

DOCUMENTATION OF PAY ITEM QUANTITIES

5-591.410

CONTRACT ADMINISTRATION MANUAL

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.

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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

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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 to 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

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"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.

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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.

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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.)

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(P) Plan Quantity Documentation²

(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

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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

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/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.)

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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.

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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 where 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.

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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).