume. No additional compensation will be made for reinforcement encountered in removal.

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Spec. No.: 2433 (cont.)
Contract Items: Place Used (Item Name)
Unit - U.S.: 1000 Board Feet
Unit - Metric: *(Cubic Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement : Miscellaneous - Measurement and computations based on nominal sizes and actual length measurements.

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Spec. No.: 2433 (cont.)
Contract Items: Remove (Item Name)

Unit - U.S.: S. F.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute the area using the actual width and length measurements.

Spec. No.: 2433 (cont.)
Contract Items: Remove (Item Name)
Place Used (Item Name)

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record measurements. For the Final, submit the records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter*- Measure longitudinally along the center of the unit.

Spec. No.: 2433 (cont.)
Contract Items: Remove (Item Name)
Place Used (Item Name)
Anchorages, Type _____

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Unit - Physical count.

Spec. No.: 2442
Contract Items: Remove Existing Bridge

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - Pay the percent completed on each Partial Estimate. Pay 100 % of each item on the satisfactory completion.

Spec. No.:	2451
Contract Items:	Structure Excavation, Class
Unit - U.S.:	C.Y.
Unit - Metric:	*(Cubic Meter)*
Documentation:	See Plan Quantity.

Method of Measurement: See Plan Quantity.

Spec. No.:	2451 (cont.)
Contract Items:	Granular Backfill (LV) Aggregate Backfill (LV) Granular Bedding (LV) Aggregate Bedding (LV) Course Filter Aggregate (LV) Fine Filter Aggregate (LV)
Unit - U.S.:	C.Y.
Unit - Metric:	*(Cubic Meter)*
Documentation:	Record vehicle measurements and volume computations on Form 2141. Record the loads used on Form 28226. For the Final, submit the above forms with proper reference on the I.R.A.

Method of Measurement: Vehicular Measure - Compute vehicle capacities to closest 0.1 C.Y. (0.1 *m3*) Round total for each area to closest C.Y. (m*3)* per day.

Spec. No.:	2451 (cont.)
Contract Items:	Granular Backfill (CV) Aggregate Backfill (CV) Granular Bedding (CV) Aggregate Bedding (CV) Course Filter Aggregate (CV) Fine Filter Aggregate (CV)
Unit - U.S.:	C.Y.

Unit - Metric: (Cubic *Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Computations will be based on the dimensions shown in the Plans, described in the Specifications, or designated by the Engineer.

Spec. No.: 2451 (cont.)
Contract Items: Soil Bearing Tests

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record the number of tests completed to the Engineer's satisfaction. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2452
Contract Items: Untreated Timber Piling Delivered
Treated Timber Piling Delivered
Cast-in-Place Concrete Piling Delivered
Steel H-Piling Delivered

Unit - U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation: Record on form 2210. For the Final, submit Form 2210 with proper reference on the L.R.A.

Method of Measurement: Linear Foot *(meter)*-Measured as a summation of the lengths (as authorized by the Engineer) of acceptable piling delivered to the job site.

Spec. No.: 2452 (cont.)
Contract Items: Unteated Timber Piling Driven
Treated Timber Piling Driven
Cast-in-Place Concrete Piling Driven
Steel H-Piling Driven

Unit -U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record on Form 2210. For the Final, submit Form 2210 in folder or booklet form with proper reference on the I.R.A.

Method of Measurement: Linear Foot (meter)-Measure length of acceptable piling driven below cut off

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Spec. No.: 2452 (cont.)
Contract Items: Unteated Timber Test Piles, _____ Feet *(m)* Long
Treated Timber Test Piles, _____Feet *(m)* Long
Cast-in-Place Concrete Test Piles, _____Feet (m) Long
Steel H-Test Piles, _____ Feet *(m)* Long

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record on Form 22 10. For the Final, submit Form 22 10 in folder or booklet form with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

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Spec. No.: 2452 (cont.)
Contract Items: Reinforcement Bars

Unit - U.S.: Lb.
Unit - Metric: *(Kilogram)*

Documentation: Record computations. For the Final, submit these forms in booklet form with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass)* *(By* Computation) - Compute the mass of reinforcement bars based on lengths shown in the Plans. The quantity measured will include only those splices, which are shown in the Plans. Use table shown in Specification 2472.4A. Do not include bar supports or tie wires.

. . . . . .

Spec. No.: 2452 (cont.)

Contract Items: Pile Load Tests, Type _____

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Unit - Physical count.

Spec. No.: 2461
Contract Items: Concrete, Mix No. _____

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

Spec. No.: 2461 (cont.)
Contract Items: Concrete, Mix _____

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Use Approximate Volume show on Form 2158 minus accountable waste. For the Final, submit Forms 2158, initialed and dated by the field inspector, with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure - Computed, theoretical volume based on the mass of the batch ingredient. The quantities so determined will be reduced for payment by all account able waste.

Spec. No.: 2472
Contract Items: Reinforcement Bars
Steel Fabric
Spiral Reinforcement

Unit - U.S.: Lb.
Unit - Metric: (Kilogram)

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Weight (Mass) (By Computation) - Compute the mass of reinforcement bars based on lengths shown in the Plans. The quantity measured will include only those splices, which are shown in the Plans. Use table shown in Specification 2472.4A. Do not include bar supports or tie wires.

When computing the weight of Steel Fabric, use the nominal mass incorporated into the structure based on the quantity shown in the Plans.

When computing mass of Spiral Reinforcement, use the table in the Mn/DOT Bridge Construction Manual.

Spec. No.: 2472 (cont.)
Contract Items: Couplers (Reinforcement Bars) T-_____

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record on the I.R.A. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Unit - Physical count.

Spec. No.: 2476 (Spec 2000)
Contract Items: Painting Metal Structures

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. as a decimal for Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - Pay the percent completed on each Partial Estimate. Pay 100% of this item upon satisfactory completion.

Spec. No.: 2476 (cont.)
Contract Items: Painting Metal Structures

Unit - U.S.: S. F.
Unit - Metric: (Square *Meter)*
Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

Spec. No.: 2478
Contract Items: Epoxy Zinc-Rich Paint System (Field) (2000)
Organic Zinc-Rich Paint System (Field) 2005)
Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. as a decimal for Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - Pay the percent completed on each Partial Estimate. Pay 100% of this item upon satisfactory completion.

Spec No.: 2478(cont.)
Contract Items: Epoxy Zinc-Rich Paint System (Shop)
Epoxy Zinc-Rich Paint System (Old)
Epoxy Zinc-Rich Paint System (New)
Organic Zinc-Rich Paint System (Shop)
Organic Zinc-Rich Paint System (Old)

Unit - U.S.: S.F.
Unit - Metric: *(Square Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

Spec. No.: 2479
Contract Items: Inorganic Zinc-Rich Paint System (Shop)

Inorganic Zinc-Rich Paint System (Field)
Inorganic Zinc-Rich Paint System (Shop and field)

Unit - U.S.: S.F.
Unit - Metric: *(Square Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

Spec. No.: 2481
Contract Items: Joint Waterproofing

Unit - U. S.: L. F.
Unit - Metric: *(Meter)*

Documentation: Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter)* Measure the length of the joints waterproofed.

Spec. No.: 2501
Contract Items: Pipe Culverts ______

Spec. No.: 2501 (cont.)
Contract Items: Culvert Excavation

Unit - U.S.: C.Y.
Unit - Metric: (Cubic *Meter)*

Documentation: See Plan Quantity.
Method of Measurement: See Plan Quantity.

. . . .

Spec. No.: 2501 (cont.)
Contract Items: Culverts, Cattle Passes
(All types, sizes, classes, and shapes)
Install _____

Unit -U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation:	Record measurements. For the Final, submit these records with proper reference on the I.R.A.
Method of Measurement:	Linear Foot *(meter)* - Measured as a summation of the nominal lengths. Transitional sections will be measured as the larger size pipe.

Spec. No.:	2501 (cont.)
Contract Items:	Aprons (All types, sizes) Flap Gates Diaphragms Transition Sections _____ *(mm)* Safety Apron and Grate _____*(mm)* RC Dissipator Ring Install _____
Unit - U.S.:	Each
Unit - Metric:	Each
Documentation:	Record physical count. For the Final, submit these records in booklet form with proper reference on the I.R.A.
Method of Measurement:	Unit - Physical count (except that aprons furnished by the Department will be measured as additional culvert length

Spec. No.:	2502
Contract Items:	Drains (All types, sizes) Install _____
Unit - U.S.:	L.F.
Unit - Metric:	*(Meter)*
Documentation:	Record Measurements. For the Final, submit these records with Proper reference on the I.R.A.
Method of Measurement:	Linear Foot *(meter)* - Measured along centerline of drain from free outlet to junction with in-place pipe, or center of structure.

Spec. No.: 2502 (cont.)

Contract Items: _____ " (mm) Pre-cast Concrete Headwall
Install _____

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2503
Contract Items: Sewer Pipe (All types, classes and shapes)
Install _____

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record measurements. For the Final, submit these records with proper reference on the LR.A.

Method of Measurement: Linear Foot *(meter)* - Measured along centerline of sewer from free outlet to junction with in-place pipe, or center of structure.
Transition sections will be measured as the larger size pipe.

. . . . . .

Spec. No.: 2503 (cont.)
Contract Items: Flap Gates (All types, sizes, and shapes)
Install ____

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2506
Contract Items: Construct Drainage Structure, Design _____
Reconstruct Drainage Structure

Unit - U.S.:	L.F.
Unit - Metric:	*(Meter)*
Documentation:	Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter)* - Measure from the invert elevation of the outlet pipe to the bottom of the ring or frame casting, plus 0.70 feet (0.20 *m).* For T-Sections, measure from flow line to bottom casting. When apron is used on inlet, measure from inside periphery opposite opening m the joint where pipe and apron meet. Measure to the closest 0.1 L.F. (3*0 mm).*

Linear Foot *(meter)* - Measure from bottom of reconstructed portion to bottom of frame or ring casting, to the closest 0.1 L. F. *(30 mm)*

. . . . . .

Spec. No.:	2506 (cont.)
Contract Items:	Construct Drainage Structure, Design _____
Unit - U.S.:	Each
Unit - Metric:	Each
Documentation:	Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count. Measure as a complete structure including any casting furnished and installed.

. . . . . .

Spec. No.:	2506 (cont.)
Contract Items:	Casting Assembly Install Casting Adjust Frame and Ring Casting
Unit - U.S.:	Each
Unit - Metric:	Each
Documentation:	Record physical count. For the Final, submit these records with proper reference on the LR.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2511
Contract Items: Random Riprap, Class _____
Quarry-run Riprap
Hand-placed Riprap
Grouted Riprap
Granular Filter

Unit - U.S.: C.Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Measure the surface dimensions as staked in the field and multiply by the specified thickness.

. . . . . .

Spec. No.: 2511 (cont.)
Contract Items: Random Riprap, Class _____
Quarry-run Riprap
Granular Filter Material

Unit - U.S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Record uniform loads on Form 28226. Record non-uniform loads on Form 2177, with tape, slip or other accumulation showing total per day or area. For the Final, submit the above applicable forms in booklet or packet form with proper reference on the I.R.A. See uniform load note – section .410.

Method of Measurement: Weight *(Mass)* (Scale) - Weigh on approved scale. Round each load to closest 0.1 ton (0.*1 metric ton).* Round total for each area to closest ton *(metric ton)* per day.

. . . . . .

Spec. No.: 2511 (cont.)
Contract Items: Geotextile Filter, Type _____

Unit - U.S.: S. Y.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the LR.A.

Method of Measurement: Area Computation - Filter material will be measured and computed on the basis of actual surface dimensions as staked, with no allowance for overlaps.

Spec. No.: 2512
Contract Items: Gabion
Revet Mattress

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: See Plan Quantity.

Method of Measurement: See Plan Quantity.

Spec. No.: 2514
Contract Items: Concrete Slope Paving
Aggregate Slope Paving

Unit - U.S.: S.Y.
Unit - Metric: *(Square Meter)*

Documentation: Record on Form 28233. Modify Form 28233 to show width of material placed. For the Final, submit these forms in packet or booklet form with proper reference on the I.R.A.

Method of Measurement: Area Computation - Compute the square feet (m2) of surface area as staked in field.

Spec. No.: 2520
Contract Items: Lean Mix Backfill

Unit - U.S.: C.Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Use Approximate Volume show on Form 2158 minus accountable waste. For the Final, submit Forms 2158, initialed and dated by the field inspector, with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure - Computed, theoretical volume based on the mass of the individual batch ingredients. The quantities so determined will be reduced for payment by all account able waste.

Spec. No.: 2521
Contract Items: _____ (mm) Concrete Walk
_____ (mm) Bituminous Walk
_____ (mm) Concrete Terrace
_____ (mm) Bituminous Terrace

Unit - U. S.: S. F.
Unit - Metric: *(Square Meter)*

Documentation: Record on Form 28233. Modify Form 28233 to show width of material placed. For the Final, submit these forms in packet or booklet form with proper reference on the I.R.A.

Method of Measurement: Area Computation - Each uniform thickness will be measured separately by top surface area.

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Spec. No.: 2521 (cont.)
Contract Items: _____ Sawing Concrete Walk

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record measurements. For the Final, submit the records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter*- Measure longitudinally along the sawcut.

Spec. No.: 2531
Contract Items: Concrete Curb & Gutter, Design _____
Concrete Curb, Design _____

Concrete Median

Unit - U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation: Record on Form 28233. For the Final, submit these forms in booklet form with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter) - Measure* along face of the curb at the gutter line or along centerline of the longitudinal axis. (If a variance from basic design results in an increase in cross sectional area, a new Unit Price must be negotiated.)

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Spec. No.: 2531 (cont.)
Contract Items: Concrete Median
_____ *" (mm)* Concrete Driveway Pavement
Pedestrian Curb Ramp (Type _____)

Unit - U.S.: S.Y.
Unit - Metric: *(Square Meter)*

Documentation: Record on Form 28233. Modify Form 28233 to show width of material placed. For the Final, submit these forms in booklet form with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure length as staked, times plan width, or authorized change in width.

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Spec. No.: 2531 (cont.)
Contract Items: Structural Concrete
Concrete (Type of Structure)

Unit -U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*
Documentation: Record on Form 28233. Modify Form 28233 to show cross sectional area shown in the Plans. For the Final, submit these forms in booklet form with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) –

Computations based on the length as staked, times the cross-sectional area shown in the Plans or other-wise authorized.

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Spec. No.: 2531 (cont.)
Contract Items: Pedestrian Curb Ramp (Type _____)

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Measure as a complete in-place item.

Spec. No.: 2533
Contract Items: Concrete Median Barrier, Design (1) Type (2)
Concrete Median Barrier & Glare Screen, Design (1)
Portable Precast Concrete Barrier, Design (1)
(1) Current Standard Plate
(2) Type A, AA, AL, Transition, A Step, or AA Step

Unit - U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation: Record on Form 28233. For the Final, submit these forms in booklet form with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter)* - Measure length on the top of the barrier along the centerline of Type A barriers and 3 inches *(75 mm)* back of the front face of Type AA barriers. Transitions special and modified barriers, shall be measured on the top of the barrier and 3 inches *(75 mm)* back of the front face.

Spec. No.: 2535
Contract Items: Bituminous Curb

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation:	Record measurements. For the Final, submit these records with proper reference on the I.R.A.
Method of Measurement:	Linear Foot *(meter)* - Measure along face of curb at the gutter line.

Spec. No.:	2545
Contract Items:	Electric Lighting System Electric Power System Conduit System
Unit - U.S.:	L. S.
Unit - Metric:	L. S.
Documentation:	Record on the I.R.A. as a decimal for Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.
Method of Measurement:	Lump Sum - Pay the percent completed on each Partial Estimate. Pay 100% of this item upon satisfactory completion.

Spec. No.:	2545 (Cont)
Contract Items:	Sign Lighting System - _____ Fixtures Sign Lighting System Bridge Mounted - Fixtures
Unit - U.S.:	System
Unit - Metric:	System
Documentation:	Record on the I.R.A. as a decimal for Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.
Method of Measurement:	Lump Sum - Pay the percent completed on each Partial Estimate. Pay 100% of this item upon satisfactory completion.

Spec. No.:	2545 (cont.)
Contract Items:	Lighting Unit, Type____ Luminaire Underpass Lighting Fixture, Type _____

Light Base, Design _____
Service Cabinet, _____ Type _____
Junction Box
Pull Box
Equipment Pad
Handhole
____ foot (m) Wood Pole, Class _____

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2545 (cont.)
Contract Items: _____ " (mm) Rigid Steel Conduit
_____ " (mm) Intermediate Metal Conduit
_____ " (mm) Nonmetallic Conduit
Underground Wire, ____Conductor No. _____
Armored Cable, _____ Conductor No. ____
Overhead Light Cable, _____Conductor No. _____

Unit - U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation: Record Measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter)* - Measured by length between the end terminals along centerline of wire as installed.

Spec. No.: 2550
Contract Items: Traffic Management System
_____System
Systems Integration

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. as a decimal for Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - Pay the percent completed on each Partial Estimate. Pay 100% of this item upon satisfactory completion.

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Spec. No.: 2550 (cont.)
Contract Items:
_____" (mm) Rigid Steel Conduit
_____ *"(mm)* Pushed Conduit
_____ *"(mm)* Non-metallic Conduit
_____ Cable _____ Pr. No. _____
_____ Cable _____ Conductor No. _____
_____ Cable _____
Fiber optic Trunk Cable ____ MM ____ SM

Unit - U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation: Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter)* - Measured by length between the end terminals along centerline of wire as installed.

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Spec. No.: 2550 (cont.)
Contract Items:
_____ Foundation
Handhole, Type _____
Junction Box
Fiber optic Pigtail
Fiber optic Splice Vault
Outdoor Fiber Splice Enclosure
Buried Cable Sign
Truck Pad
____mm X ____ mm Loop Detector, Design _____
Loop Detector Splice

Ramp Control Signal, Design ____
Flasher Signal
Lane Control Signal
Closed Circuit Television Assembly
Changeable Message Sign, Design _____

	_____Cabinet Service Installation Loop Detector Module Controller _____ Multiplexer _____ Demultiplexer _____ Range Video Transmitter _____ Range Video Receiver
Unit - U.S.:	Each
Unit - Metric:	Each
Documentation:	Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.:	2554
Contract Items:	Traffic Barrier, Design _____ Install Traffic Barrier, Design _____ Permanent Barricades
Unit - U.S.:	L. F.
Unit - Metric:	*(Meter)*
Documentation:	Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter)* - Barriers of each design designation will be measured by length, to the nearest 0.3 m, between center of end posts continuous in each section. Barricades measured, by length to the nearest 0.3 m, from end to end of planks of each unit.

Spec. No.:	2554 (cont.)
Contract Items:	Guide Post, Type _____ Install Guide Post, Type _____ Anchorage Assembly End Treatment- _____
Unit - U.S.:	Each
Unit - Metric:	Each
Documentation:	Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.:	2557
Contract Items:	Wire Fence, Design _____ Metal Post Extensions
Unit - U.S.:	L. F.
Unit - Metric:	*(Meter)*
Documentation:	Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter)* - Measure along the bottom of the fence between end posts. Gates excluded.

Metal Post Extensions are determined as the difference between the standard post length and the actual post length as installed.

Spec. No.:	2557 (cont.)
Contract Items:	Pedestrian Gate Vehicular Gate Wood Brace Assembly Electrical Ground Metal Brace Assembly Metal Brace Assembly (Chain Link Fence) Electrical Ground
Unit - U.S.:	Each
Unit - Metric:	Each
Documentation:	Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.:	2560
Contract Items:	Highway-Railroad Grade Crossing Signal System
Unit - U.S.:	L. S.

Unit - Metric:	L. S.
Documentation:	Record on the I.R.A. as a decimal for the Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - Pay the percent completed on each Partial Estimate. Pay 100% of this item upon satisfactory completion.

Spec. No.:	2564
Contract Items:	Traffic Signs & Devices Saw Sign Panel Type_____
Unit -U.S.:	L. F.
Unit - Metric:	*(Meter)*
Documentation:	Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Foot (meter) - Sawing will be measured by the length of the saw cut.

Spec. No.:	2564 (cont.)
Contract Items:	Concrete Footings - Type
Unit - U.S.:	C.Y.
Unit - Metric:	*(Cubic Meter)*
Documentation:	Record dimensions and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Use staked dimensions, include mortis used for capping the footings. Compute to the closest 0. 1 C.Y (0. 1 m

Spec. No.:	2564 (cont.)
Contract Items:	Median Barrier Footing Sign Support Modify Post Install Sign Panel Type _____ Install Sign Type _____ Sign Legend Revision OH Sign Identification Plate

Extend Walkway Support
Friction Fuse
Keeper Plate
Delineator, Type _____
Reference Post Marker
Clearance Marker X4-4
Snowplow Marker X4-5
End of Roadway Marker X4-11

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2564 (cont.)
Contract Items: Traffic Control

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. as a decimal for Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump-Sum - Pay the percent completed in each Partial Estimate. Pay 100% when all work has been completed and accepted.

Spec. No.: 2564 (cont.)
Contract Items: Overhead Sign Structure Repair

Unit - U.S.: Man-Hour
Unit - Metric: Man-Hour

Documentation: Record the hours on Form 2137. For the Final, submit these forms in booklet of folder form, with proper reference on the I.R.A.

Method of Measurement: Miscellaneous - Measure the actual number of man-hours required to complete the repair, including

use and operation of equipment, travel time within the project limits, and work and materials involved. Crane work and materials required to position and block the truss up off the ground are incidental.

Spec. No.: 2564 (cont.)
Contract Items: Structural Steel - (Specify Item and Use)

Unit - U.S.: Lb.
Unit - Metric: *(Kilogram)*

Documentation: Record Structural Metals Engineer's quantities on the I.R.A. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Miscellaneous - Contractor will furnish physical properties to Structural Metals Engineer.

Spec. No.: 2564 (cont.)
Contract Items: Structural Steel - (Specify Item and Use)

Unit - U.S.: Lb.
Unit - Metric: *(Kilogram)*

Documentation: Record computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass)* *(By* Computation)-The computed mass will be based on the quantity tables included in the plans.

Spec. No.: 2564 (cont.)
Contract Items: Structural Steel - (Specify Item and Use)

Unit - U.S.: Lb.
Unit - Metric: *(Kilogram)*

Documentation: Record weights. For the Final, submit the tickets with proper reference on the I.R.A.

Method of Measurement: Weight *(Mass)* (Scale) - Weigh on approved scale. If weighed by other than state scale man, the mass must be certified.

Spec. No.: 2564 (cont.)
Contract Items: Sign Panels, Type _____
Furnish Sign Panels, Type ____
Sign Panel Overlay Type ____

Unit - U.S.: S.F.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measurements and computations are based on nominal dimensions. Stop signs are to be considered rectangular. Yield signs are to be considered equilateral triangles. No deduction for round comers.

Spec. No.: 2565
Contract Items: Full-Traffic-Actuated Traffic Control Signal System
Semi-Traffic-Actuated Traffic Control Signal System
Fixed-time Traffic Control Signal System
Traffic Control Signals System (2005)

Unit - U.S.: System
Unit - Metric: System

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Spec. No.: 2571
Plant Installation

Contract Items: Coniferous, Deciduous or Ornamental _____
(Size and root category)
Vine or Perennial (Age or size and root category)
Transplant Tree (spade size)

Transplant Shrub, Vine or Perennial

Unit - U.S.: Tree, Shrub, Vine, Plant
Unit - Metric: Tree, Shrub, Vine, Plant

Documentation: Record physical count. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Note: *State Root Category: Seedling, bare root, machine moved, container grown, or balled and burlapped*

Spec No. 2572
Contract Items: Temporary Fence
Clean Root Cutting

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record location and measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Feet *(meter)* -Measure along the bottom of the fence between end posts for the fence placed, maintained, and removed.

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Spec No. 2572 (cont)
Contract Items: Water

Unit - U.S.: Gal
Unit - Metric: *(liter)*

Documentation: Record on Form 21236. For the Final, submit these forms with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure - Measure each load by sticking, by weight or by calibrated meter. When a municipal meter is used, a certificate from the municipal officer is acceptable.

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Spec. No.: 2572 (cont.)
Contrail Items: Sandy Loam Fill

Unit - U.S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Computations will be based on compacted volume furnished and placed as designated by the Engineer.

Note: *If no bid item is provided for the following protection and restoration of vegetation items, back sheet items muse be created and paid for at the indicated unit prices: Temporary Fence at $2.50 per linear foot ($8. 00* per m); *Clean Root Cutting at $3.50per linear foot ($11.50* per m); *Water at $3.00 per 1 00 gallons ($8.00* per m 3); *Sandy Loam Fill at $7.50per cubic yard ($10.00* per m 3); *and Prune Trees at $ 75.00 per hour.*

Spec. No.: 2573
Contract Items: Silt Fence, Type _____
Bale Barrier
Temporary Pipe Down drain
Floatation Silt Curtain, Type _____
Temporary Ditch Check, Type _____
Filter Log, Type _____

Unit - U.S.: L.F.
Unit - Metric: *(Meter)*

Documentation: Record location and length. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Foot *(meter)* - Measure along the base of the fence from outside to outside of the end posts for each section of fence. Measure down drain or Curtain length furnished and acceptably installed.

Note: *If no bid item is provided for the following temporary erosion control items, back sheet items must be created and paid far at the indicated unit prices: Bale Barrier at $1.85 per linear foot ($6.00 per m); Silt Fence Heavy*

Duty (without maintenance) at $3.00 per linear foot ($10.00 per m); Silt Fence, type Machine Sliced at $2.00 per linear foot ($6.50 per m); Floatation Silt Curtain, Type: Still Water, 4 foot (1.2 m) depth at $16 00 per linear foot ($52.00 per m); *Filter Log, Type Straw Biolog at $1.00 per linear foot ($3.00 per m)*; *Filter Log, Type Rock Log at $0.55 per linear foot ($1.80 per m.)*

Spec. No.: 2573 (cont.)
Contract Items: Sediment Trap Excavation

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit the x-section books and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross Section Measure (EV Excavated Volume) – Compute volume using the average-end area method of material in its original position. Sediment removed will be measured and added to the quantity of excavation.

Note: *If no bid* item is *provided for Sediment Trap Excavation, a back sheet item must be created and paid for at the unit price of $3.00 per cubic yard ($4. 00* per m3).

Spec. No.: 2573 (cont.)
Contract Items: Diversion Mound

Unit - U.S.: C. Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record x-section notes in x-section book. Plot areas and show volume computations on x-section rolls. For the Final, submit the x-section books and rolls with proper reference on the I.R.A. See Records to be submitted in section .510.

Method of Measurement: Cross Section Measure (CV Compacted Volume) – Compacted volume will be determined by cross-section measure of the material in its final configuration.

Spec. No.: 2573 (cont.)
Contract Items: Sandbag Barrier
Sediment Mats

Unit - U.S.: S.F.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure surface area acceptably installed based on actual measurement taken alone the length of the barrier times its height. When more than one thickness of bays is installed, the surface area of each layer of thickness will be measured and added to the quantity. Sediment mats will be measured by the area furnished and acceptably installed.

Note: *(2000 Spec) If no bid item is provided for the following temporary erosion control items, back sheet items must be created and paid for at the indicated unit prices. Additional Tillage ordered by the Engineer prior to seeding interim mulched areas will be paid for at the same unit price as disk anchoring, Disk Anchoring at $27.00 per acre ($67.00 per ha).*

Spec. No.: 2573 (cont.)
Contract Items: Bituminous Lined Flume

Unit -U.S.: S.Y.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure on the basis of actual surface dimensions as placed without regard to bituminous mixture used or number of courses placed.

Any damaged areas restored, by order of the Engineer, will be added to the original quantity.

Note: *If no bid item is provided for Bituminous Lined Flume, a back sheet item must be created and paid for at the unit price of $5.00per square yard* ($6.00 per *m2*)

Spec. No.: 2573 (cont.)
Contract Items: Bale Check (2000 Spec)
Riser Standpipe (2000 Spec)
Storm Drain Inlet Protection (2005 Spec)
Flocculant Sock (2005 Spec)

Unit - U.S.: Each
Unit - Metric: Each

Documentation: Record physical count and location. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Unit - Physical count.

Note: *If no bid item is provided for the following temporary erosion control items, back sheet items must be created and paid for at the indicated unit prices.*
(2000 Spec) Bale Check at $5.50 per bale.
(2005 Spec) Flocculant Sock at $200 each.

Spec. No.: 2573 (cont.)
Contract Items: Sediment Removal, Backhoe

Unit - U.S.: Hour
Unit - Metric: Hour

Documentation: Record equipment hours on Form 2137. For the Final, submit these forms in booklet or folder form, with proper reference on the I.R.A.

Method of Measurement: Miscellaneous - Measured by the number of hours of actual equipment working time and necessary traveling time within the project limits.

Note:	*If no bid item is provided for the Sediment Removal, Backhoe a back sheet item must be created and paid for at the unit price of $120.00 per hour. (2005 Spec)*
Spec. No:	2573 (cont.)
Note:	*(2000 Spec) If no bid item is provided for Temporary Seed Mixture a back sheet item must be created and paid for at the price of:* *Type 100-110B @ $0.20 per pound ($0.44 per kg)* *Type 120B @ $2.75 per pound ($6.00 per kg)* *Type 125B @ $3.75 per pound ($8.25 per kg)* *Type 130B @ $0.50 per pound ($0.90 per kg)* The Documentation and the Method of Measurement will be based on a like item found in this manual.
Spec. No.:	2575
Contract Items:	Seeding Disk Anchoring Mowing Weed Spraying Rapid Stabilization Method 1 or 2
Unit - U.S.:	Acre
Unit - Metric:	*(Hectare)*
Documentation:	Record dimensions and computations for the accepted areas. For the Final, submit these records with proper reference on the I.R.A.
Method of Measurement:	Area Computation - Measure and compute accepted areas. Areas reseeded by order of the Engineer, after the original seeding of the area was accepted, will be measured and added to the area originally seeded.
Note:	*(2005 Spec) If no bid item is provided for the following items, a back sheet item must be created and paid for at the price of:* *Rapid Stabiliation, Method 1 at $400.00 per acre ($900 per ha); Rapid Stabilization, Method 2 at $500 per acre ($1235 per ha); Disk Anchoring at $30 per acre ($75 per ha)*

Spec. No.:	2575 (cont.)
Contract Items:	Sodding Type _____ Polypropylene Plastic Netting (2000 Spec) Erosion Control Netting (2005 spec) Erosion Stabilization Mat, Class _____ (2005 Spec) Wood Fiber Blanket, Type _____ Erosion Control Blankets, Category _____ Erosion Stabilization Blanket, Type _____ Hydraulic Soil Stabilizer, Type 1 (2005 Spec) Rapid Stabilization Method 4 (2005 Spec)
Unit - U. S.:	S. Y.
Unit - Metric:	*(Square Meter)*
Documentation:	Record dimensions and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute accepted areas. Sodded areas covered in uniform strips may be determined from the number of strips placed times the strip dimensions. Where sod is placed shingle style in waterways, the product of the sod strip width and the number of strips placed will be used as the measurement. Areas recovered by order of the Engineer will be added to the original quantity.

Note: *(2005 Spec) If no bid item is provided for the following items, a back sheet item must be created and paid for at the price of:*
Rapid Stabilization, Method 4 at $2.50 per SY ($3.00 per m2); Erosion Control Blanket Category 4 at $2.00 per sy ($2.20 per m2).

Spec. No.:	2575 (cont.)
Contract Items:	Seed, Mixture _____, or (Species) Fertilizer, Type _____ Hydraulic Soil Stabilizer, Type _____
Unit - U.S.:	Lb.
Unit - Metric:	*(Kilogram)*

Documentation:	Sack Method - Record the computations, utilizing the commercial tickets attached to the package or the weights printed on the package. Invoice Documentation - Record the number of containers on the Invoice and initial. For the Final, submit the computations or invoices, whichever is most appropriate, with proper reference on the I.R.A.
Method of Measurement:	Weight *(Mass)* (By Computation, Sack) - Count the number of sacks used and multiply by the mass per sack. Weight *(Mass)* (By Computation, Invoice)- Check off all the material delivered against that shown on the supplier's invoice. In either case, material used in re-doing areas by order of the Engineer, after the original area was accepted, will be added to the original quantities.
Note:	*(2005 Spec) If no bid item is provided for Temporary Seed Mixture a back sheet item must be created and paid for at the price of:* *Type 100-110 @ $0.20 per pound ($0.44 per kg)* *Type 150 @ $1.35 per pound ($3.00 per kg)* *Type 190 @ $1.25 per pound ($2.75 per kg)*
Spec. No.:	2575 (cont.)
Contract Items:	Seed, Mixture ____, or (Species) Mulch Material, Type ____
Unit - U.S.:	Lb./Ton
Unit - Metric:	(Kilogram)
Documentation:	Bulk Method (1) Record on Form 2177 (2) Record the mass from the commercial delivery ticket. For the Final, submit the above applicable records with proper reference on the I.R.A.

Method of Measurement: Weight (Mass) (Scale) - use (1) or (2), whichever method is most appropriate.
(1) Weigh on approved scales.
(2) Use the mass from the manufacturer's Bill of Lading or approved commercial delivery tickets. Material used in re-doing areas by order of the
Engineer, after the original area was accepted, will be added to the original quantities.

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Spec. No.: 2575 (cont.)
Contract Items: Mulch Material, Type _____

Unit - U. S.: Ton
Unit - Metric: *(Metric Ton)*

Documentation: Bale Method - Record the computations, utilizing either the commercial tickets attached to the package, or the nor mass printed on the package. For the Final, submit the computations with the tickets (or bag fronts) with proper reference on the I.R.A.

Method of Measurement: *Weight (Mass)* (By Computation) - Count the number of bales used and multiply by the nominal mass per bali in re-doing areas by order of the Engineer, after the original area was accepted, will be added to the original quantity.

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Spec. No.: 2575 (cont.)
Contract Items: Mulch Material, Type _____

Unit - U.S.: Gal.
Unit - Metric: *(Liter)*

Documentation: Record on Form 21841. For the Final, submit these forms in booklet or packet form with proper reference on the 1.1

Method of Measurement: Volumetric Measure (Liquid) - Measure each load by sticking, by weight or by calibrated meter, convert to liquid 60^{o} F (15^{o} C. Re-doing of initially accepted areas, by order of the Engineer, will be added to original quantity.

Spec. No.: 2575 (cont.)
Contract Items: Mulch Material, Type _____

Unit - U.S.: C. Y.
Unit - Metric: (Cubic *Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the loads used on Form 28226- For the Final, submit these forms in booklet or folder form with proper reference on the I.R.A.

Method of Measurement: Vehicular Measure - Compute vehicle capacities to closest 0.1 C.Y. (0.1 m3) Round total for each area to the closest C. Y. (M) per day. Re-doing of initially accepted areas, by order of the Engineer, will be added to original quantity.

Spec. No.: 2575 (cont.)
Contract Items: Water

Unit - U.S.: 1000 (M) Gal.
Unit - Metric: *(Cubic Meter)*

Documentation: Record on Form 21236. For the Final, submit these forms in booklet or packet form with proper reference on the 1.

Method of Measurement: Volumetric Measure (Liquid) - Load-Count Method – Measure and compute tank capacities to the closest 100 gallons (0.4 m 3) and count the number of loads used.
Meter Method. Use calibrated meter, and modify Form 21236 to show beginning and ending reading. When a municipal meter is used, a certificate from the municipal officer is acceptable.Computations can be based on the cubic foot ca 7.481 gallon per cubic feet the net density of the water, at 8.345 lbs. per gallon *(1.0 kg lL).*

Spec. No.: 2575 (cont.)
Contract Items: Rapid Stabilization Method 3

Unit - U.S.: 1000 (M) Gal.
Unit - Metric: *(Cubic Meter)*

Documentation: Record on Form 21236. For the Final, submit these forms in booklet or packet form with proper reference on the 1.

Method of Measurement: Volumetric Measure (Liquid) - Load-Count Method – Measure and compute tank capacities to the closest 100 gallons (0.4 m 3) and count the number of loads used.

Note*:* *(2005 Spec) If no bid item is provided for Rapid Stabilization, Method 3, a back sheet item must be created and paid for at the price of $325 per MGAL ($86 per m3)*

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Spec. No.: 2575 (cont.)
Contract Items: Commercial Fertilizer, Analysis
Agricultural Lime
Compost, Grade I
Rapid Stabilization Method 5

Unit - U.S.: Ton/Lb.
Unit - Metric: *(Metric Ton)*

Documentation: Bulk Method

(1) Record on Form 2177
(2) (2) Record the mass from the commercial delivery ticket

For the Final, submit the above applicable records with proper reference on the I.R.A.

Method of Measurement: Weight (Mass) (Scale) - Use (1) or (2) whichever method is most appropriate.
(1) Weigh on approved scales.
(2) Use the mass from the manufacturer's Bill of Lading or commercial delivery tickets.

Note*:* *(2005 Spec) If no bid item is provided for Rapid Stabilization, Method 5, a back sheet item must be*

created and paid for at the price of $25 per ton ($27 per metric ton)

Spec. No.: 2575 (cont.)
Contract Items: Weed Spray Mixture

Unit - U.S.: Gal.
Unit - Metric: *(Liter)*

Documentation: Container Method - Record the computations utilizing the volume printed on drums or pails.
Invoice Documentation - Record the number of pails or drums acceptably used and compute gallons *(liter)* used on invoice and initial.
For the Final, submit the computations or invoices. Whichever is most appropriate, with proper reference on the I.R.A.

Method of Measurement: Miscellaneous - Count the number of containers used and multiply by the gallons *(liter)* printed on container.
Miscellaneous - Use material suppliers invoice, check off all the material acceptably used.

Spec. No.: 2575 (cont.)
Contract Items: Compost, Grade 2 (LV)

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record vehicle measurements and volume computations on Form 2141. Record the load-count of material 28226. For the Final, submit the above forms in booklet or folder form, with proper reference on the I.R.A.

Method of Measurement: Vehicular Measure (LV - Loose Volume) - Measure and compute the capacity of the hauling vehicle to the C.Y. (0. 1 M) Round the total for each area to the closest C. Y. (M) per day.

Spec. No.: 2575 (cont.)
Contract Items: Turf Establishment

Unit - U.S.: L. S.
Unit - Metric: L. S.

Documentation: Record on the I.R.A. as a decimal for the Partial Estimate. For the Final, submit the I.R.A. as Source Documentation.

Method of Measurement: Lump Sum - Pay the percent completed on each Partial Estimate. Pay 100% of this item upon satisfactory comp

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Spec. No.: 2577
Contract Items: Soil Bioengineered Systems
Wattling
Brush Layering
Fiber Log

Unit - U.S.: L. F.
Unit - Metric: *(Meter)*

Documentation: Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Feet (meter) - Measure length of work actually performed.

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Spec. No.: 2577 (Cont)
Contract Items: Granular Channel Liner

Unit - U.S.: C.Y.
Unit - Metric: *(Cubic Meter)*

Documentation: Record three dimensional sketches, measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Volumetric Measure (By Computation) - Measure length, width and depth, and compute volume.

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Spec. No.: 2577 (Cont)
Contract Items: Live Stakes
Concrete Armor Units (Specify Size)

Unit - U.S.: Each
Unit - Metric: *(Each)*

Documentation: Record physical count. For the Final, submit these records with proper reference on I.R.A. On small projects, concrete armor units will be accepted by the number of complete units (two individual halves) assembled and installed.

Method of Measurement: Unit - Physical count.

Spec. No.: 2577 (Cont)
Contract Items: Concrete Armor Units (Specify Size)

Unit - U.S.: S. Y.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute surface area covered by each size. The outermost extremity of the units shall be used in the measurement.

Spec. No.: 2580 (Spec 2000)
Contract Items: Temporary Lane Marking

Unit - U.S.: L.F. or Road Station
Unit - Metric: *(Meter)*

Documentation: Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: *Linear Feet (meter)* - Measure actual length of each line marked. Do not include the gap between the broken lines.
Road Station - Measure length in Road Stations of 100 feet from termini to termini.

Spec. No.:	2581
Contract Items:	Removable Preformed Plastic Pavement Marking
Unit - U.S.:	L. F.
Unit - Metric:	*(Meter)*
Documentation:	Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Feet *(meter)* - Measure actual length of each different width, type, etc., of pavement marking furnished, placed and removed as specified.

Broken line will be measured by the actual length of material used and will not include the gap between the broken lines.

Spec. No.:	2582
Contract Items:	Linear Markings _____inch (mm) width (1)(2)(3)
Unit - U.S.:	L. F.
Unit - Metric:	*(Meter)*
Documentation:	Record measurements. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Linear Feet *(meter)* - Measure actual length of each different width, type, etc., of pavement marking furnished and placed as specified.

Broken line will be measured by the actual length of material used and will not include the gap between the broken lines.

Note:
(1) Specify Material
(2) Specify Type of Line (Solid, Broken or Dotted)
(3) Specify Color

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Spec. No.:	2582
Contract Items:	Pavement Message (1) (2)

Unit - U.S.: Each
Unit - Metric: *Each*

Documentation: Record physical count. For the Final, submit these records with proper reference on I.R.A.

Method of Measurement: Unit - Physical count.

Note: (1) Specify Message
(2) Specify Material

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Spec. No.: 2582
Contract Items: Crosswalks (Specify Material)

Unit - U.S.: S.F.
Unit - Metric: *(Square Meter)*

Documentation: Record measurements and computations. For the Final, submit these records with proper reference on the I.R.A.

Method of Measurement: Area Computation - Measure and compute the area of the front face of wall, based on actual completed dimensions.

FORMS REQUIREMENTS

The following Mn/DOT forms required by section 5-591.420 are available on the Website @ http://www.dot.state.mn.us/const/tools/forms.html

Form 28233	Daily Accomplishment Report
Form 2137	Daily Equipment Labor Rental Record
Form 2158	Ready Mix Concrete Batch Ticket
Form 2141	Computation of Truck Box Capacities
Form 2210	Pile Driving Report
Form 2264	Test Pile Report
Form 17119	Inventory of Salvage Bridge Material
Form 21236	Daily Water Report
Form 21841	Bituminous Application Record
Form 2190	Earthwork Computations
Form 2460	Work Order for Minor Extra Work
Form 2134	Supplemental Agreement –Regular Form
Form 2134	Supplemental Agreement – Part “A”
Form 2134	Supplemental Agreement – Part “B”
Form 2460	Change Order Form
Form 21659	Summary of Daily Force Account
Form 2119	Change in Contract Construction Status

Control of Materials

Control of materials is a necessary and important part of every construction project. The intent is to assure that only quality (specification) materials are incorporated into the work.

Quality Assurance (QA)

BACKGROUND

The Code of Federal Regulations (23 CFR 637) states that State DOT's shall develop a Quality Assurance Program which will assure that the materials and workmanship incorporated into each Federal-aid highway construction project on the NHS are in conformity with the requirements of the approved plans and specifications, including approved changes. The program must meet the criteria in § 637.207 and be approved by the FHWA.

The Mn/DOT QA Program consists of planned and systematic actions necessary to provide confidence that a product or service provided by a highway construction contractor or a construction product vendor meets Mn/DOT's requirements for quality.

The QA Program consists of three parts:

1. Acceptance Program
2. Independent Assurance Program, and
3. Materials Certification.

Each of the three major parts of the Mn/DOT QA Program include several specific components as listed below:

Acceptance Program	Acceptance/Assurance/Verification Sampling and Testing Quality Control (QC) Testing (Certified Plants) Small Quantity Acceptance Schedule of Materials Control Qualified Laboratories (Central, District, and Field) AMRL Laboratory Accreditation Plant Monitoring Certified Plants Technician Certification Equipment Calibration Approved Products Pre-Cast Plant Inspection Dispute Resolution
IA	Independent Assurance Inspector (IAI) Evaluations and Reviews Schedule of IA Sampling and Testing Laboratory Companion Samples (from Schedule of Materials Control)

	Proficiency Samples (Round Robins)
Materials Certification	Project Materials Certification (Current Tech Memo) OM Annual Project Compliance Reviews State Aid Division Project Audits/Reviews

The following describes the process for the Materials Certification part of the QA Program.

DEFINITIONS

Acceptance Program All factors that comprise Mn/DOT's determination of the quality of products as specified in the contract requirements. These factors include verification sampling, testing, and inspection and may include results of QC sampling and testing.

AMRL AASHTO Materials Reference Laboratory.

Approved Products Products that can be accepted based upon a manufacturer's representation that a product complies with all contract requirements, usually identified by a product name. Common examples are concrete admixtures, joint sealers, raised pavement markers, and sign sheeting.

Certified Products Products that can be accepted based upon a manufacturer's certificate of compliance. Certified products are sometimes referred to as from "certified sources" or "approved manufacturers." Common examples are asphalt, cement, fly ash, paint, and seed.

Field sampling and testing Acceptance tests identified in the *Schedule of Materials Control* as "Field Tests," taken and performed by a Mn/DOT representative. Field tests are commonly run in the field or in a field laboratory, but may be run at any qualified laboratory.

Independent Assurance (IA) Program Activities that are an unbiased and independent evaluation of all the sampling and testing procedures used in the Acceptance Program. The program covers sampling procedures, testing procedures, and testing equipment, and is defined in the *Schedule of Independent Assurance Sampling and Testing.*

Laboratory testing or field companion testing Tests performed by a Mn/DOT District or central laboratory on a companion sample to the field test, as identified in the "Schedule of Materials Control." Testing is not to be performed by the same person and/or equipment as the field test.

Materials Certification A process that provides reasonable assurance that all aspects of the Acceptance Program have been satisfactorily completed and that the materials incorporated are in close conformance to the contract specifications.

OM The Office of Materials includes the Geotechnical Engineering Section, the Materials Engineering Section, and the Pavement Engineering Section. The Pavement Engineering Section contains the Bituminous and Concrete Units. The Geotechnical Engineering Section contains the

Grading and Base Unit. These units are traditionally referred to as the “specialty offices.”

Proficiency samples Homogeneous samples that are distributed and tested by two or more laboratories. The test results are compared to ensure that the laboratories are obtaining the same results. Commonly, two homogenous samples are created by splitting a larger sample and are called “companion samples.”

Quality assurance (QA) testing or quality control (QC) companion testing Testing performed by a Mn/DOT representative on companion samples to the contractor or vendor’s QC samples.

Quality control (QC) sampling and testing Testing performed by the contractor on samples taken by the contractor for process control which is used as a part of the acceptance decision as defined by the “Schedule of Materials Control.” Also known process control testing. A Mn/DOT representative is required to observe a minimum number of some types of QC samples and tests.

Qualified laboratories Laboratories that are capable as defined by appropriate Mn/DOT programs. As a minimum, each laboratory has a program for checking test equipment and the laboratory keeps records of calibration checks. Qualified sampling and testing personnel are used whenever performing acceptance tests for Mn/DOT or Federal-aid projects.

Qualified sampling and testing personnel Personnel who are certified by the Technical Certification Program for tests they perform.

Verification companion testing Testing performed by the contractor or vendor on a companion to Mn/DOT’s verification sample. These test results are required to be used in the contractor or vendor’s QC program.

Verification sampling and testing Sampling and testing which is performed by a Mn/DOT representative, excluding the contractor and vendor, on samples taken by a Mn/DOT representative independently of the QC samples and which is used as a part of the acceptance decision to validate the quality of the material which is being accepted based upon QC testing.

MATERIALS CERTIFICATION PROCESS

This process for Materials Certification applies to all Mn/DOT (including Mn/DOT consultants) construction and maintenance contract projects whether or not federal funding is involved. Projects administered by local agencies shall follow the process required by the State Aid Division.

Acceptance Program

The Acceptance Program is used to verify material quality as materials are incorporated into a project, accepted, and paid for.

Field Documentation

Document exceptions to the Acceptance Program requirements and corresponding resolutions in real-time.

Record exceptions and resolutions on form TP-02171-04 and/or document exceptions and resolutions by Supplemental Agreement, Change Order, or Backsheet Item. The Project Engineer will consult with and request input from the District Materials Engineer and the appropriate Specialty Offices. Both the Project Engineer and the District Materials Engineer sign form TP-02171-04 to indicate that they have had the opportunity to provide input. Specialty Offices provide input to form TP-02171-04 or provide separate documentation that allows the Project Engineer to complete the form.

Prior to the Project Engineer signing the Final Estimate and sending it to the Contractor for signature, form TP-02171-04 should be completed and all exceptions resolved. When the Engineer signs the Final Voucher to send to the Contractor the project is certified. Enter this date on the Final Voucher Date Tracking Form.

The Office of Materials will review the content of the form for its own information and to provide feedback to District personnel.

The following are EXCEPTIONS:

Failing Tests	Any failure of an acceptance test, (field test, QC test, or verification companion test.) List corrections or deducts resulting from failing tests as resolutions.
Missing Tests	Any missed test: field, QC, or verification test, including required observations of QC tests. Metro Inspection staff shortage = missing verification test.
Test Tolerance	Any tolerance failure between an acceptance test and the corresponding companion proficiency or IA sample test. Companion sample tests are performed between: • Field and Laboratory samples • QC and QA samples • Verification and verification companion samples • Field and IA samples • QC and IA samples • Plant observer's QA or verification samples and IA samples If an acceptance test passes and the companion proficiency or IA sample fails, but is within the allowed tolerance, there is no exception to be documented.
Non-Certified Testers	Any acceptance samples taken or tests performed by non-certified

or under-certified testers. This includes Contractor QC tests when used for acceptance and agency verification tests. Tests not performed in a qualified laboratory are also exceptions.

Other Exceptions — Material accepted from a non-approved source, missing certificates of compliance, etc.

Paving without a Mixture Design Report/Recommendation is an Exception.

Exception Clarifications — IA test fails and is out of tolerance is an Exception.

Individual test out of tolerance, but moving average within limits is an Exception for individual test out of tolerance.

Bituminous test results in the warning band (year 2000 and older specifications) is an Exception, reduce payment in accordance with specifications.

The following are Not Exceptions:

Low concrete cylinder strength. (Unless cylinder strength is specified on that project.)

Field QC test passes, lab QA test fails and the tests are within tolerance.

IA test fails and is within tolerance of a passing field test.

QA test does not meet JMF/broadband requirements, QC test meets requirements and the tests are within tolerance.

Out of tolerance test on Bituminous summary sheet, with a retest that is within tolerance.

Bituminous gradation tests outside the current Mixture Design Report/JMF but within the requested mix adjustment. Not an exception if the requested mix adjustment is approved. When the request is approved, it should be considered effective from the time it was made and noted on the daily summary sheet.

Missed IA tests. Not an exception that must be listed on the Materials Certification Exception summary Form. However, Mn/DOT must provide an Annual IA Report to the Federal Highway Administration that lists the number of missed IA tests. The District

Materials Engineer is responsible for tracking the number of missed IA tests and reporting that number annually to the Pavement Engineer for compilation into the Mn/DOT annual report to the FHWA. The latest version of the Exceptions Summary Form has check boxes to assist with the tracking of IA activities.

Resolutions are required for all exceptions recorded on form TP-02171-04. Resolutions can be brief, but must describe the action taken or the rationale for taking no action. Retain supporting documentation in the project file.

Examples of actions taken as resolutions may include

- deduction per specification applied, or
- $ per unit deduct applied, or
- mix change made and testing rate increased, or
- testing equipment recalibrated, test rerun and passed, or
- Area re-watered and re-compacted, test rerun and passed, etc.

Resolutions may also result in no actions having been taken; an acceptable resolution when accompanied by appropriate rationale.

- Substantial compliance, or
- in close conformity, or
- materials incorporated in-place performing satisfactory

can be used as resolutions in these situations. Use only for a minor test failure or the omission of a few out of many required tests. Include rationale for taking no action on the form.

All questions concerning the Material Certification Process should be directed to the appropriate specialty office in the Maplewood Central Lab or to your own District Materials Office.

Materials Certification Exception Summary

Materials Certification applies to the Acceptance Program activities only. The Project Engineer will verify that the Acceptance Program was complied with and that exceptions are appropriately resolved and documented in the project file. By signing the Materials Certification Exception Summary , the Project Engineer is certifying that all aspects of the Acceptance Program have been properly completed:

1. All materials incorporated into the project conformed with the Contract.
2. The required number of observations were made and/or samples taken, tested, and compared to companion sample test results (where applicable) in conformance with testing rates listed in the “Schedule of Materials Control” and project special provisions.
3. All Mn/DOT and Contractor project personnel performing acceptance testing were

certified at the appropriate level for the tests performed. All acceptance tests not performed by project personnel were performed by a qualified laboratory or by Mn/DOT central or plant inspection.

4. All acceptance samples taken and tested as a companion to an IA sample were within tolerance limits of the IA companion samples.
5. Any exceptions and resolutions to items 1-4 have been documented and appropriate corrective measures have been taken. Form TP-02171-04 has been completed.

Project Compliance Reviews

The Pavement and Geotechnical Engineering Sections of OM and by other specialty offices such as Agriculture, Materials/Metals, and Chemical may conduct Project Compliance Reviews (PCR). The Federal Single Audit is a separate process conducted independently by the Mn/DOT Auditor's office.

A committee from the Office of Materials will annually select projects from within various categories to review for compliance with the requirements of the Materials Certification process.

Results of Review, including irregularities and areas of outstanding performance will be reported back to the Project Engineer and District/Metro Materials Engineer. The Project Engineer, with the cooperation of the District/Metro Materials Engineer, will address, and if possible correct, all irregularities. The Assistant District/Metro Engineer will receive a copy of the District/Metro results and the Project Engineer's explanations.

The Pavement Engineer may delegate review responsibility to the District/Metro Materials Engineer and reduce or eliminate reviews performed by the Office of Materials if the Districts or Metro perform in-house review processes that meet the requirements of the Pavement Section for compliance reviews,

The Office of Materials will compile the results of the Project Compliance Reviews performed by the various specialty offices, and the audit results from the Mn/DOT Auditor's Office; and will summarize and evaluate the results for needed improvements to the QA Program.

Independent Assurance (IA)

The District/Metro Materials Engineer is responsible for making sure all IA activities are completed, tracked, and reported on the form. The District Materials Engineer is responsible for annually reporting the IA activities to the Mn/DOT Pavement Engineer independently of the Materials Certification process.

QUESTIONS

If you have questions concerning Materials Certification contact the Materials Office at (651) 366-5592.

MATERIALS CERTIFICATION EXCEPTIONS SUMMARY FORM TP-02171-04

02/23/05

MATERIALS CERTIFICATION EXCEPTIONS SUMMARY

S.P. No. 3708-13	Contract No. S04099	Project Desc. : BIT OVERLAY, AGGREGATE SHOULDERING, AND CULVERT LINERS	Const. Year :
TH:	District 08	Contractor: Contractor: Central Specialties, Inc	Project Location: LOCATED ON TH 40 FROM THE SOUTH DAKOTA STATE LINE TO TH 75, IN MADISON
Project Engineer/Supervisor:Stoutland, Jim		Federal No. STATE FUNDS	Page of

Materials and products used on project:

☒ Grading and Base ☐ Bituminous ☐ Concrete ☐ Aggregate ☐ Materials/Chemicals

Specialty	Exception Description	Resolution	Document Reference	Init.

Dist./Metro Materials Engineer Date Project Engineer Date

ATTACH SUMMARY REPORTS OF SUPPLEMENTAL AGREEMENTS, CHANGE ORDERS, and BACKSHEET ITEM EXCEPTIONS.

☒ No Independent Assurance Required

☐ Independent Assurance Required

☐ Independent Assurance Completed Without Exceptions

☐ Independent Assurance Completed With Exceptions

Information regarding Independent Assurance is available in the District I.A. or Project Engineer Files

Original: Retain in Project File

Copy: State Materials Testing Engineer - MS 645

Copy: Financial Operations Section - MS 215

Copy: District Materials Engineer

Copy: Office of Construction - MS 650

Minnesota Department of Transportation

Metro District – Materials
1500 W. County Road B-2
Roseville, Minnesota 55113

Office Telephone: (651) 234-7350
Fax: (651) 234-7358
Email: tim.sinclair@dot.state.mn.us
dave.vandeusen@dot.state.mn.us

To: All Construction Resident Engineers; Project Engineers; Project Supervisors; Project Personnel; Consultants

Date: 08/27/07

From: Dave Van Deusen
Metro District Materials Engineer
Waters Edge Bldg.
(651)234-7350

Tim Sinclair
Pavement Mgt. / IAI Supervisor
Waters Edge Bldg.
(651)234-7354

Subject: Materials Certification Process;

It has come to our attention that with the many new faces in Mn/DOT over the past few years, and with an increased use of Consultants in Project Administration, we need to clarify the Final Materials Certification process and the required supporting information needed to get approval. The goal here is to better help you understand the Materials Certification Exception Summary Form, and create a package for submittal that is simple and complete. This will also expedite the Exception Form through the certification process. This memo is meant to be a **quick summary guide** of the Manual's *detailed* process, and is **not** meant to replace it, please consult the Contract Administration Manual for in-depth explanations and Exception Clarifications. The website can be found at: http://www.dot.state.mn.us/const/tools/conadminmanual.html . We are still operating off the process defined in the Contract Administration Manual last updated April 15, 2005; under "Documentation of pay Item Quantities" (5-591.410).

This process for Materials Certification applies to all Mn/DOT (including Mn/DOT Consultants) Construction and Maintenance Contract projects, whether or not Federal–Aid funding is involved. Projects administered by local agencies shall follow the process required by the State Aid Division, which has elected to follow the Standard Certification process in Federal-Aid projects as explained above, unless the project is funded by **100%** state-aid or local funds (no Federal aid), in which case the IAST schedule does not apply. Please contact The Independent Assurance office or State Aid Office if you are unsure if the project status is subject to State Aid requirements.

BACKGROUND;

Federal requirement (23 CFR 637) states that for all Federal-Aid highway projects, State DOT's have a Quality Assurance/Acceptance Program in place to insure compliance. The Mn/DOT Quality Assurance Program consists of all those planned and systematic actions necessary to provide confidence that the product or service provided by a highway construction contractor, personnel, or construction product vendor meets Mn/DOT's requirements for quality.

The Quality Assurance Program consists of three parts:

1. **Acceptance Program** (QC/QA program, Technician, lab, Plant, and Equipment Certifications, approved products, Schedule of Materials Control).
2. **Independent Assurance Program** (Inspector evaluations and reviews, calibrations, Laboratory companion and proficiency samples, project Tech help).
3. **Materials Certification** (Project Materials Certification-current tech memo, Maplewood Office of Materials Annual Project Compliance Reviews, State Aid Project Audits/Reviews).

MATERIALS CERTIFICATION PROCESS

Field Documentation

The Acceptance Program is used to verify material quality as materials are incorporated into a project, accepted, and paid for. Whenever exceptions to the Acceptance Program requirements occur, those exceptions and corresponding resolutions **must** be documented.

During the course of the project, and prior to or at the time of Final Acceptance of Work (Mn/DOT Spec 1516.2), The Project Engineer will record exceptions and resolutions on form TP-02171-04 (Materials Certification Exception Summary) and/or document exceptions and resolutions by Supplemental Agreement, Change Order, or Back sheet Items. The Project Engineer will consult with and request input from the appropriate Specialty Offices, or District Materials Engineer. Both the Project Engineer and District Materials Engineer sign form TP-02171-04 to indicate that they have had the *opportunity* to review the project during construction, and provide input. The Specialty Offices may provide direct input to form TP-02171-04, or they will provide **separate documentation** (Metro Inspection Fax Letters) that allows the Project Engineer to complete the form. At the time of final acceptance of work, form TP-02171-04 **must** be completed and **all** exceptions resolved.

If form TP-02171-04 is not submitted correctly, or if all exceptions and resolutions have not been accounted for, The Office of Construction and Contract Administration will delay submittal of the Final Payment Voucher and may not certify the Project.

All exceptions to the Acceptance Program requirements must be recorded on form TP-02171-04, **or listed on the Summary Report of supplemental agreements, change orders, and back sheet items *attached* to form** TP-02171-04.

The following are job **EXCEPTIONS:**

Failing Tests Any failure of an acceptance test- meaning a field test, quality control test, or verification companion test. Corrections or deductions resulting from failing tests **must** be listed as resolutions of exceptions.

Missing Tests Any missed field test, quality control test, or verification test. Tests include required observations of quality control tests.

NEW: Metro Inspection Staff shortage = Missing verification test.

Test Tolerance Any tolerance failure between an acceptance test and the corresponding companion proficiency or Independent Assurance sample test. Companion sample tests are performed between:

- Field and Laboratory samples
- Quality control and Quality assurance samples
- Verification and verification companion samples
- Field and Independent Assurance samples
- Quality control and Independent Assurance samples
- Plant monitor's quality assurance or verification samples and IA samples

Note; when an acceptance test passes and the companion proficiency or Independent Assurance sample fails, but is *within* the allowed tolerance, there is **no** exception that has to be documented.

Non-Certified Testers Any acceptance samples taken or tests performed by non-certified or

under-certified testers. This includes contractor quality control tests when used for acceptance and Agency verification tests. Tests not performed in a **qualified** (certified) laboratory or field testing lab.

Other Exceptions Material accepted from a non-approved source, missing Certificates of Compliance, etc. Paving without a approved Mix Design Report or Recommendation = Exception.
Independent Assurance tests fails **and** is out of tolerance = Exception
Mix or paving out of a Non-Certified plant =Exception

The following are **NOT Exceptions**:

- Field QC test passes, lab QA test fails, and the tests are **within** field/lab tolerance.
- Independent Assurance test fails, but is *within* tolerance of the passing field test.
- Low concrete cylinder strength break. This is not an exception unless cylinder strength is specified on that project. Any pattern of bad breaks should send up a red flag to be investigated.

This is a Partial list of the most common non-exceptions; consult The Contract Administration Manual and/or the Spec book for a complete list.

RESOLUTIONS:

Resolutions are required for **all** exceptions recorded on form TP-02171-04. Resolutions can be brief, but must describe the action taken or the rationale for taking no action. Supporting documentation should be contained in the file and list the document reference in the appropriate column. Examples of actions taken as resolutions may include "standard deduction applied", or "$ per unit deducted applied", or "mix rate changed and testing rate increased", or "testing equipment recalibrated, test rerun and passed", or "area re-watered and re-compacted, test rerun and passed" etc.

Resolutions may also result in no actions having been taken. This is an acceptable resolution when accompanied by appropriate rationale. Often, "substantial compliance" or "Materials incorporated in-place performing satisfactory", or "in close conformity" will be used for resolutions in these situations. Generally these resolutions should *only* be used for a **minor** test failure or the omission of a **few** out of many required tests. Rationale for taking no action **must** be included on the form.

Final Materials Certification Summary form (TP-02171-04)

It is the responsibility of the Project Engineer to verify that all aspects of the Acceptance Program were complied with and that any exceptions are appropriately resolved, and corrective measures and/or monetary deductions have been taken and duly documented on the form. By signing the Materials Certification Summary form in the lower **right** hand part of the sheet, the Project Engineer is certifying that all aspects of the project have been properly completed.

The District/Metro Materials Engineer is responsible for making sure all Independent Assurance activities are completed, tracked, and reported on the form in the lower **left** hand corner. The District/Metro Materials Engineer

(IAI) is responsible for checking the appropriate box in the lower left hand corner of the form, **not** the Project Engineer. The Independent Assurance check is reported annually and is *separate* from the Materials Certification Process. It is an unbiased and independent evaluation of all the sampling and testing procedures used in the Acceptance Program, and aids the Project Engineer in assuring overall Project compliance.

The following paperwork MUST be attached and included in the overall Packet to expedite form TP-02171-04 **through the process:** Any errors, missing faxes, rosters, back sheet items, Change orders, etc. will delay the process by having to return the form back to the Project Engineer for the required paperwork and/or corrections.

- Materials Certification form (TP-02171-04) completely filled out, all Material Specialty items used on Project listed, and any Exception Descriptions and subsequent Resolutions correctly accounted for.
- Materials Certification form (TP-02171-04) **Signed in ink** by the Project Engineer in the lower right hand corner. (Do not check boxes in the lower left hand of the form).
- Project Technician Roster listing **ONLY** the technicians/testers/samplers that actually did physical testing on the project (Density, DCP, Gradations, Air, Slump Cylinders, etc.) Do not list visual inspectors or personnel involved in checking finals/office personnel.
- If *Metro Inspection* was used on the project, include the Faxes from Concrete (Dick Kasa) or Bituminous (Deb Evans). The Fax from Metro Inspection office confirms they have reviewed their files for any Materials exceptions (Plant & Lab-they could have additional Exceptions you are not aware of.) on the listed projects, have consulted the proper Specialty office and have recommended the appropriate Resolution if any. If another Agency or Consultant lab did the QA work, include test results and their review/report/ and recommendation of the project and any action that should be taken.
- Any Supplemental Agreements, Change Orders, or Back Sheet Item Exceptions.

With all the required information included or attached, the Exception Summary form then begins the process for final Certification. Independent Assurance will review their Project records and lab reports, and check sample IAI/ Field/Lab tolerances. If an IAI missing, failing, uncertified, or test tolerance Exception is found; it, along with the lab reports, will be sent back to the Project Engineer to be included on the Exception Form, along with the suitable Resolution from the Engineer.

If after reviewing the Exception Summary form all is found correct, IAI then checks the appropriate box in the lower left hand corner of the form, initials and dates it, and then sends it on the District/Metro Materials Engineer. Who after review, either signs and returns the form/packet to the Project Engineer for final processing, or can elect to return it unsigned for incomplete paperwork or improper/missing Resolutions to Exceptions.

Hopefully this Memo will help assist you through the sometimes confusing process of Materials Certification, and will help to speed the procedure along correctly. Please try to remember the purpose of this method is to provide *reasonable* assurance that all aspects of the Acceptance program have been satisfactorily completed and that the materials incorporated are in close conformance to the Contract Specifications.

If you have any questions to this Memo, please feel free to contact either Dave VanDeusen, Metro District Materials Engineer @ (651) 234-7350, or Tim Sinclair Pavement Management/IAI @ (651) 234-7354

FINAL ESTIMATE AND PAYMENT PROCESS

The District/Metro and State Aid Offices are responsible for creating and fully executing the Final Voucher for Payment and Certificate of Final Acceptance.

It is not necessary to make a partial payment estimate prior to producing the Final Voucher unless the amount due the Contractor prior to Final exceeds $5000.00.

Give priority to final Vouchers that result in a Credit due the State.

The Engineer should pay the Contractor the full amount due for all acceptable work at the time of completion of all construction required on the project, taking into account credit and incentive payments.

- This reduces the possibility of making interest payments for funds due at the time of final payment.
- The Contractor is entitled to payment of interest on all retained funds determined to be due from the date "the work provided for in the Contract has in all things been completed", unless the final estimate for the work is made within 90 days after the Contractor has so completed the work as per Minnesota Statute § 161.322.
- The 90-day requirement does not apply to contracts over two million dollars if the contract provides specifically for a different period of time in which to make such final estimate.

PRODUCING THE FINAL VOUCHER PACKAGE

Use the field computer application to print all the documents that are necessary to produce the Final Voucher package sent to the Contractor for signature.

1. The Complete Final Voucher
2. The Certificate of Final Contract Acceptance (Sample **A** at end of Section)
3. The Contract Requirements Letter (Sample **B** at end of Section)
4. The Credit Letter (If Applicable – This letter will only print out when Contractor owes money to the State on Final Voucher) (Sample **C** at end of Section)

PROCEDURE FOR ASSEMBLING THE FINAL VOUCHER PACKAGE THAT IS SENT TO THE CONTRACTOR VIA CERTIFIED MAIL

All of the documents that go into the **To Contractor** package are listed in **bold**. All other required documents and their proper distribution are listed in *italics.*

(a) **Two copies of the Final Voucher with Certificate of Final Contract Acceptance signed by the Engineer and stapled to front of each Voucher. Both documents require original signatures.**

One document for the Contractor to sign and retain for his files.
One document that the Contractor will sign and return to the Engineer.

(b) **One copy of the Contract Requirements Letter signed by the Engineer, which the Contractor will retain in his files.**

Keep one copy of Requirements Letter in Engineer's Office files.

***Send one copy of Requirements letter to OCIC stapled to one copy of the face of the Final Voucher. (Send to OCIC at the same time the Certified Mail package goes to Contractor.)*

(c) **One copy of *Credit Letter (if applicable) signed by the Engineer which the Contractor will retain in his files.** (*Generate the Credit Letter only when the Contractor owes the State more than $5.00 on the Final Voucher; *Special Note: Mn/DOT Finance will not bill a Contractor for less than $5.00. See Procedures to use when there is a Credit Due on the Final Voucher.)*

Keep one copy of the Credit Letter in the Engineer's Office files.

***Send two copies of the Credit Letter to the OCIC stapled to two copies of the face of the Final Voucher. (Send to OCIC in the same envelope as the Contract Requirements Letter above.)*

Once the items in (a) through (c) are assembled, send the Final package to the Contractor via Certified Mail. Enter the date this package is mailed, on the Final Voucher Date Tracking Form. (See Sample **D** at the end of this section.)

**Scanned versions of the Requirements letter and Credit letter may be sent to OCIC using CPG@dot.state.mn.us Include SP#, Contract#, and type of document in subject line.

Final Voucher Date Tracking Form.

Generate this form with the FieldOps computer application.

Chronologically track the progress of the Final Voucher by entering all of the individual dates requested on the form. This allows the Engineer to adequately monitor the 90 day time period provided by MN Statute § 161.34.

All dates shown on the Final Voucher Date Tracking Form are critical and must be entered prior to following the instructions listed below under "Submittal of Final Voucher Package to Asst. District Engineer for Signature".

MONITOR PROGRESS / STATUS OF THE FINAL PACKAGE AFTER IT IS MAILED TO THE CONTRACTOR.

ADMINISTRATION OF 90-DAY CLOCK

In accordance with MN Statute § 161.34 the Contractor is allowed 90 days including Saturdays, Sundays and Holidays (herein referred to as the 90 day clock) to commence action against the State.

- Record the "Date of Delivery" shown on the certified mail stub returned to the Engineer in Box (A) of the Final Voucher Date Tracking Form; this date starts the 90-day clock, counting the day following the "Date of Delivery" as the first day.
- Compute the expiration date of the 90-day clock; enter this date in Box (B) of the Final Voucher Date Tracking Form.

Prior to the expiration of the 90-day clock the Contractor must:

1. Notify the Engineer of what he considers to be incorrect final payments.

2. Take legal action against the State in the event of an un-resolvable dispute over what he considers to be incorrect final payment(s).

3. If in agreement with the final payments, sign and return the Final Voucher to the Engineer.

Final Voucher Recall / Stopping the 90 day clock

The only way to prevent the 90-day clock from expiring is to request OCIC to send a Formal Final Voucher Recall Letter to the Contractor. As Contract Holder, only OCIC has the authority to recall a final payment voucher. The Engineer will direct all Final voucher recalls to the contact person in OCIC. (The current contact person is Jennie Carlson @ 651-366-4207).

Cause for Final Voucher Recall

The following circumstances would be cause for requesting OCIC to recall the final voucher:

(A) In accordance with No.1 above, the Contractor notifies the Engineer and states his reason(s) for requesting a correction to final payment The Engineer will review the Contractor's request and will either agree or disagree that such correction is valid.

- If the Engineer agrees that the Contractor's request is valid, the Engineer will immediately contact OCIC to recall the final voucher thus stopping the 90 day clock. The Engineer will create a new Final Voucher that reflects the appropriate corrections and sends it to the Contractor via certified mail. A new 90 day clock is started.

- If the Engineer disagrees with the Contractor's request, s/he will immediately contact the Contractor and express a denial of the request for final payment correction. The Final Voucher will not be recalled and the 90 day clock keeps moving on toward expiration unless the Contractor takes legal action. Once expired, the 90 Day clock cannot be restarted.

(B) In accordance with No. (2), above, if the Contractor opts to take legal action prior to the expiration of the 90 day clock it automatically stops the 90 day clock. OCIC will recall the Final Voucher and make necessary corrections as determined by court decision or other legal resolve.

(C) In accordance with No. (3), above, if no action is taken by the Contractor to challenge final payment and the 90 day clock expires, the Final Voucher stands "as - is" and no change can be made. The Engineer will contact the Contractor and inform him that he must submit the signed Final Voucher.

Other Special Contract Requirements – Contractor's responsibility

The Contractor must also submit the following to the Engineer:

- Minnesota Department of Revenue Form IC-134 (Tax Withholding Affidavit for Contractors.) (Sample "F" shown at end of this section) – Only the Prime Contractor's IC-134 must be submitted with the Final.

    - As per Minnesota Statutes § 290.92 & 270C-66 and Standard Specification 1908, the IC-134 must be certified by the Minnesota Department of Revenue before the State can make final payment for the work performed on a contract.

- Review the IC-134 to ensure the "Month/Year Work Ended" shown on the form covers the time period up to the completion of actual work on the Contract. If it does not, request a new IC-134 from the Contractor that reflects the proper dates.

- Total Payment Affidavit (on projects with Federal Funding) Pursuant to Mn/DOT Standard Specifications for Construction, Section 1908, the DBE Total Payment Affidavit shall be executed by the Prime Contractor after all work has been performed by a DBE.

- Contractor Payment form (on projects with Federal Funding) All Contractors making payments to Contractors/Subcontractors/Suppliers/Service Providers, regardless of their tier or DBE status, are required to complete and submit this form to the Mn/DOT Office of Civil Rights (OCR), each time payments are made to sub-contractors until final payment is made.

- Credit Payment (if applicable)

Procedures to use when there is a Credit Due on the Final Voucher

If there is a Final Voucher with a Credit due the State, the payment of the Credit by the Contractor becomes an additional Contract requirement that must be met by the Contractor.

Retain the Contractor-signed copy of the Final voucher until the Credit is paid and released by OCIC. Do not send the Final to the Asst. District Engineer for signature until the hold is released. Record the date the release date of the credit hold in box J on the Final Date Tracking form.

Mn/DOT Finance will not bill a Contractor for less than $5.00. If you are in this situation, do not check the credit letter box in the computer application when generating the Requirements Letter. Do not send Credit Letter to Contractor in Final Package.

Failure to Submit Special Contract Requirements in a Timely Manner

If the Contractor does not submit the special Contract requirements within 90 days after receipt of the Final Estimate, consequences to the Contractor *may* include placement on the Reject Bid list by OCIC. If this occurs, contact the Contract Administration Supervisor in OCIC. Only OCIC can place a Contractor on the reject bid list. Specification 1906 allows for withholding partial payments on other Contracts the Contractor currently has until the requirements have been satisfied.

Other Special Contract Requirements – Engineer's responsibility

It is the Engineer's responsibility to submit other Special Contract Requirements included on the Final Voucher Date Tracking Form to OCIC:

- Materials Certification Exception Form (see section 5-591.411 of this manual)
- Final Project Inspection Report from the OCIC Project Review Engineer (or the Area FHWA Construction Engineer for FFO projects).
- Overrun and Underrun Report (only required on Contracts designated as FAP, FFO, SAFO, or MAP).

Submittal of Final Voucher Package to Asst. District Engineer for Signature

Ensure boxes (**A**) through (**L**) shown on the Final Voucher Date Tracking Form are addressed with either a date entered or an N.A. for non-applicable.

After all Contract Requirements have been met and addressed, submit one copy of the completed Final Date Tracking Form attached to the original signature Final Voucher and Certificate of Final Contract Acceptance to the Asst. District Engineer for signature.

Asst. District Engineers for Construction: Do not sign the Certificate of Final Contract Acceptance unless all dates required on the Final Voucher Date Tracking Form are addressed.

After the Asst. District Engineer signs the Final Voucher he/she will return the fully executed original signature signed Final Voucher and Certificate of Final Contract Acceptance with the Final Voucher Date Tracking Form attached to the Project Engineer.

Make two additional complete copies of the original signature Final Voucher and Certificate of Final Contract Acceptance.

- Retain one copy in the Engineer's file.
- Submit the original signature Final Voucher with one copy of the Final Voucher Date tracking Form attached and one copy with the Final package to the OCIC.

Assemble the entire Final packet and supporting documentation for submittal to OCIC. See "FINAL DOCUMENTATION SUBMITTAL / ASSEMBLY OF FINAL PACKAGE" below.

When the Final packet is complete, send it to OCIC, who will immediately pass the fully executed Final "as–is" to the Mn/DOT Office of Finance where final payment will be made.

LABOR HOLDS

The Mn/DOT Labor Compliance Unit (LCU) shall notify the Contracting Authority (CA) electronically or in writing upon opening a case file for a project/contract. Concerning contracts administered by Mn/DOT, this action will electronically initiate one or more holds on the contract. The hold(s) shall remain active until the issue is resolved.

Contact a professional in the LCU to ensure that no holds exist on the contract before sending the final contract voucher to the Asst. District Engineer for signature. If a hold exists, the PE shall retain the final voucher until such time the LCU can ensure that the hold has been released. Upon the release of a hold, the PE shall enter the date in Box "H" of the Final Voucher Date Tracking Form. A description of a labor hold can be viewed in CMS under the HOLD tab.

All labor holds will be resolved before the Engineer submits the Final to the Asst. District Engineer for signature. When Finals signed by the contractor are received, they will be held in the Engineer's office until hold is released by the Mn/DOT Labor Investigation Unit in Central Office.

Regarding federal-aid contracts, the CA shall review and complete the Federal Aid Contracts Check List to ensure that all contractors have demonstrated compliance with the contract labor provisions.

FINAL DOCUMENTATION SUBMITTAL / ASSEMBLY OF FINAL PACKAGE

Complete the Final Documentation Submittal Form generated by the field computer application. Lists the documents necessary for the creation of the Finals packet submitted to OCIC for payment**.** The following items are to be included with every Finals packet submitted:

1) *Project Personnel Roster* – Include names, signatures, initials and working titles (Examples: Scale person, Street Checker, Various Inspectors and Office persons) of all Mn/DOT personnel involved in the quantity documentation process for the Final being submitted.

2) *Final Voucher* - Voucher with all finalized pay quantities and Certificate of Final Acceptance signed by the Engineer, Contractor, and Asst. District Engineer.

3) Final Voucher Date Tracking Form – Used to monitor the progress of each Final Voucher from the time the Engineer sends it out to the Contractor, until it is signed by the Asst. District Engineer and submitted to C.O. for payment.

4) *Overrun and Underrun Report* – Mandatory on all federally funded Contracts designated **FAP, MAP, FFO, or SAFO.** If District Construction Management only requires for the O/U report, the report would not need to be submitted with the Final

records. The O/U report shall contain the following:

a) An explanation of the overruns / underruns of Major Contract Items which have varied in excess of 25% of the original contract quantity. (Note: Major Contract Item is an item that has a dollar value that exceeds both 5% of the original contract value and $10,000.00.

b) A list of all Change Orders and a brief description of intent for each along with proper sequence numbers. (Example: this Contract has 7 Change Orders # 1 through 4 and 4A through 6. Change Order #1 provides for a change in the method of measurement for item 2105.503 Common Excavation) etc.

c) A list of all Work Orders for Minor Extra Work along with proper sequence numbers. No further explanation is required. (Example: This Contract has 12 Work Orders for Minor Extra Work numbered 1-12)

If there are no Major Contract Items (as defined above), or if none of the Major Contract Items varies more than plus or minus 25%, an Overrun / Underrun report will still be required. In this case a simplified version of the O/U report will contain a positive statement:

- "There were no significant overruns or underruns of Major Contract Items on this Contract"
- "This Contract contained no Major Contract Items".

In addition, this simplified version of the O/U report will continue to require a listing of all Change Orders and Work Orders for Minor Extra Work as shown in (b) and (c) above.

5) *Final Backup Disk (CD)* - The Final Backup Diskette:
   - Creates a historical record of the Contract.
   - Makes it unnecessary to print IRAs for the Final Packet.
   - Provides all necessary data required by OCIC for a Field Final Review.

6) Copies of Plan Sheet(s) of Estimated Quantities (including bridges) – Identifies any (P) Plan Quantity pay items included in the Contract.

ASSEMBLY OF RECORDS TO BE SUBMITTED TO THE OFFICE OF CONSTRUCTION IN THE FINALS PACKAGE

Every Final submitted to OCIC will include, among other things, the following 3 files in separate envelopes or other enclosed type files.

1) Miscellaneous File - will include in order:

- Computer Final Backup Disk
- One copy of the Final Documentation Submittal Form
- One copy of the Project Personnel Roster
- One copy of the Overrun/Underrun Report (FAP, MAP, FFO, or SAFO projects)
- One copy of each Statement of Estimated Quantities Plan Sheet(s)
- All Change Orders (If any)
- All Work Orders (if any)

2) Special Contract Requirements File - will include in order:

- One copy of the Final Voucher Date Tracking Form with Certified mail tags
- Two Final Vouchers with Certificate of Final Contract Acceptance; one with original signatures.
- One copy of the Minnesota State Withholding Tax Form IC-134; (Only Prime Contractor copy is required with Final records; Subcontractors IC-134 can remain in Engineers files.)
- One copy of the Final Inspection Report by Construction Standards Engineer. (District State Aid Engineer or designee for State Aid projects.)
- One Material Certification Exceptions Summary Form TP-02171-04. (Not required on Building Removal projects.)
- One copy of the signed Final Contract Time Certification Form with Final Contract Date Log stapled to back of form.

3) Final Contract Time File – will include:

- All Weekly Construction Diary/Working Day Statements.
- All Change in Construction Status Reports.
- All Time Extension Memos
- All Revision of Working Day Memos.

The three files listed above are pre-defined and do not need to be listed again on the Final Documentation Submittal Form.

OTHER RECORDS TO BE SUBMITTED WITH FINAL

Any document referenced in the “Final Documentation Location” field of the Item Record Account must also be submitted with the Finals Packet. This includes any of the specific Mn/DOT Forms used as documentation. All Books; Booklets, Envelopes, Folders etc. submitted as supporting documentation must be properly identified on their front covers as to S.P. Number and Contract Number.

- Each separate document or page (except for a factory bound book – example: diary book) must be identified as to S.P. or Contract Number and Pay Item Identification.
- All entries must be signed or initialed by the person making the entry.
- If measurements are made by a person or persons other than the person making the entry, each party must be identified.
- (If a pay item contained in any document has the S.P. or Contract Number and the Item Identification on the first page for that item, then each additional page for that item is acceptable with the S.P. Number, document (A-1, B-1 etc.) and page number. Initialing would only be required on the last page for each item under these circumstances).
- Cross-section rolls that are not computer generated must be accompanied by both original and final survey notes.
- Volume computation can be submitted either directly on the cross-section rolls or on Mn/DOT form 2190.
- No records are required to be submitted when using the digital surface model method or when computer generated yardage computations do not incorporate actual field “Shots” (and subsequent reductions) to arrive at a pay quantity.
- When computer generated cross–sections are used the “Document Location” or “Remarks” on the finalized IRA for the pay item involved must state “Computer Generated Yardage” or similar statement.
- If calculations are required to arrive at a pay quantity, someone other than the one making the original calculation must check each calculation. The person making such checks will initial all math checks. Exception: Simple “one line” calculations entered directly on the IRA will not require checking by someone other than the person making the entry. (Examples: 12 Ft. x 11Ft = 132 Sq. Ft.; or 5 pails of sealer @ 50lbs. each = 250 lbs. – 30lbs. waste = 220 lbs. used.)
- For measurements taken with a GPS Rover, retain field shots/files, save to CD/DVD and submit with final. Data must be defined in a manner that would allow for "reconstruction" of project documented by said data. When Rover GPS/Microstation generated quantities are used, the "Documentation location" or "Remarks" on the finalized IRA for the pay item involved must state "Computer Generated yardage" or similar statement.

BRIDGE REPORTING REQUIREMENTS

Mn/DOT Form 17151 Vertical And Horizontal Bridge Clearance Report - The Engineer shall notify the District Permit Office by filing form 17151. A copy of all reports shall be submitted to the Mn/DOT Bridge Office (MS 610) ATTN: Bridge Management Engineer. See Sample G. It is not necessary to submit form 17151 to OCIC with the Final records.

Bridge As–Built Plan Sheet - Submit a copy of the As-Built Plan Sheet to the Bridge Office ATTN: Regional Bridge Engineer (MS 610). It is not necessary to submit this Plan sheet with the Final package sent to OCIC.

Preliminary Assessment of Final (PAF) Completed in Field

Upon receiving a completed Field Final, OCIC will perform a PAF. A copy of this assessment will be returned to inform the Engineer of any glaring errors that have occurred in the Field Final process. Informational, and non-corrective in nature, the sole aim of the PAF is to prevent repeating the same errors in future Field Finals.

Post - payment field final review performed by OCIC

In order to provide an independent review of Field Final project records, OCIC will select a "pool" of passed for payment Finals. This pool will consist of a representative sample of all projects submitted to OCIC from each District / Metro Resident Office. Each of the Finals in the pool will receive a non-corrective detailed review of the project records. When completed, a copy of the findings from each OCIC review will be given to the Engineer for his/her review, in order to assist in the preparation of future Field Finals.

STORING OF FINAL RECORDS

The Office of Construction will ship all final records to the State Record Center where they will be retained in storage for the Record Retention Period. All records will be stored for a period 7 years after the "Past for Payment" date. OCIC will enter a *"Date to Destroy* "records in the Contract Management System.

All records about bridges shall be preserved until further notice, regardless of record retention schedules.

STATE OF MINNESOTA – DEPARTMENT OF TRANSPORTATION
CERTIFICATE OF FINAL CONTRACT ACCEPTANCE

LOW S.P. NO. 3503-12 FINAL VOUCHER NO. 7 CONTRACT NO. S06075

This is to certify that to the best of my knowledge, the items of work shown in the Final Voucher herein have been actually furnished in accordance with the Plans and Specifications.

Dated _____ Signature _____ Project Engineer

The undersigned Contractor hereby certifies that the work described has been performed in accordance with the terms of the Contract, and agrees that the Final Value of Work Certified on this Contract is $1,342,410.76 and agrees to the amount of $-3.46 as Final Payment on this Contract in accordance with this Final Voucher.

Contractor NORTHERN PAVING INC By _____

And _____ And _____

State of Minnesota, County of _____

On This_____ Day_____,_____, Before me appeared_____To me known to

(Individual Acknowledgment)

be the person who executed the foregoing Acceptance and Acknowledged that he/she executed the same as_____ free to act and deed

(Corporate Acknowledgment)

_____And_____,to me personally known, who, being each by me duly sworn, each did say that they are respectively the_____ and_____ of the _____Corporation named in the foregoing instrument, and that the seal affixed to said instrument is the Corporate Seal of said Corporation, and the said instrument was signed and sealed in behalf of said Corporation by authority of it's _____and said_____and _____ acknowledged said instrument to be the free act and deed of said Corporation.

Notorial Seal My Commission as Notary Public in_____County Expires_____ Signature_____

I hereby certify that a Final Examination has been made of the noted Contract, that the Contract has been completed, that the entire amount of Work Shown in this Final Voucher has been performed and the Total Value of the Work Performed in accordance with, the terms of the Contract is as shown in this Final Voucher.

This Contract is hereby accepted in accordance with the Specification 1516. Final acceptance of the Contract will be effective upon full Execution, by the Contractor and the Department, of this Certificate of Final Acceptance.

Dated_____ Signature_____ District Engineer

SAMPLE “A”

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

RE : Contractor Requirements
S.P. No. : 3503-12
Contract No. : S06075
Location : TH 11, FROM RR TRACKS IN KARLSTAD TO RR TRACKS IN GREENBUSH

Attention : NORTHERN PAVING INC

Two copies of the Final Voucher and Certificate of Final Contract Acceptance are enclosed for your review and approval. The certificate requires the signature of an authorized official of your firm on this contract, and notarization.

The date entered for receipt of this package via certified mail is the date that begins the ninety day statutory deadline (MN Statute § 161.34) for initiating claims against the State arising out of the Contract.

Final Acceptance of this Contract and Final Payment cannot be approved until all Contract Requirements have been satisfied.

A signed copy of the Final Voucher

IC 134 Withholding Tax

Failure to submit the Contract Requirements before expiration of the ninety day period may result in the Department rejecting any future bids you may make per MN Statute § 161.32 Subd.1d. In addition, under the provisions of Standard Specification 1906, the Department may withhold payments on other Contracts you currently have until the requirements have been satisfied.

If a Credit Payment is due, you will receive a separate letter and invoice from the Department's Accounts Receivable Office. Please remit payment in accordance with the invoice.

Retain one copy of the Final for your records. Sign and return the other copy to:

MnDOT Construction Office

CTU Place

Nowthen, Mn 55303

A copy of the Certificate of Final Contract Acceptance will be provided to you and your Surety subsequent to full execution.

Sincerely,

_____

Jack Bauer

Project Engineer

cc: Engineer File
Office of Construction and Innovative Contracting

SAMPLE “B”

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION **Credit Letter**

NORTHERN PAVING INC
102 W 5TH ST
P O BOX 708
CROOKSTON M 56716

RE: S.P. No. 3503-12
Contract No. S06075
Location TH 11, FROM RR TRACKS IN KARLSTAD TO RR TRACKS IN

Attention: NORTHERN PAVING INC

This Final provides for a Credit Payment of -3.46

Subsequent to your review and approval of the Final, please submit this payment in accordance with the invoice you will receive, under a separate transmittal, from the Mn/DOT Office of Finance. As explained in the Requirements letter accompanying this Final, this Payment must be made within 90 days after you receive this Final.

Sincerely,

_____

Jack Bauer
Project Engineer
cc: Engineer File
Office of Construction & Innovative Contracting (2)

Note: Do not generate this letter when credit is less than $5.00. Finance will not process. Do not include credit on Requirements Letter if less than $5.00.

SAMPLE “C”

Final Voucher Date Tracking Form

District Engineer: Do not sign the attached Final Voucher Certificate of Final Contract Acceptance unless all date boxes are completed with a date or marked N/A. This will serve as your assurance that MN Statutes § 161.34 and 161.32 have been observed by the Project Engineer and that all Special Contract Requirements have been met. Once you have signed the Certificate of Final Contract Acceptance, no changes can be made to this Contract.

Project Engineer: Please refer to the Contract Administration Manual section 5-591.370 prior to completeing this form.

S.P. Number: 3503-12 Office Manager: Chloe O'Brian

Telephone: 666-2626

Date Certificate of Final Acceptance signed by Project Engineer and sent to Contractor via Certified Mail.	
Date Final Received by Contractor ("Date of Delivery" shown on Cert. Mail Green Card, or Electronic Tracking Notice)	(A)
Date Due Back from Contractor: (B) = (A) + 90 Calendar Days (Include Saturdays, Sundays and Holidays)	(B)
Date Signed Final Received in Engineer's Office from Contractor	

Special Final Requirements – Enter Dates items Received from Contractor or Completed by Engineer

Contractor IC-134 Tax Withholding	Mat'l Cert. Exception Summary	Final Inspection by Const. Stand. Eng.	Labor Holds Released	Credit Hold Released	O/U Letter	Contractor Total Payment Form	Contractor Payment Affidavit
(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)

Before Submitting this final to the District Engineer for Signature, all above dates must be entered. All dates that do not apply must be marked N/A (Not Applicable).

If all boxes are not filled in, Final must be held in District Office until all issues are resolved.

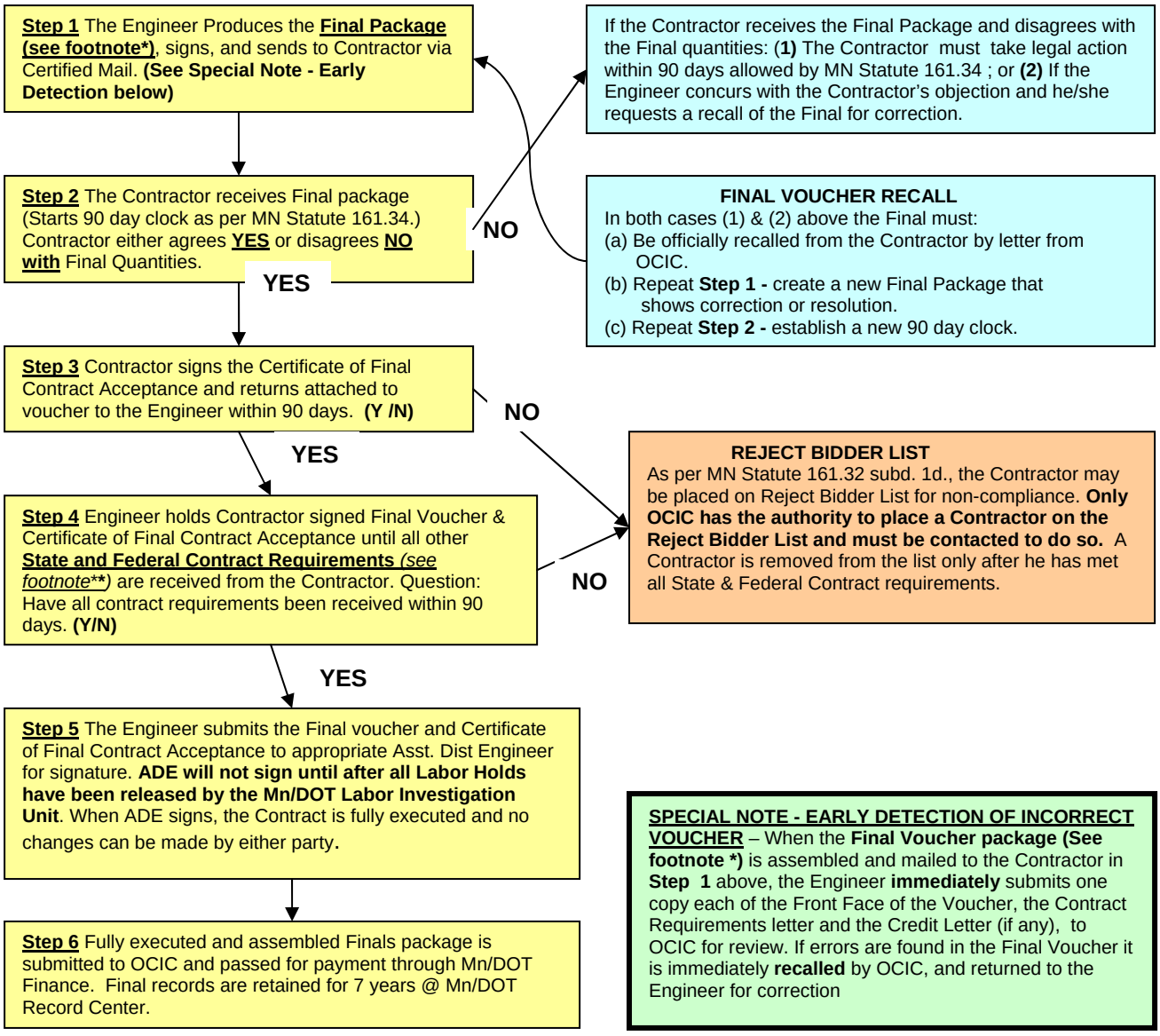
Special notes:
Box (A) – The Certified Mail stub (green card) or Electronic Tracking Notification is official acknowledgement that the Contractor has received the Final Voucher and Certificate of Final Acceptance. Enter the "Date of Delivery" shown on the stub or e-mail from USPS.
Box (E) – IC-134 Tax Withholding required by MN Statutes § 290.97 and 290.92.
Box (J) – Required on Federal Funding Projects designated as MAP, FAP, FFO, and SAFO and as required by District Engineer.
Box (K) – Form required on all projects with Federal Funds.
Box (L) – Form required on all projects with Federal Funds.

Attach Certified Mail stub here, or attach copy of Electronic Notification to back of this form.

Final Voucher Recall can only be done by the Office of Construction. If this is necessary, contact the Contract Administration Supervisor in the Office of Construction.

SAMPLE "D"

FIELD FINAL FLOW CHART



** State and Federal Contract Requirements that must be submitted to Engineer within 90 Days - Failure to submit these documents may result in the Contractor being placed on the Reject Bidders list shown above.
(a) **MN Revenue Form IC-134** – Withholding Affidavit for Contractors -Certificate of Compliance must be signed by Revenue before final payment can be made as per MN Statutes 290.92 and 270C-66.
(b) **Signed Certificate of Final Contract Acceptance** – Required by FHWA Stewardship Agreement before Final Payment can be made.
(c) **Credit due the State** – Payment must be made in accordance with MN/DOT Finance billing prior to Final Closeout. (OCIC will notify Engineer when Credit is Paid by the Contractor and released by Mn/DOT Finance.

* **Final Package** includes:
(1) Final Voucher and Certificate of Final Contract Acceptance - Required by Federal Stewardship Agreement
(2) Contract Requirement Letter - Lists all missing Documents the Contractor must submit to the Engineer in order to fulfill the Contract
(3) Credit Letter (if any) - States the dollar amount due and the conditions of repayment to the State.

Sample "E"

From: Robert Richards 2/7/07
To: Benjamin, Elizabeth
Subject: Project Hold S.P. #0205-0075 Park Construction

A case file has been opened for the above project. Please note that a labor hold on the final payment is automatically assigned to this case file until the investigation is complete. The hold will be removed when the case file has been successfully resolved.

If you have any questions, please call me at 651-366-4229.

Cc: Assistant District Engineer – Construction
Construction Office Manager

Sample E-Mail for **Placing** Labor "Hold"

From: Robert Richards 2/7/07
To: Benjamin, Elizabeth
Subject: Project Hold S.P. #0205-0075 Park Construction

The case file assigned to this project has been successfully resolved. The labor hold on the final payment has therefore been removed.

If you have any questions, please call me at 651-366-4229.

Cc: Assistant District Engineer – Construction
Construction Office Manager

Sample E-Mail for **Releasing** Labor "Hold"

MINNESOTA · REVENUE IC134

Withholding Affidavit for Contractors

This affidavit must be approved by the Minnesota Department of Revenue before the state of Minnesota or any of its subdivisions can make final payment to contractors.

Please type or print clearly. This will be your mailing label for returning the completed form.

Company name	Daytime phone	Minnesota tax ID number
	( )	
Address	Total contract amount	Month/year work began
	$	
City State Zip Code	Amount still due	Month/year work ended
	$	

Project Information

Project number | Project location

Project owner | Address | City | State | Zip code

Did you have employees work on this project? ☐ Yes ☐ No If no, who did the work?

Contractor type

Check the box that describes your involvement in the project and fill in all information requested.

☐ **Sole contractor**

☐ **Subcontractor**

Name of contractor who hired you

Address

☐ **Prime contractor**—If you subcontracted out any work on this project, all of your subcontractors must file their own IC134 affidavits and have them certified by the Department of Revenue *before* you can file your affidavit. For each subcontractor you had, fill in the information below and attach a copy of each subcontractor's certified IC134. If you need more space, attach a separate sheet.

Business name	Address	Owner/Officer

Sign here

I declare that all information I have filled in on this form is true and complete to the best of my knowledge and belief. I authorize the Department of Revenue to disclose pertinent information relating to this project, including sending copies of this form, to the prime contractor if I am a subcontractor, and to any subcontractors if I am a prime contractor, and to the contracting agency.

Contractor's signature | Title | Date

Mail to: Minnesota Revenue, Mail Station 6610, St. Paul, MN 55146-6610

Certificate of Compliance

Based on records of the Minnesota Department of Revenue, I certify that the contractor who has signed this certificate has fulfilled all the requirements of Minnesota Statutes 290.92 and 270C.66 concerning the withholding of Minnesota income tax from wages paid to employees relating to contract services with the state of Minnesota and/or its subdivisions.

Department of Revenue approval *Date*

Stock No. 5000134 (Rev. 1/07)

SAMPLE **"F"** – MN. Revenue Form IC-134

MINNESOTA –REVENUE

Contractor's Withholding Affidavit *SAMPLE ONLY*

Confirmation

ASPHALT SURFACE TECHNOLOGY CORP ID **3921215**
ASTECH CORP

Please keep this information for your records.

Submit a copy of this page to the project owner to receive your final payment.

Confirmation Number	1056568 Wed. Nov. 1608:53:34 CST 2005
Project Owner	MINN DEPT OF TRANSPORTATON
Project Number	8822-52
Project Begin Date	August 2005
Project End Date	September 2005
Project Location	POLK/ROSEAU/CLEARWATER/LAKE OF THE WOODS COUNTIES
Subcontractors	CENTURY FENCE CO. 8678834 103648 INTERSTATE TRAFFIC SIGNS INC 5503536 101584 SONNIS SPECIALTIES INC 472745997 105559

The above sample of the Contractor's Withholding Affidavit is now available to Contractors and be submitted directly to Mn Revenue on their website http://www.mndor.state.mn.us

This form can be used in lieu of Mn Revenue Form IC-134 (either /or) when finaling out your Project. The confirmation ID number will serve in place of a signature by a Revenue representative on the Certificate of Compliance on the IC-134 as required by MN Statute 270C-66 (Formerly 290.97).

You only need submit the **Prime Contractors** form in your Final Package that you submit to OCIC.

Sample "F" -1 – Alternate to Minn. Revenue Form IC-134

Form 17151 (12-62)

MINNESOTA DEPARTMENT OF HIGHWAYS

MAINTENANCE SECTION
VERTICAL AND HORIZONTAL BRIDGE CLEARANCE
REPORT

T.H.No. 494

BRIDGE No. 27213 + 27213A

COUNTY Henn DATE OF INFORMATION 3-28-90 MAINT AREA No. Metro

LOCATION 0.3 mi E of JCT TH 169
(Distance N-S-E-W from nearest town or highway intersection)

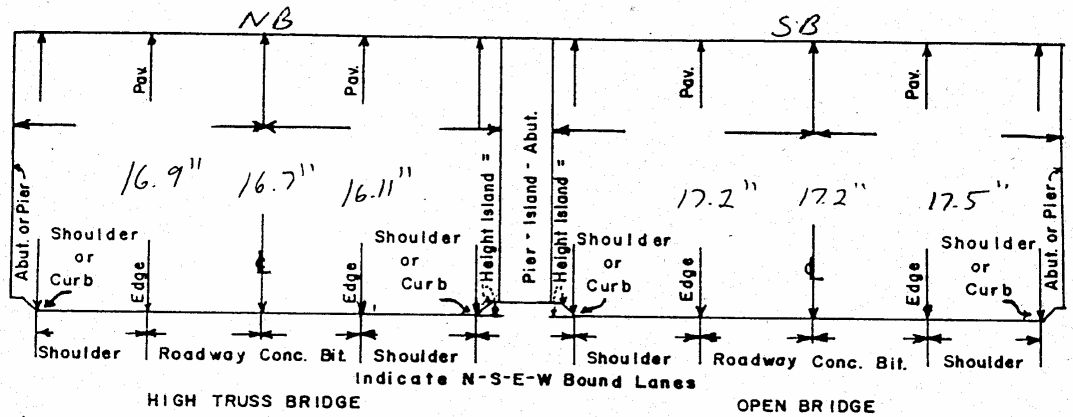
TYPE OF BRIDGE 501 BM SPAN

OVER OR UNDER WB Prairie Center Dr + RAMP
(Name or number Railroad - Highway - Street - County Road - River - Stream - Creek)

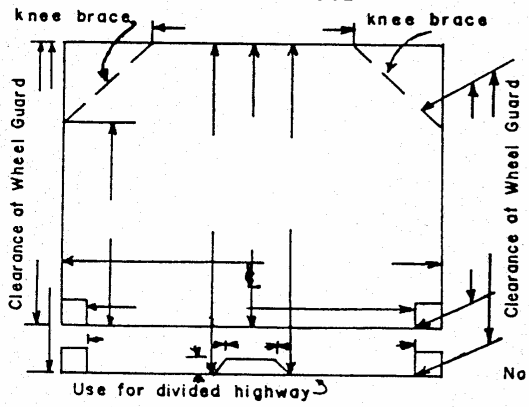
TYPE OF HIGHWAY INTERCHANGE ½ Diamond
(Draw Sketch on Reverse Side)

LOAD LIMIT Legal PERMIT LOAD LIMIT 38

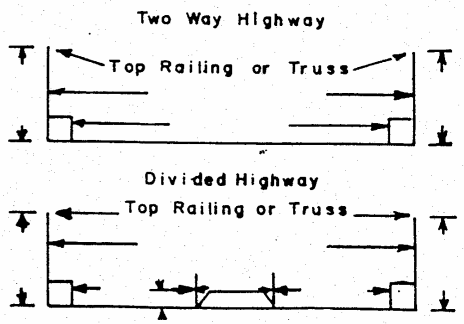
UNDERPASS - - DIVIDED HIGHWAY OR TWO WAY HIGHWAY



HIGH TRUSS BRIDGE



OPEN BRIDGE



Note: Show Sidewalks and indicate side of bridge N-S-E-W

Sample "G"

February 1, 2001

Joe's Paving Inc..
8820 18th Avenue East
Perham, Mn. 55379

Re: S.P. 2516-89
Contract Number: S06456
Final Voucher Number: 6

Dear Sir:

The Final Voucher and Certificate of Final Acceptance which you have received on the above-referenced contract is being recalled to modify the payment on the Final Contract Voucher. Please return both copies of the Voucher and Certificate of Final Acceptance. A new Final will be sent subsequent to resolution of this matter.

Your cooperation in this matter is appreciated.

Sincerely,

Dennis Springer
Contract Administration Specialist

cc: Project Engineer
Project File

Sample of Final Voucher Recall Letter From OCIC to Contractor

CHECKLIST FOR DOING FINAL IN FIELD

Draft Final Voucher

1. Run the Draft Final Voucher first and review it carefully for correctness (Especially Front Page). Make certain that Liquidated Damages (if any) are deleted on any back sheets and correctly shown on Front Page.
2. Verify - encumbrance is sufficient to create Final Voucher.
3. Verify - Fed Non-Part dollars are correct on Front Page.
4. Value of Work Certified columns must match previous partial estimate; if they don't Mn/DOT Finance will not process.
5. Final voucher number must be correct; Mn/DOT Finance will not accept voucher with incorrect number.
6. Review the Draft-Final Voucher with the Contractor if possible before running Final Voucher.

Final Voucher

- ☐ Generate and print the Final Voucher.
- ☐ Generate and print the Certificate of Final Acceptance
    1. Verify values shown on Voucher and Certificate are correct and in agreement.
- ☐ Make 1 additional copy of the Final Voucher and Certificate of Final Acceptance.
- ☐ Edit , generate and print the Final Requirements Letter.
- ☐ Print Credit Letter**, only if Credit owed is greater than $5.
- ☐ Make additional copy of the Front sheet of the Final Voucher and Final Requirement Letter and send inter-office mail to: OCIC, Mailstop 650, attn: Estimate Section. ******If there is a Credit letter make two copies of the Front sheet of the Voucher (and staple it to two copies of the Credit letter and send inter-office mail to OCIC (Include in same interoffice envelope).
    1. Option: Send scans (.pdf) of above required documents to **CPG** in Groupwise. For agencies outside of Mn/DOT, send to CPG@dot.state.mn.us. The Estimate section will make required copies. Do not send to individuals in CPG.

Prepare Certified Mail Package to Contractor

- ☐ Verify addresses
- ☐ Project Engineer ONLY sign Certificate of Final Acceptance (ADE does not sign until after the Contractor returns the final to you and all other Contract Requirements are met.
- ☐ Attach Certificate of Final Acceptance to original and copy of Final Voucher.
- ☐ Place both the original and copy of the Final Voucher in the Package along with one copy of each of the computer generated letters (i.e. Contract Requirements Letter; ******Credit letter)
- ☐ Send package to Contractor by Certified Mail. ***Be sure to request a return receipt.*** Option: you may request Electronic return receipt. USPS will send you

an e-mail with scan of signature (Date received by Contractor as proven on this scan, is date on which 90-day clock begins.)

Final Tracking:

- ☐ Enter "Date Cert. Of Final Acceptance signed by Engineer and sent to Contractor" on the Final Voucher Date Tracking Form,
- ☐ If Certified Mail Package is returned as "Undeliverable" call the Contract Administration Supervisor in OCIC.
- ☐ When return receipt is received, record the "Date of Delivery" shown on the Card in box (A) on Final Voucher Date Tracking Form. Attach receipt to Final Tracking Form.
- ☐ Calculate the Date due back from Contractor. (Add 90 calendar days, include Sat., Sun., and Holidays.) Enter in box (B) on the Final Voucher Date Tracking Form.
- ☐ Attach Return Receipt to the Final Voucher Date Tracking Form.

One original signature Final Voucher with the Contractors signature will be returned to you. The Contractor will keep the other original signature voucher for his records. After the Contractor has returned the Final Voucher:

- ☐ Verify that the returned Final Voucher is signed by the Contractor and properly notarized. If not, notify him immediately, return for notarization.
- ☐ Update the Final Voucher Date Tracking form with the "Date signed final received back in office from Contractor"
- ☐ Gather all of the requirements needed to fill out rest of the Final Date Tracking Form Boxes **(E)** through **(L)**. Mark any boxes that don't apply N.A.
- ☐ Retain the Final Voucher in the Resident Office until the Final Date Tracking Form is completely filled out. (This may be some length of time if there is a Labor Hold and your waiting for a "Labor Hold Release Letter"
- ☐ Verify dates shown on IC-134 Form *"Month / Year work Completed*" covers the period up to the Final Completion Date of your Contract. If dates aren't correct you must ask for a new IC-134 that covers correct timeline.
  - You only need the Prime Contractor IC-134 Form to meet final Requirements. If you receive the Subcontractors' forms (not required), keep in the Engineer's files.
- ☐ The OCIC Estimate Section will contact you when the Credit payment owed by the Contractor (if any) is paid. (Box "**I**" on the "Final Voucher Date Tracking Form" can be filled in at that time)
- ☐ Prior to sending Final Voucher and Certificate of Final Acceptance to the ADE for signature, verify in field CMS that a labor hold hasn't been placed on the project. You should have a letter or E-Mail from the Mn/DOT Labor Investigation unit if there is a hold. Lacking this letter, or any indication in CMS, you can mark Labor slot on date tracking form as N/A and immediately send on to the ADE for signature without checking further.

After all Requirements are met:

- ☐ Submit original signature Final Voucher and Certificate of Final acceptance, along with a copy of the Final Voucher Date Tracking Form to the Asst. District Engineer for signature.

After Asst. District Engineer signs and returns original signature Final/Cert. of Final Acceptance, organize the total Final Package to the Office of Construction as follows:

- ☐ Make two complete copies of the original signature Final Voucher.
- ☐ Include complete Original Signature voucher and one copy of the Final Voucher with the package to OCIC. Retain one copy of signed voucher in Engineer's files.
- ☐ Organize and submit the Final Package to the Central Office OCIC.
- ☐ Final will be closed out as-is.