



CHAPTER 12D

QUANTITIES

12D-1 Measurement

General measurement guidelines are defined in Subsection 00190.10. These include the guidelines for measuring Work or Materials on the unit basis, length basis, area basis, weight basis, volume basis, time basis and lump sum basis. Specific measurement requirements may be contained in the individual Measurement Subsection of the Standard Specifications or Special Provisions.

Check Contract Change Orders (CCOs), Addenda, Special Provisions, Project-specific drawings, Standard Drawings, and Standard Specifications to assure that the correct measurement is used for each item.

Guidelines for measurement are:

A. Area, Linear, and Volume

These measurements should normally be supplemented with a field sketch. Each document must be validated to show that the Work was performed. A validation statement, such as "measured", "re-measured", "installed", or "constructed", validates the source document in addition to a signature and date.

Measurement of certain Pay Items is limited to the Neat Lines shown in the Plans (e.g., 00557.80(b), Constructing Premixed Polymer Concrete Overlay). For these items a change order is required to modify dimensions. There is sometimes an allowance for changes as directed by the Engineer (e.g., 00759.80, volume and area basis).

For these items, unless there is an Agency-required change that modifies the dimensions of the Work, field measurements should not be used to calculate quantities for payment. If the Contractor is directed to perform Work beyond the Neat Lines (increasing or decreasing the dimensions of the Work), field measurements are required to support the quantities paid. When an Agency-required change modifies the dimensions of the Work, written direction from the Engineer, or an FIR that documents the Agency-required change, should be included with the source document.

B. Vehicle Measure

Document each haul vehicle volume with measurements of the hauling portion to support "water level" capacity. Be sure to use the proper mathematical procedure to calculate the volume. If there is doubt, the prismoidal formula works for all cases.

When each load is delivered, verify that the load quantity equals the calculated "water level" quantity. If it is less than the "water level" quantity, deduct the quantity less than "water level". If a load is over the "water level" quantity, make no adjustment for the extra Material. Clearly document this on the Material Delivery and Yield Check Sheet, form 734-2792. [See Section 12D-1(n)(4)(b).]

If the same number of loader buckets of a Material will be loaded into each haul vehicle, determine the average load volume instead of determining the measured capacity of each haul vehicle. Load the same number of full buckets, not leveled, onto a minimum of two (2) haul vehicles. Level, measure, and calculate the volume of each load. The average of the two (2) loads is the pay volume for all loads delivered and accepted.

Refer to the discussion of Weigh Memos and Scale Diary in Section 12D-1(n) for quantity requirements related to loads of material.

Remember that the Resident Engineer (RE) is responsible for measuring and determining quantity for all Pay Items. The Contractor is not allowed to document or establish pay quantities.

C. Weight/Volume Measurement Method Change

If the RE wishes to change the measurement from weight (Ton) to volume (cubic yards) or wishes to change any of the requirements of Subsection 00190.20, the RE must execute a CCO. The CCO shall include a credit to the Agency for the Contractor's cost savings related to not providing and operating the scales required by 00190.20.

Determine conversion factors prior to performing the work. Include conversion factor data for each Pay Item as part of the CCO, consisting of:

- For each type of Material, load a minimum of two (2) haul vehicles that can be readily measured.
- Determine the net weight (also gross and tare weights when appropriate) and the volume for each load.
- The average of the loads will establish the conversion factor.

D. Weighing

See the discussion on Weigh Memos and Scale Diary in Section 12D-1(n).

E. Lump Sum

At the pre-construction conference, the Contractor should submit a breakdown or schedule for lump sum payments. If the Contractor does not provide the breakdown, the RE will complete and share with the Contractor. See Section 12D-2(c) - Example #2, for a good example of a completed lump sum breakdown.

The RE must review the breakdown and make adjustments, if necessary, after discussion with the Contractor. Each progress payment for the lump sum item must relate to, and be substantiated by, the lump sum breakdown. If RE will be making partial payment on a LS pay item, a copy of the LS breakdown must be included with the first pay note. Also, refer to 00195.50.

F. Each

These items must be identified by station or location. Items that are installed in groups, such as plants and shrubs, are exceptions that may be listed in groups at general locations.

G. Temporary Striping, Temporary Tape (Removable, Non-Removable, Non-Reflective), Temporary Pavement Bars and Bar Removal

The bid prices for these items only apply to the bid quantity. Payment for quantities beyond the bid quantity will be made as specified under Subsection 00225.90. Address this prior to the quantity of Work performed reaches the bid quantity.

To continue paying at the bid price beyond the bid quantity, the RE must analyze the cost of the Work and justify that the bid price is no more than the cost to perform the Work. If the bid price is no more than the cost to perform the Work, the RE must include a cost analysis with the item documentation and include it with the Project documentation.

To document payment to the Contractor, the RE will need form 734-3955. The Contractor should also have in their possession proof of Flagger Certification for each flagger who performs work on the Project. Inspectors will randomly check Flagger Certification numbers and note this on the Flagger and Pilot Car Receipt and/or General Daily Progress Report form 734-3474. (Recommend keeping all flagging documentation together for auditing purposes.)

The Contractor's representative must also sign to show agreement.

This form is only available in hard-copy and is a three-part form; one copy is given to the Contractor each day Flagger or Pilot Car Work is performed, the second copy is the pay document for this Work, and the third copy is retained by the Inspector.

Refer to the appropriate portions of Section 00223. For PTVs, record these hours each day on a Flagger and Pilot Car Receipt, form 734-3955, or a similar format, that includes all required information including the location of the PTV. The Traffic Control Inspection Report (TCIR) will be the method for documenting TCS Work on the project.

The bid prices for these items only apply to the bid quantity. Payment for quantities beyond the bid quantity will be made as specified in 00223.90. Address this prior to the quantity of Work performed reaches the bid quantity.

To continue paying at the bid price beyond the bid quantity, the RE must analyze the cost of the Work and justify that the bid price is no more than the cost to perform the Work. If the bid price is no more than the cost to perform the Work, the RE must include a cost analysis with the item documentation and include it with the Project documentation.

If the bid price is more than the cost to perform the Work, the RE must either negotiate a new price to be paid under a CCO or order the Work to be performed on an Order for Extra Work to Be Performed on Force Account Basis. When negotiating a CCO for this, remember that the value paid for the Work cannot exceed that calculated on a force account basis, as stated in Section 00195.20(b).

I. Temporary Sign Quantities

Temporary signs will be measured on the area basis when the signs are delivered to the project. The quantities will be limited to those in the approved Traffic Control Plan (TCP) including speed zone signage. (See Subsection 00222.90.) The cost of installing the signs is included in the Temporary Protection & Direction of Traffic Pay Item.

In summary, ODOT will pay at least for the total quantity of signs shown on the approved TCP, at the bid price, whether or not all of the signs are actually installed.

J. Earthwork

If the Digital Terrain Model (DTM) is not used to calculate earthwork quantities, field measurements generally consist of field cross sections notes that show both the original ground and the as constructed ground cross section for each section staked. The RE must assure that the survey methods, formulas, and methods of calculation are all appropriate and correctly done. The RE should perform a validation to assure that the quantities are correct and complete.

If DTM or other electronic methods are used, compare the quantity to the Bid quantity and resolve significant differences. The RE will evaluate the grade and provide acceptance or rejection before the end of the first business day following receipt of the grade verification point (GVP) data from the Contractor or as otherwise agreed to accommodate construction staging. The RE will evaluate the grade using any industry-standard technique or the method described in this section. Also, perform a validation of the quantity, which may include the following:

- Review the grade verification report to confirm that the frequency of grade verification points meets the minimum requirements contained in Chapter 8 of the [Construction Surveying Manual for Contractors](#) and that there are no large voids in the coverage of the GVPs.
- Review the grade verification report to verify that the constructed grade is within the specified tolerances. At least 95% of the grade verification points should fall within the specified construction tolerance. All of the points should fall within two times the specified tolerance. For GVPs outside of the specified tolerances:
 - » Consider size and type of material used for constructing the grade

- » Rock slope excavations and stone embankments require discretion from the RE to determine grade acceptability. The RE may disregard failing rock slope GVPs and accept the rock slopes using other industry standard practices
- » Evaluate single GVPs that exceed two times the specified tolerances
- » Evaluate groups of GVPs that indicate an area may be out of tolerance
- » Require corrective work in areas that the RE determines are not acceptable
- Provide written verification to the Contractor in the form of an email, a note on the grade verification report, or other method indicating that the RE or designee has reviewed the GVPs and taken appropriate action.

In addition to validating the grade verification reports provided by the contractor, the RE must perform independent grade verification. Resident Engineers can perform grade verification by periodically collecting independent "quality assurance" GVPs to verify the constructed grade. QA GVPs should be collected according to Section 8.2 of the [Construction Surveying Manual for Contractors](#) or other approved methods. Other approved methods may include using survey-grade GPS, or level loops. If discrepancies are encountered, further investigation may be required using total stations or other high precision methods.

The intent of the QA GVPs is to verify approximately 5-10% of the constructed grade.

Include the written verification and the QA GVP data in the quantity documentation for the applicable Pay Items.

Contact the Contract Administration Unit (CAU), or Geometronics, for additional information or guidance.

K. Watering

When watering is included as a Pay Item in the Contract, the Agency must:

- Pay for watering that is done as directed or ordered, and
- Not pay for watering that is done for the Contractor's convenience or that is performed and paid under other Pay Items.

Assure that the volume of each haul vehicle is properly determined, unless measurement will be by an approved meter. This can be done either by truck weight or volume measurement. The vehicle measurement must be included with the source document for watering to validate the quantities being paid.

The source document for watering work is a Sprinkling Tally Sheet, form 734-3427 or a similar record that includes similar information. If the Contractor enters the information on the source document, assure that:

- Payment is only made for watering done as directed or ordered.
- Payment is not made for watering done for the Contractor's convenience or for Work paid under another Pay Item.

The Inspector performs the required validation (as noted above) to ensure the pay volumes on the record are appropriate.

The bid price for this work only applies up to 125% of the bid quantity. Payment for quantities beyond that quantity will be made as specified under Section 00340.91. Address this prior to the quantity of Work performed reaches the bid quantity.

To continue paying at the bid price beyond 125% of the bid quantity, the RE must analyze the cost of the Work and justify that the bid price is no more than the cost to perform the Work. If the bid price is no more than the cost to perform the Work, the RE must include a cost analysis with the item documentation and include it with the Project documentation.

If the bid price is more than the cost to perform the Work, the RE must either negotiate a new price to be paid under a CCO or order the Work to be performed on an Order for Extra Work to Be Performed on Force Account Basis. When negotiating a CCO for this, remember that the value paid for the Work cannot exceed that calculated on a Force Account basis, as stated in Subsection 00195.20(b).

L. Piling

The source document for piling work is a Pile Record Book, form 734-3485, or a similar format that includes all needed information. Refer to the Contract to determine the information that must be recorded by the Inspector for each pile installed on the Project.

DAILY ASPHALT CEMENT REPORT

E English (E) or Metric (M)

PROJECT NAME (SECTION) US101: SE 32nd Street - SE 35th Street					CONTRACT NUMBER 15217				
CONTRACTOR Road & Driveway CO					PROJECT MANAGER Steve Schultz				
					REPORT NUMBER 8				
					SUPPLIER Albina				
					DATE 9/3/2021				
ASPHALT INVENTORY METHOD					SMALL QUANTITY METHOD				
PREVIOUS ENDING TANK STICK LINE 8 FROM PREVIOUS REPORT 1 47.12					ASPHALT TARGET % FROM JOB MIX FORMULA C				
DELIVERIES BEFORE BEGINNING TANK STICK					Tons MIX THIS DATE X $\frac{C}{100} =$ ASPHALT CEMENT INCORPORATED				
INVOICE NO.	Tons	INVOICE NO.	Tons	INVOICE NO.	Tons				
								10	
TOTAL DELIVERIES 2					BATCH MASS METHOD				
DEDUCTIONS BEFORE BEGINNING INVENTORY EXPLAIN BELOW OR ON ATTACHMENT					BATCH TICKET NO.				
EXPLANATION					ASPHALT CEMENT INCORPORATED				
3					11				
BEGINNING INVENTORY 1 + 2 - 3 (ANY DIFFERENCES WITH LINE 5 OTHER THAN MINOR MEASURING DIFFERENCES, MUST BE RESOLVED)					ASPHALT CEMENT SUMMARY				
4 47.12					ASPHALT CEMENT IN MIX B.I. NO. 600				
TANK NO.	TEMP	TANK STICK	VOLUME IN TANK X	TEMP CORR. FACTOR X	SPECIFIC GRAVITY /239.9=Tons	PREVIOUS REPORT LINE 14			
1	300	17'	11947	0.9187	1.030	12	205.7		
2						13	14.88		
3						14	220.58		
BEGINNING TANK STICK TOTAL 5 47.12					ASPHALT MIXTURE SUMMARY				
DELIVERIES AFTER BEGINNING INVENTORY					CLASS B.I. NO.				
INVOICE NO.	Tons	INVOICE NO.	Tons	INVOICE NO.	Tons	Level 3 1/2" HMAC	HMAC	590	
						15	4681.78		
TOTAL DELIVERIES 6					PREVIOUS REPORT LINE 17 15 4681.78				
DEDUCTIONS AFTER BEGINNING INVENTORY (TACK, WASTE, REJECT, SOLD TO OTHERS ETC.) EXPLAIN BELOW OR ON ATTACHMENT					MATERIAL RECEIPT TOTAL FOR THIS DATE 16 330.39				
7 1.70					ASPHALT MIXTURE TO DATE 15+16 17 5012.17				
ENDING TANK STICK					CLASS B.I. NO.				
TANK NO.	TEMP	TANK STICK	VOLUME IN TANK X	TEMP CORR. FACTOR X	SPECIFIC GRAVITY /239.9=Tons		HMAC		
1	300	11' 1/2"	7743	0.9187	1.030	18			
2						19			
3						20			
ENDING TANK STICK TOTAL 8 30.54					PREVIOUS REPORT LINE 20 18				
ASPHALT CEMENT LINES 4 or 5 + 6 - 7 - 8 9 14.88					MATERIAL RECEIPT TOTAL FOR THIS DATE 19				
					ASPHALT MIXTURE TO DATE 18+19 20				
WASTE DEDUCTION CALCULATION From Form 2401					Remarks				
TOTAL MIX NOT ACCEPTED Line "e" e 37.66									
DAILY AVERAGE MIX MOISTURE Line "a" g 0.12									
TOTAL DRY MIX NOT ACCEPTED e / (1+(g/100)) TD 37.61									
BY TANK % Pb HMAC Line "Z" Z 4.51									
WASTE ASPHALT for line 7 deductions (TDxZ)/100 7 1.70									
CERTIFIED TECHNICAN (PLEASE PRINT) AND CARD NUMBER Bill Whetzell 44300					COMPANY NAME Road & Driveway Co		SIGNATURE 		DATE 9/3/2021

M. Asphalt Cement in Asphalt Concrete Mixture

When asphalt cement is paid separately from the asphalt concrete mixture, the RE must calculate the quantity of asphalt cement to be paid. Use one of the following methods to determine the pay quantity for the asphalt cement in the mixture:

1. Asphalt Inventory Method

- Refer to the ODOT Manual of Field Test Procedures for instructions on this method.
- Use the Asphalt Inventory Method to compare the asphalt cement quantity determined by tank sticking with the quantity supported by delivery invoices. This method is

generally used when all plant production is dedicated to the Project, or a supplier has set aside a storage tank to be used exclusively for the Project. There can be numerous problems with this method when using commercial plants that furnish asphalt cement mixture to both ODOT and other Projects.

- Record tank measurement and delivery invoice quantities on the Daily Asphalt Cement Report, form 734-2043 (see example). Weigh and deduct all asphalt cement used for tack or other uses. Also deduct the weight of the asphalt cement in rejected mixture, waste, or Material not incorporated into the Project.

Storage tanks should be level and free of buildups in order to obtain accurate measurements. Check the tank manufacturer's volume conversion charts for accuracy. One method to do that is to compare the invoice quantity to the quantity determined from tank stickings taken before and after delivery.

Check weigh the delivery vehicles occasionally by weighing the delivery vehicle before and after delivery and comparing the delivered quantity to the invoice. Resolve any differences greater than allowed by 00190.10(d)(2). Also refer to the discussion of Check Weighing in Section 12D-1 (n-2).

2. Testing Method

Use this method when the inventory method is inappropriate because asphalt mixture is also supplied to others or the mixture contains recycled asphalt pavement (RAP). The following test method is specified for this purpose:

Asphalt Content by Ignition Method (Calibration according to ODOT TM 323 and test according to AASHTO T 308 Method A or Method B, Refer to the Manual of Field Test Procedures for the actual test procedure.

Enter the asphalt content test result percentages into the Statistical Testing Input Data sheet in the StatSpec program. The program uses the asphalt and moisture content means that appear on the bottom of the Price Adjustment Computation sheet to calculate the asphalt cement pay quantity. [Refer Chapter 12C – Quality Price Adjustments.]

3. Small Quantity Method

When small quantities of mixture are accepted without testing, calculate the quantity of asphalt cement in the mixture by using asphalt cement percentages from one of the following:

- Job Mix Formula
- Batch Weights
- Average as determined from the asphalt inventory or StatSpec

Calculate and document quantities on the Daily Asphalt Cement Report, form 734-2043, under "Small Quantity". Refer to the ODOT Manual of Field Test Procedures for instructions on this calculation.

It is very important to note that, no matter which method is used to determine the asphalt cement quantities, the quantities must be calculated daily during production and paid for on the progress estimate for that month. Some Contracts contain an asphalt escalation/de-escalation Specification (Subsection 00195.10) which requires the Agency to make an adjustment in payment when the price of asphalt fluctuates significantly. [Refer to Chapter 12E – Adjustments to Lump Sum and Other Items, Section 12E-2.]

If you have questions about measurement of any item, contact your Region Assurance Specialist (RAS) or the CAU.

N. Weigh Memos and Scale Diary

Also refer to above discussion on Vehicle Measure. [See 12D-1(B).]

When the Contractor provides and uses scales for measuring pay quantities, the scales must meet the requirements of Subsection 00190.20.

Subsection 00190.20(d) requires that scales be inspected and tested at various times, by the Department of Agriculture or other appropriate regulatory agency. The RE may request additional inspections if there is any reason to believe that the scales may not be functioning properly. This work determines the weight for pay purposes.

1. Scale Diary

For all Projects that have Material paid on the weight basis, the RE must prepare a scale diary and submit it with the Project quantity documentation.

Record the following information in or attached to the scale diary:

- Appropriate dates and signatures of persons making entries.
- For both Project and check weighing scales, include scale location and owner, manufacturer, serial number, type of scale, and maximum capacity.
- Scale inspection reports furnished by the Department of Agriculture or a scale service company. See Subsection 00190.20(d) for frequency of inspection.
- Results of inspections directed by the RE.
- Corrective measures taken when an inspection or check weight indicates that the scale is not operating within tolerances.
- Dates, hours at the scale, and names of Agency-provided weighers and weigh witnesses.
- Dates and times that the Agency, the Contractor, or others were notified of problems that could cause inaccurate weights and action taken.
- Tare weights of haul vehicles and time that the weights were obtained. This information is not needed in the diary if tares are obtained for every load. The tare weight information is recorded on the Tare Sheet, form 734-2394, or alternate form approved by the RE.
- Check weighing required by Subsection 00190.20(f), including a comparison with the appropriate weigh memo.
- Check weighing of bulk Materials shipped to the Project, such as asphalt cement, lime, or Portland cement.

2. Check Weighing

Perform check weighing as required, and at the frequency specified, in Subsection 00190.20(f). Record the results of the check weighing and the comparison in the scale diary, as indicated in the example below:

CHECK WEIGHING EXAMPLE

Gross Weight:	<u>Project or Contractor Scale</u> 39.69 Tons	<u>Check Scale</u> 39.74 Tons
	$\frac{(39.69) - (39.74) \times 100}{39.69} = 0.1 \text{ percent difference}$	

If observation, the check weighing, or other concern indicates that the scales are not operating within the tolerances specified in Subsection 00190.20(f), the RE must:

- Immediately order the scale operation to be corrected, and
- Determine which weigh memos were impacted by the incorrect scale operation and resolve that information.

4. Receipt of Material on the Project

Each load of Material delivered to the Project Site must be documented and verified by the Agency's Materials Receiver (not Contractor personnel).

The RE shall document two independent reviews of the daily material totals that reconcile, regardless of which collection method chosen:

Collecting Weigh Memos from Haul Vehicles

On small projects, or projects with few, intermittent loads of Materials being delivered, the field conditions may be safe enough to allow the Agency's Materials Receiver to collect the Weigh Memos directly from the haul vehicles. In these instances, the Materials Receiver will:

Collect the Weigh Memo directly from the haul vehicles as the Materials are delivered to the Project Site. Record the following information on each Weigh Memo:

- Location of delivered Material (station, mile point, etc.)
- Haul truck information (truck number), if not already noted on Weigh Memo
- Time Material was delivered
- Signature and date of Materials Receiver
- Perform yield calculations at least once per day when more than 10 trucks of ACP are placed. (See theoretical yield calculation on next page.)
- If the load of Materials or any portion of the load of Materials is rejected at the Project Site, write "REJECTED" on the Weigh Memo.

At the end of the shift, the Materials Receiver will gather all Tare Sheets for the Materials placed that date from the weigh scales and will then perform the final pay quantity calculation by running two (2) adding machine tapes or alternate computer-generated source summation documents totaling up all Weigh Memos. [See 12D-3(A).]

- If the total on the second quantity summation matches the total on the first summation, the person performing the calculation will sign and date one of the adding machine tapes or approved computer-generated source documents. Include both the Project and Pay Item identification on the submittal as well.

- If the total on the second quantity summation **does not** match the total on the first, an additional summation must be run. There must be two (2) totals that match before the final pay quantities can be verified.

The Weigh Memos and signed and dated quantity tabulations are bound together and submitted for checking by a second person before payment is made for the Materials.

Weigh Memos NOT Collected From Haul Vehicles

If the RE determines that field conditions are not safe enough for the Weigh Memos to be collected directly from the haul vehicles, the Materials Receiver will:

Record the required information for each load of Material delivered on the Material Delivery and Yield Check Sheet, form 734-2792.

- If any Material is rejected on the Project Site, write "REJECTED" and an estimated quantity in the remarks section on form 734-2792.

The Materials Receiver will perform theoretical yield calculations at least once per day when more than 10 trucks of ACP are placed and record the required information on the Material Delivery and Yield Check Sheet, form 734-2792.

- The actual tonnage placed should be within 10% of the calculated yield. If it is not, verify the measurements and recalculate the yield.
- After verifying the measurable values for the yield calculations, if the calculated yield and actual yield difference cannot be resolved, an explanation is needed in the remarks area of the form.
- If there are another 10 loads of ACP being placed, perform another yield calculation to verify the results are within the 10% tolerance.
- If the results are still out of tolerance, check with the density technician to verify if there are problems with the MAMD.

The Materials Receiver will periodically (daily, or several times per day) gather the Weigh Memos from the weigh scale and compare the information on the Weigh Memos to the information recorded on the Material Delivery and Yield Check Sheet. Any discrepancies in the information should be discussed with the Contractor's representative and resolved immediately.

At the end of the shift, the Materials Receiver will gather all the Weigh Memos and associated Tare Sheets for the Materials placed that date from the weigh scales.

Using the information recorded on the Weigh Memos, the Materials Receiver will record the quantities for each corresponding load of Materials on the Material Delivery and Yield Check Sheet, calculate the total Materials placed that date, and sign and date the form.

The Materials Receiver will perform the final pay quantity calculation by running an adding machine tape or approved computer-generated source document totaling up all Weigh Memos.

- If the total on the quantity summation matches the total on the Material Delivery and Yield Check Sheet, the person performing the calculation will sign and date the adding machine tape or approved computer-generated source document.
- If the total on the quantity summation **does not** match the total on form 734-2792, a second summation must be run. There must be two (2) totals that match before the final pay quantities can be verified.

The Material Delivery and Yield Check Sheet, signed and dated quantity tabulations, and all Weigh Memos are bound together and submitted for checking by a second person before payment is made for the Materials.

SAFETY: If the Materials Receiver must work in the construction area, they will be exposed to vehicle traffic and construction operations. If the RE determines that field conditions **are not** safe enough for the Materials Receiver to be on-site to verify Materials delivery, the RE should contact the CAU or the Contract Administration Engineer (CAE) for guidance on alternative methods for Materials verification.

If the RE determines that field conditions are safe enough for the Materials Receiver to be on-site to verify Materials delivery, follow these safety tips:

- **Never** walk behind any Equipment or haul vehicles.
- **Always** be aware of Equipment, haul vehicles, or traffic. At all possible times face Equipment, haul vehicles, and traffic. Walk in front of haul vehicles or Equipment where the driver or operator can see you and make eye contact. Maintain eye contact until you are in a safe area.
- **Always use common sense.**

12D-2 Quantity Documentation

The written evidence to support progress payments, and eventually final payment, consists of “source documents” with appropriate signed and dated calculation sheets showing the quantities of Work completed or accepted. For progress payments on lump sum items, a signed and dated source document must verify the amount of Work completed and correspond to an appropriate lump sum breakdown, or schedule, approved by the Resident Engineer (RE) and generally submitted by the Contractor.

A. Source Documents

Source documents must be prepared in a clear manner such that a person who has never been on the Project and knows nothing about the Work should be able to follow what is being paid for and why.

“Source documents” are the field notes, calculations, receipts, invoices, and reports used to determine project pay quantities. Acceptable source documents generally do not exceed a single pay period and shall include the following:

- 1. Project Identification** – There must be sufficient identification on each document to clearly identify on which Project the Work was done. If the document is large enough, both the Project name and Contract number should appear on each document, including those documents prepared by the Contractor, Supplier, or manufacturer.
- 2. Pay Item Identification** – Project Pay Item number(s) and, if appropriate, the item name. The source document must also indicate the proper Participation Indicator (sub-job) to which the Work is to be charged if more than one Participation Indicator could be used for that Pay Item.
- 3. Validation** – Verifying statement that the item was actually installed, performed, re-measured, furnished, completed, received, or accepted.
- 4. Specific Location of Installation** – Project station(s) and, when appropriate to clarify or explain measurements, a sketch of the installation to show measurements or as-constructed details. Include additional information, such as Bridge number or stream, intersection, street, or road names (if applicable).
- 5. Date(s)** – Date(s) the source document was prepared, validated, checked, and, (when appropriate) the date(s) of the Work.
- 6. Signatures** – Signatures for each person that prepared, validated, and checked the document. If the checker finds an error in the original information, the checker should have the orig-

inal preparer review and confirm the correction. A signature is a person's name written the way that they normally write it. Initials are not acceptable unless the person's signature also appears on or is attached to the document. Source documents shall show the signature of the person making the entries and the names of other members of the crew involved in obtaining the information on the note. Payments should not be posted until the document has been checked by a second person.

Prepare the source document at the time and place of delivery, performance, installation, or measurement of the Pay Item. Line out, rather than erase, incorrect entries on a source document. Validate alteration of data by date and signature. If one person makes all of the changes and the affected documents are bound, a single validation statement is sufficient.

B. Computer-Generated Source Documents

In order to allow the use of computers by field personnel, the following guidelines also apply to computer-generated source documents:

- A source document for a unit price Pay Item normally covers one pay period.
- Calculation methods and input must be checked.
- Formula(s) for calculations must be included and shown on the final quantity source document.
- Summary sheets do not replace final quantity source documents.

C. Record Keeping

Record keeping is extremely important for payment purposes. Accurate records are required to assure proper progress and final payments. The RE must assure that the procedures include the following activities:

- Review Plan quantities to verify their accuracy.
- Establish quantity documentation methods for progress and final payments.
- Organize a user-friendly system for records.
- Use proper validation of source documents.
- Use accurate, easy to follow measurement and calculation methods.
- Assure that each pay quantity is properly charged to the right Participation Indicator (sub-job).
- Have a second person check all formulas and calculations.

- Prepare a summary sheet of pay quantities.
- Assemble documents for final records submittal.

It is important to remember that Section 00190.00 of the Contract specifically states that the Engineer will measure or determine all pay quantities unless otherwise specified. The RE is responsible for measurement and quantity determinations for all Pay Items.

Contractors and Subcontractors are not allowed to document or establish pay quantities. The RE may use some information that is developed by the Contractor or Subcontractor to determine pay quantities, but must perform some sort of validation of the Contractor or Subcontractor's information. For example:

- Although the Contractor is allowed to complete a Sprinkling Tally Sheet, form 734-3427 or a similar format, the Inspector must validate the quantity used. [See Section 12D-1(k).]
- Section 12D-1(n) on Weigh Memos and Scale Diary addresses Materials weighed on Contractor-provided scales.
- If the RE uses information prepared by the Contractor's surveyor to calculate pay quantities, the RE must perform a validation of the surveyor's information. [See Section 12D-1(j).]

Each Pay Item must have documentation to support each monthly payment. It is reasonable to expect a reviewer to request documentation for a payment made the previous month or many months before. Do not make any payment without the proper quantity calculations and required quality documents.

Organize the documentation for easy review. Submit as discussed in Chapter 37 - Submittal of Final Project Documentation.

For reference, following are some examples of Source Documents ("paynotes") prepared using the ODOT Paynote, form 734-2605.

Example 1

Source Document ("paynote") and Lump Sum (LS) Schedule of Values or Lump Sum ("breakdown"). This breakdown is used to establish the monthly progress payments for the lump sum Pay Items. If this information is not provided by the Contractor, the RE should establish the values (see 00195.50) prior to any lump sum payments being made.

Example 1



Pay Note
(Project Work Record)

Project Information					
US97 at Wickiup Jct. (LaPine) Phase 2	CON04539	011	01	01	C15390
<small>Project Name</small>	<small>EA</small>	<small>Subjob</small>	<small>Estimate</small>	<small>Pay Note</small>	<small>Contract</small>
Temporary Protection & Direction of Traffic	BI0020	William Martin	Nathan Boechler		
<small>Item Description</small>	<small>Bid/Pay Item</small>	<small>Resident Engineer</small>	<small>Prepared by</small>		

Method of Quality Assurance						
Quality Documentation*		F - Field Inspection Report (FIR)				QPL
<input type="checkbox"/> E	<input type="checkbox"/> O	<input type="checkbox"/> New*	<input type="checkbox"/> Previous	<input type="checkbox"/> Estimate	<input type="checkbox"/> Pay Note	<input checked="" type="checkbox"/> No QPL
<input type="checkbox"/> L (Report #) _____	<input type="checkbox"/> BG	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	<input type="checkbox"/> QPL - Approved
<input type="checkbox"/> I (Report #) _____	<input type="checkbox"/> R	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	<input type="checkbox"/> QPL - Qualified
<input type="checkbox"/> W	<input type="checkbox"/> P/R	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	QPL # _____
<input type="checkbox"/> P	<input type="checkbox"/> Q	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	QPL # _____
<input type="checkbox"/> M	<input type="checkbox"/> T	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	QPL # _____
<input type="checkbox"/> Small Quantity	<input type="checkbox"/> Field Tested Material	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	QPL # _____
<small>*Click on letters for definitions.</small>		<small>*Enter on New Field Inspection Information page below.</small>				<small>Future QPL # _____</small>

Quantity Data			
Previous Quantity	0.000	LS	<input type="checkbox"/> Remeasurement
		Unit	<input type="checkbox"/> Measured in Place Method
Quantity This Note	10.000 (+ or -)		<input checked="" type="checkbox"/> Partial Payment
Total Quantity to Date	10.000		<input type="checkbox"/> Material on Hand (see Material on Hand page below)
Calculations and/or Remarks			
<p>Per Lump Sum Breakdown, pay 10% of the Temporary Protection and Direction of Traffic bid item for the month of August.</p> <p>Pay 10% of the Lump Sum Amount on this note per Section 00221.90(b).</p> <div style="text-align: right; margin-top: 20px;"><i>Nathan Boechler</i></div>			
<input type="checkbox"/> No Quality Documentation Required <input type="checkbox"/> Photos Attached <input type="checkbox"/> Illustration Attached			

Reviewed by	
<small>Quality Checked by</small>	<small>Date</small>
<small>Quantity Checked by</small>	<small>Date</small>



3361 SW Black Butte, Redmond OR, 97756 | PH (541) 699-6735 | Fax: (541) 526-5790

Lumpsum Breakdown

US97 at Wickiup Junction Phase 2

0010	Mobilization	Per specifications
0020	TPDPT	10% initial - Prorated at 30% per month
0090	Erosion Control	Per specifications
0110	Pollution control plan	Per specifications
0120	Construction survey work	20% initial office - Prorated at 27% per month
0130	Removal of structures and obstructions	50% BOP items 50% EOP items
0140	Clearing and Grubbing	Prorated per acre cleared

Example 2

Source Document ("paynote") for a completed lump sum bid item. This payment is made using the lump sum breakdown schedule required by the Contract (00210.90).

Example 2



Pay Note (Project Work Record)

Project Information					
OR99-I-5 Emergency Water Quality Facility Repair	CON04566	011	01	01	15406
<small>Project Name</small>	<small>EA</small>	<small>Subjob</small>	<small>Estimate</small>	<small>Pay Note</small>	<small>Contract</small>
MOBILIZATION	0010	Tim Fletcher	Patrick Renfrew		
<small>Item Description</small>	<small>Bid/Pay Item</small>	<small>Resident Engineer</small>	<small>Prepared by</small>		

Method of Quality Assurance																																					
<p>Quality Documentation*</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <input type="checkbox"/> E <input type="checkbox"/> L (Report #) _____ <input type="checkbox"/> I (Report #) _____ <input type="checkbox"/> W <input type="checkbox"/> P <input type="checkbox"/> M <input type="checkbox"/> Small Quantity </div> <div style="width: 45%;"> <input type="checkbox"/> O <input type="checkbox"/> BG <input type="checkbox"/> R <input type="checkbox"/> P/R <input type="checkbox"/> Q <input type="checkbox"/> T <input type="checkbox"/> Field Tested Material </div> </div> <p><small>*Click on letters for definitions.</small></p>	<p>F - Field Inspection Report (FIR) Tracking</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">New*</th> <th style="width: 10%;">Previous</th> <th style="width: 10%;">Estimate</th> <th style="width: 10%;">Pay Note</th> <th style="width: 10%;">Link (opt.)</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> <p><small>*This box is not the FIR - New Field Inspection page(s) must be completed!</small></p>	New*	Previous	Estimate	Pay Note	Link (opt.)	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<p>QPL</p> <input checked="" type="checkbox"/> No QPL <input type="checkbox"/> QPL - Approved <input type="checkbox"/> QPL - Qualified QPL # _____ QPL # _____ QPL # _____ QPL # _____ Future QPL # _____
New*	Previous	Estimate	Pay Note	Link (opt.)																																	
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																																	
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																																	
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																																	
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																																	
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																																	
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																																	

Quantity Data			
Previous Quantity	0.000	LS	
<small>Unit</small>			<input type="checkbox"/> Remeasurement
Quantity This Note	100.000 (+ or -)		<input type="checkbox"/> Measured in Place Method
Total Quantity to Date	100.000		<input type="checkbox"/> Partial Payment
Calculations and/or Remarks			<input checked="" type="checkbox"/> Material on Hand (see Material on Hand page below)

AS per Standard Specification 00210.90 pay 100% of amount for mobilization when 10% of contract is earned.

No Quality Documentation Required
 Photos Attached
 Illustration Attached

Reviewed by			
<small>Quality Checked by</small>	<small>Date</small>	<small>Quantity Checked by</small>	<small>Date</small>

Examples 3 through 7

These are Source Documents ("paynote") illustrating different methods of calculating Materials installed.

Example 3



Pay Note (Project Work Record)

Project Information					
US20: Tumalo - Cooley Rd. (Bend) Sec.	CON04569	011	02	01	C15407
Project Name	EA	Subjob	Estimate	Pay Note	Contract
General Excavation	0480	William Martin	Haydon Gillies		
Item Description	Bid/Pay Item	Resident Engineer	Prepared by		

Method of Quality Assurance																																			
Quality Documentation* <input type="checkbox"/> E <input type="checkbox"/> O <input type="checkbox"/> L (Report #) _____ <input type="checkbox"/> BG <input type="checkbox"/> I (Report #) _____ <input type="checkbox"/> R <input type="checkbox"/> W <input type="checkbox"/> P/R <input type="checkbox"/> P <input type="checkbox"/> Q <input type="checkbox"/> M <input type="checkbox"/> T <input type="checkbox"/> Small Quantity <input type="checkbox"/> Field Tested Material <small>*Click on letters for definitions.</small>		F - Field Inspection Report (FIR) <table border="1"> <tr> <th>New*</th> <th>Previous</th> <th>Estimate</th> <th>Pay Note</th> <th>Link (opt.)</th> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </table> <small>*Enter on New Field Inspection Information page below.</small>			New*	Previous	Estimate	Pay Note	Link (opt.)	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	QPL <input checked="" type="checkbox"/> No QPL <input type="checkbox"/> QPL - Approved <input type="checkbox"/> QPL - Qualified QPL # _____ QPL # _____ QPL # _____ QPL # _____ Future QPL # _____
New*	Previous	Estimate	Pay Note	Link (opt.)																															
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																															
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																															
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																															
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																															
<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____																															

Quantity Data			
Previous Quantity	0.000	CUYD	<input type="checkbox"/> Remeasurement
Quantity This Note	4867.900 (+ or -)	Unit	<input checked="" type="checkbox"/> Measured in Place Method
Total Quantity to Date	4867.900		<input type="checkbox"/> Partial Payment
Calculations and/or Remarks			<input type="checkbox"/> Material on Hand (see Material on Hand page below)

Contractor performed 4,867.9 CUYD of General Excavation per Section 00330.41 in the month of November.

Excavation measured per Section 00330.81.

Contractor used two side-dump trucks (35'x4'x5' = 700cuft/27 = 25.9cuyd per truck)

Contractor hauled 181 loads in November.

181 x 25.9cuyd = 4,867.9cuyd

Pay 4,867.9 CUYD of General Excavation per Section 00330.93(d).

Haydon Gillies

No Quality Documentation Required
 Photos Attached
 Illustration Attached

Reviewed by			
Quality Checked by	Date	Quality Checked by	Date

Example 4



**Pay Note
(Project Work Record)**

Project Information

OR126: Florence - Eugene Shoulder Widening Section <small>Project Name</small>	CON04342 <small>EA</small>	000 <small>Subjob</small>	08 <small>Estimate No.</small>	01 <small>Pay Note No.</small>	C15222 <small>Contract No.</small>
Permanent Seeding, Mix No. 2 <small>Item Description</small>	0690 <small>Bid/Pay Item No.</small>	Shane Prohaska <small>Resident Engineer</small>	David Butler <small>Prepared by</small>		

Method of Quality Assurance

No Quality Documentation Required

Supporting Documents Provided as Part of Pay Note (Click on letters for definition)

- | | |
|---|---------------------------------------|
| <input type="checkbox"/> E | <input type="checkbox"/> O |
| <input type="checkbox"/> L (Number) _____ | <input type="checkbox"/> BG |
| <input type="checkbox"/> I (Number) _____ | <input checked="" type="checkbox"/> R |
| <input type="checkbox"/> W | <input type="checkbox"/> P/R |
| <input type="checkbox"/> P | <input checked="" type="checkbox"/> Q |
| <input type="checkbox"/> M | <input checked="" type="checkbox"/> T |
| <input type="checkbox"/> Small Quantity | |

F - Field Inspection Report (FIR)

New*	Previously Submitted	Estimate No.	Pay Note No.	Link
<input checked="" type="checkbox"/>	<input type="checkbox"/>	008	001	
<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>			
<input type="checkbox"/>	<input type="checkbox"/>			

QPL

- No QPL
- QPL - Approved
- QPL - Qualified
- QPL No. 4897
- QPL No. _____
- QPL No. _____
- QPL No. _____
- QPL No. (Future) _____

*Enter on New Field Inspection Information Page below.

Quantity Data

Previous Quantity	0.00	Unit	acre	<input type="checkbox"/> Remeasurement	2021/9/22
					Installation Date
Quantity This Note	2.45 (+ or -)			<input checked="" type="checkbox"/> Measured in Place Method	2021/9/30
					Bid Item/Pay Item Completion Date
Total Quantity to Date	2.45			<input type="checkbox"/> Partial Payment	
				<input type="checkbox"/> Material on Hand	See Material on Hand Page below

Calculations and/or Remarks

See attached Inroads calculation areas.

Acres = 3.5 acre

At completion of seeding, pay 70%: 3.5 x 0.70 = 2.45 acre

- Photos Attached
- Illustration Attached

Reviewed by

Justin Cary	10/4/2021
Quality Checked by	Date
Justin Cary	10/4/2021
Quality Checked by	Date

734-2605 (Revised January 2021)



**Pay Note (New Field Inspection Information)
(Project Work Record)**

OR126: Florence - Eugene Shoulder Widenir 0690 08 01 C15222
 Project Name Bid/Pay Item No. Estimate No. Pay Note No. Contract No.

Materials Delivered for this Project

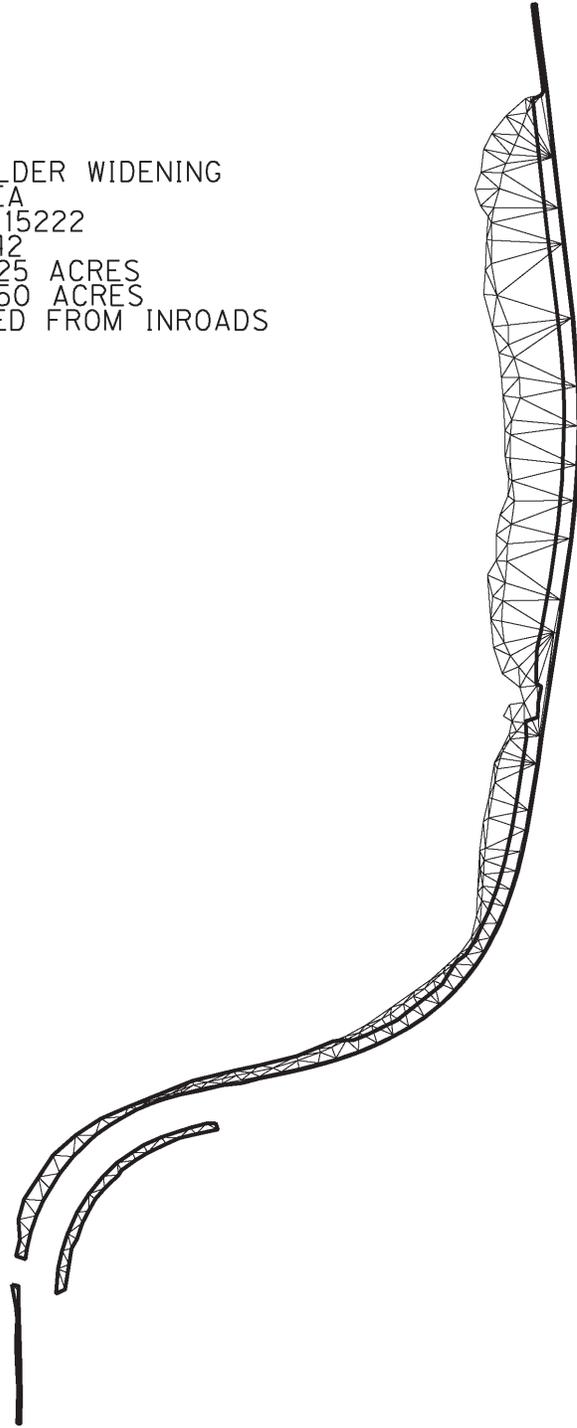
<u>Soil Bio-Amendments</u>			<u>2021/9/21</u>	<u>AEC</u>
Type of Material			Date Delivered	Delivered to (Name of Contractor/Subcontractor)
<u>Profile Products, LLC</u>			<u>0.00</u>	<u>n/a</u>
Source of Material (Manufacturer or Fabricator)			Quantity Rejected	Rejection explanation/reason
<u>3.50</u>	<u>acre</u>	<u>3.50</u>	<u>C993+50, It</u>	
Quantity Delivered	Unit	Quantity Received	Where Inspected	
<u>3.50</u>		<u>2.50</u>	ProGanics Biotic Soil Media. QPL#4897.	
Total Received to Date	Estimated Total Required			
<u>David Butler</u>	<u>40135.00</u>			
Inspector Name	Cert No			

<u>Mulch</u>			<u>2021/9/21</u>	<u>AEC</u>
Type of Material			Date Delivered	Delivered to (Name of Contractor/Subcontractor)
<u>Profile Products, LLC</u>			<u>0.00</u>	<u>n/a</u>
Source of Material (Manufacturer or Fabricator)			Quantity Rejected	Rejection explanation/reason
<u>3.50</u>	<u>acre</u>	<u>3.50</u>	<u>C993+50, It</u>	
Quantity Delivered	Unit	Quantity Received	Where Inspected	
<u>3.50</u>		<u>2.50</u>	Flexterra HP-FGM.	
Total Received to Date	Estimated Total Required			
<u>David Butler</u>	<u>40135.00</u>			
Inspector Name	Cert No			

<u>Seed</u>			<u>2021/9/21</u>	<u>AEC</u>
Type of Material			Date Delivered	Delivered to (Name of Contractor/Subcontractor)
<u>Sunmark</u>			<u>0.00</u>	<u>n/a</u>
Source of Material (Manufacturer or Fabricator)			Quantity Rejected	Rejection explanation/reason
<u>3.50</u>	<u>acre</u>	<u>3.50</u>	<u>C993+50, It</u>	
Quantity Delivered	Unit	Quantity Received	Where Inspected	
<u>3.50</u>		<u>2.50</u>	Test Results & calcs. Lot#SSI-OR126FE#2-AEC	
Total Received to Date	Estimated Total Required			
<u>David Butler</u>	<u>40135.00</u>			
Inspector Name	Cert No			

Type of Material			Date Delivered	Delivered to (Name of Contractor/Subcontractor)
Source of Material (Manufacturer or Fabricator)			Quantity Rejected	Rejection explanation/reason
Quantity Delivered	Unit	Quantity Received	Where Inspected	
Total Received to Date	Estimated Total Required			
Inspector Name	Cert No			

OR126: SHOULDER WIDENING
SEEDING AREA
CONTRACT#: 15222
EA#: CON04342
BI#680 = 2.25 ACRES
BI#690 = 3.50 ACRES
AREA DERIVED FROM INROADS





Pay Note (New Field Inspection)
(Project Work Record)

Region 1 Bike Ped Crossings Project BI0710 13 03 15286
Project Name Bid/Pay Item Estimate Pay Note Contract

Materials Delivered for this Project

Signs, Standard Sheeting, Sheet Aluminum 20221014 Brown/JBL
Type of Material Date Delivered Delivered to (Name of Contractor/Subcontractor)
3 - M Company 0.00 N. A.
Source of Material (Manufacturer or Fabricator) Quantity Rejected Rejection explanation/reason
18.00 ft^2 18.00 Job Site
Quantity Delivered Unit Quantity Received Where inspected
266.00 250.00 Henry Ng 40710
Total Accepted to Date Estimated Total Required Inspector Name Cert. #

Contractor performed work, & supplied materials meeting all the requirements of Section 940 of the Standard Specifications, Special Provisions, and Contract Plans. ODOT materials inspection stickers are adhered to the back of every sign showing they have been inspected and passed.

Remarks

Materials Delivered for this Project

Type of Material Date Delivered Delivered to (Name of Contractor/Subcontractor)
Source of Material (Manufacturer or Fabricator) Quantity Rejected Rejection explanation/reason
Quantity Delivered Unit Quantity Received Where inspected
Total Accepted to Date Estimated Total Required Inspector Name Cert. #

Remarks

Materials Delivered for this Project

Type of Material Date Delivered Delivered to (Name of Contractor/Subcontractor)
Source of Material (Manufacturer or Fabricator) Quantity Rejected Rejection explanation/reason
Quantity Delivered Unit Quantity Received Where inspected
Total Accepted to Date Estimated Total Required Inspector Name Cert. #

Remarks

754-2005 (Revised July 2021)

Example 7



**Pay Note
(Project Work Record)**

Project Information					
OR99W: Corvallis Stormwater System	CON04400	011	05	01	15272
<small>Project Name</small>	<small>EA</small>	<small>Subjob</small>	<small>Estimate</small>	<small>Pay Note</small>	<small>Contract</small>
THERMOPLASTIC, EXTRUDED, SURFACE, NON-PROFILED	0390	Steven Schultz PE	Chris Weigel		
<small>Item Description</small>	<small>Bid/Pay Item</small>	<small>Resident Engineer</small>	<small>Prepared by</small>		

Method of Quality Assurance					
Quality Documentation*		F - Field Inspection Report (FIR)			QPL
<input type="checkbox"/> E	<input type="checkbox"/> O	New*	Previous	Estimate	Pay Note
<input checked="" type="checkbox"/> L (Report #) <u>22000902</u>	<input type="checkbox"/> BG	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u> </u>	<u> </u>
<input type="checkbox"/> I (Report #) <u> </u>	<input type="checkbox"/> R	<input type="checkbox"/>	<input type="checkbox"/>	<u> </u>	<u> </u>
<input checked="" type="checkbox"/> W	<input type="checkbox"/> P/R	<input type="checkbox"/>	<input type="checkbox"/>	<u> </u>	<u> </u>
<input type="checkbox"/> P	<input type="checkbox"/> Q	<input type="checkbox"/>	<input type="checkbox"/>	<u> </u>	<u> </u>
<input type="checkbox"/> M	<input type="checkbox"/> T	<input type="checkbox"/>	<input type="checkbox"/>	<u> </u>	<u> </u>
<input type="checkbox"/> Small Quantity	<input type="checkbox"/> Field Tested Material	<input type="checkbox"/>	<input type="checkbox"/>	<u> </u>	<u> </u>
<small>*Click on letters for definitions.</small>		<small>*Enter on New Field Inspection Information page below.</small>			<input type="checkbox"/> No QPL
					<input checked="" type="checkbox"/> QPL - Approved
					<input checked="" type="checkbox"/> QPL - Qualified
					QPL # <u>5062</u>
					QPL # <u>3893</u>
					QPL # <u> </u>
					QPL # <u> </u>
					Future QPL # <u> </u>

Quantity Data			
<u>0.000</u>	<u>FOOT</u>	<input type="checkbox"/> Remeasurement	<u>20220803</u>
<small>Previous Quantity</small>	<small>Unit</small>		<small>Installation Date</small>
<u>135.000 (+ or -)</u>		<input checked="" type="checkbox"/> Measured in Place Method	<u>20220803</u>
<small>Quantity This Note</small>		<input type="checkbox"/> Partial Payment	<small>Item Completion Date</small>
<u>135.000</u>		<input type="checkbox"/> Material on Hand (see Material on Hand page below)	
<small>Total Quantity to Date</small>			
Calculations and/or Remarks			

Pay 135 Feet for street-side parking markings.
Installed at Sta. "H4" 406+60 to "H3" 300+00

WARRANTY AND REFLECTIVITY REPORTS RECEIVED 8/26/2022.

No Quality Documentation Required Photos Attached Illustration Attached

Reviewed by			
Len Saltekoff	08/25/2022	Len Saltekoff	08/25/2022
<small>Quality Checked by</small>	<small>Date</small>	<small>Quality Checked by</small>	<small>Date</small>



**Pay Note (New Field Inspection)
(Project Work Record)**

OR99W: Corvallis Stormwater System	0390	05	01	15272
Project Name	Bid/Pay Item	Estimate	Pay Note	Contract

Materials Delivered for this Project

Reflective Elements	20220803	SPM
Type of Material	Date Delivered	Delivered to (Name of Contractor/Subcontractor)
Swarco	0.00	n/a
Source of Material (Manufacturer or Fabricator)	Quantity Rejected	Rejection explanation/reason
135.00 ft 135.00	on site	
Quantity Delivered Unit Quantity Received	Where Inspected	
135.00 120.00	Chris Weigel	43924
Total Accepted to Date Estimated Total Required	Inspector Name	Cert. #

The THERMOPLASTIC, EXTRUDED, SURFACE, NON-PROFILED is accepted visually and are in compliance with spec 00865 of the 2021 Oregon Standard Specifications for Construction and this project's Special Provisions.

Remarks

Materials Delivered for this Project

Thermoplastic striping	20220803	SPM
Type of Material	Date Delivered	Delivered to (Name of Contractor/Subcontractor)
Alta	0.00	n/a
Source of Material (Manufacturer or Fabricator)	Quantity Rejected	Rejection explanation/reason
135.00 ft 135.00	on site	
Quantity Delivered Unit Quantity Received	Where Inspected	
135.00 120.00	Chris Weigel	43924
Total Accepted to Date Estimated Total Required	Inspector Name	Cert. #

The THERMOPLASTIC, EXTRUDED, SURFACE, NON-PROFILED is accepted visually and are in compliance with spec 00865 of the 2021 Oregon Standard Specifications for Construction and this project's Special Provisions.

Remarks

Materials Delivered for this Project

Warranty	20220826	Wildish
Type of Material	Date Delivered	Delivered to (Name of Contractor/Subcontractor)
Traffic Solutions-Alta All Season 100-PT	0.00	NA
Source of Material (Manufacturer or Fabricator)	Quantity Rejected	Rejection explanation/reason
135.00 ft 135.00	On site	
Quantity Delivered Unit Quantity Received	Where Inspected	
135.00 120.00	Chris Weigel	43924
Total Accepted to Date Estimated Total Required	Inspector Name	Cert. #

Reflectivity Report and test tapes submitted

Remarks

Example 8-9

Source document ("paynote") for compliant ADA Curb Ramp and Push Button work is paynote form 734-2605, with applicable ADA Curb Ramp Inspection Forms (734-5020A-H) and/or ADA Push Button Inspection Forms (734-5245A-B) attached as supporting documentation.

Additionally, the RE will send a copy of the inspection form to the email listed in the inspection form instructions.

Send the Inspection forms as each ramp is accepted and paid for, rather than at the end of the project. If any ramp needs to be reconstructed, send in the final inspection form after corrections have been made. Contact the CAU or [ADA Program](#) and choose Assets & Inspections for guidance.

Example 8



Pay Note (Project Work Record)

Project Information					
US101: Garrison Slough - Cemetery Lp Rd (Port Orford)	CON04469	011	03	02	C15358
<small>Project Name</small>	<small>EA</small>	<small>Subjob</small>	<small>Estimate</small>	<small>Pay Note</small>	<small>Contract</small>
EXTRA FOR NEW CURB RAMPS	0640	Don Duey	Josh Courtright	51393	
<small>Item Description</small>	<small>Bid/Pay Item</small>	<small>Resident Engineer</small>	<small>Prepared by</small>		

Method of Quality Assurance																																					
<p>Quality Documentation*</p> <p><input type="checkbox"/> E <input type="checkbox"/> O</p> <p><input type="checkbox"/> L (Report #) _____ <input type="checkbox"/> BG</p> <p><input type="checkbox"/> I (Report #) _____ <input checked="" type="checkbox"/> R</p> <p><input type="checkbox"/> W <input type="checkbox"/> P/R</p> <p><input type="checkbox"/> P <input type="checkbox"/> Q</p> <p><input type="checkbox"/> M <input type="checkbox"/> T</p> <p><input type="checkbox"/> Small Quantity <input type="checkbox"/> Field Tested Material</p> <p><small>*Click on letters for definitions.</small></p>	<p>F - Field Inspection Report (FIR) Tracking</p> <table border="1"> <thead> <tr> <th>New*</th> <th>Previous</th> <th>Estimate</th> <th>Pay Note</th> <th>Link (opt.)</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td>_____</td><td>_____</td><td>_____</td></tr> </tbody> </table> <p><small>*This box is not the FIR - New Field Inspection page(s) must be completed!</small></p>	New*	Previous	Estimate	Pay Note	Link (opt.)	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	<p>QPL</p> <p><input checked="" type="checkbox"/> No QPL</p> <p><input type="checkbox"/> QPL - Approved</p> <p><input type="checkbox"/> QPL - Qualified</p> <p>QPL # _____</p> <p>QPL # _____</p> <p>QPL # _____</p> <p>QPL # _____</p> <p>Future QPL # _____</p>
New*	Previous	Estimate	Pay Note	Link (opt.)																																	
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Quantity Data			
Previous Quantity	1.000	EACH	<input type="checkbox"/> Remeasurement
Quantity This Note	1.000 (+ or -)		<input checked="" type="checkbox"/> Measured in Place Method
Total Quantity to Date	2.000		<input type="checkbox"/> Partial Payment
Calculations and/or Remarks			<input type="checkbox"/> Material on Hand (see Material on Hand page below)

No Quality Documentation Required Photos Attached Illustration Attached

Reviewed by			
Quality Checked by	Date	Quality Checked by	Date



ADA Curb Ramp New Construction Inspection Form (Parallel)

Project Name (Section) **GARRISON SLOUGH-CEMETERY LP RD (PORT ORFORD) SECTION**

Construction Year **2022** Contract No. **C15358** Highway No. **0090010**

MP **301.34** Cross Street Name **DEADY ST**

Calibration Date **10/26/22** (mm/dd/yy)

See Exhibit A for more intersection styles

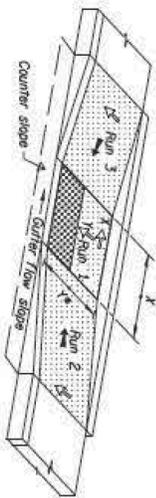
Ramp Style **PL**

Functional Condition Description:
 Good (G) = all applicable boxes pass OR a Design Exception addresses criteria that do not pass.
 Poor (P) = any applicable box fails

Physical Condition Description:
 Good (G) = the concrete within the Pedestrian Circulation Area (includes flares and path back to existing sidewalk) contains no cracks or deformations
 Poor (P) = any part of the concrete within the Pedestrian Circulation Area (includes flares and transition panels) contains cracks or deformations

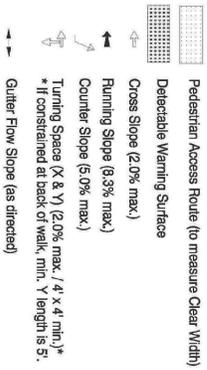
*The passing value for Gutter Flow Slope (GFS) depends on the Intersection Condition Type. At a Midblock (MB), GFS must be ≤ Slope of the Road at Signalized or Uncontrolled (SU), GFS must be ≤ 5.0%, and at Stop or Yield (SY), GFS must be ≤ 2.0%.

See also Standard Drawings to assess provisions not shown: (inlets, alignment, etc.)

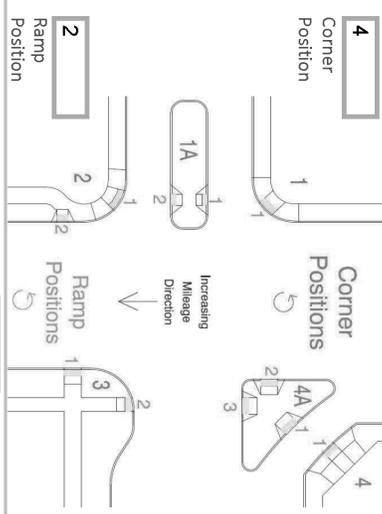


PARALLEL RAMP (PL)

PARALLEL RAMP (PL)



Item	Pass	Fail	DE
RAMP RUN 1			
Running Slope 1	1.4 <input checked="" type="checkbox"/> ≤ 2.0%	<input type="checkbox"/> > 2.0%	<input type="checkbox"/>
Cross Slope 1	1.9 <input checked="" type="checkbox"/> ≤ 2.0%	<input type="checkbox"/> > 2.0%	<input type="checkbox"/>
Detectable Warning	TD <input checked="" type="checkbox"/> (TD, X)	<input type="checkbox"/> (N, I, TD, DMG TD)	<input type="checkbox"/>
Lip Height	0 <input checked="" type="checkbox"/> 0"	<input type="checkbox"/> > 0"	<input type="checkbox"/>
Gutter Flow Slope	1.5 <input checked="" type="checkbox"/> ≤ *	<input type="checkbox"/> > *	<input type="checkbox"/>
Curb Running Slope (avg)	1.6 <input checked="" type="checkbox"/> ≤ 8.3%	<input type="checkbox"/> > 8.3%	<input type="checkbox"/>
Counter Slope (+/-)	3.9 <input checked="" type="checkbox"/> ≤ 15.0%	<input type="checkbox"/> > 15.0%	<input type="checkbox"/>
RAMP RUN 2			
Running Slope 2	8.0 <input checked="" type="checkbox"/> ≤ 8.3%	<input type="checkbox"/> > 8.3%	<input type="checkbox"/>
Length 2	7.9 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cross Slope 2	1.7 <input checked="" type="checkbox"/> ≤ 2.0%	<input type="checkbox"/> > 2.0%	<input type="checkbox"/>
RAMP RUN 3			
Running Slope 3	6.3 <input checked="" type="checkbox"/> ≤ 8.3%	<input type="checkbox"/> > 8.3%	<input type="checkbox"/>
Length 3	6.0 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cross Slope 3	1.9 <input checked="" type="checkbox"/> ≤ 2.0%	<input type="checkbox"/> > 2.0%	<input type="checkbox"/>
TURN SPACE			
Width X	5.0 <input checked="" type="checkbox"/> ≥ 4.0'	<input type="checkbox"/> < 4.0'	<input type="checkbox"/>
Length Y	6.4 <input checked="" type="checkbox"/> ≥ 4.0'	<input type="checkbox"/> < 4.0'	<input type="checkbox"/>
Back of Ramp Obstruction (Y/N)	Y <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Slope X (Cross Slope 1)	1.9 <input checked="" type="checkbox"/> ≤ 2.0%	<input type="checkbox"/> > 2.0%	<input type="checkbox"/>
Slope Y (Running Slope 1)	1.4 <input checked="" type="checkbox"/> ≤ 2.0%	<input type="checkbox"/> > 2.0%	<input type="checkbox"/>
MISCELLANEOUS			
Clear Width (feet)	5.0 <input checked="" type="checkbox"/> ≥ 4.0'	<input type="checkbox"/> < 4.0'	<input type="checkbox"/>
Intersection Condition Type	SU <input type="checkbox"/>	Slope of Road 1.3	<input type="checkbox"/>
Design Ex. Control Number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Physical Condition (G, P) **G**

Function Condition (G, P) **G**

CRK Fail DE

DO Fail DE

EXP Fail DE

GB Fail DE

ICRR Fail DE

INLET XING Fail DE

STR Fail DE

FT BT Fail DE

Comment:
 See also Standard Comments for Full list of acceptable comments

Inspector's Signature **JOSH COURTRIGHT** Date (mm/dd/yy) **10/26/22**

Print name clearly **JOSH COURTRIGHT** Certification No. **51393**

ODOT **3811** Crew No. (ODOT)

Company/Agency

12D-3 Review Process for Quantity Documentation

A. Review by RE

The RE must review each source document as it is prepared to verify that documentation and calculation methods are proper and correct.

Steps in the review procedure for quantity documentation include:

- Assure that required dates, signatures, Contract numbers, locations, etc. are included on each original source document. Also, assure that the Work has been charged to the proper Participation Indicator (sub-job).
- Prepare and include two (2) adding machine tapes or alternate summation method for all Weigh Memos, tickets, and Material receipts to verify that all individual quantities are included in the summation. Assure that the required date, signature, and Contract number are included on adding machine tapes, computer-generated source documents, and summaries.
- Assure that a separate person has checked all formulas and calculations and has also signed and dated the documents.
- When Material is paid for by volume of hauling vehicle, include measurements of the hauling vehicle and calculate the volume for each hauling vehicle. The person measuring the vehicle and calculating the volume must sign and date the document.
- When conversion factors have been used to compute pay quantities, assure that documentation of the conversion factors is included. The person calculating the conversion must sign and date the document.
- Verify that proper and correct formulas and procedures were used in each computer-generated source document and spreadsheet to calculate quantities. Computer calculated quantities must be documented with the original field measure notes along with input and output printouts.
- Compare the calculated quantity of each item to the bid quantity and resolve significant differences.
- Ask the theoretical question on each item: "Does this quantity seem appropriate for the Work that was actually done on the Project?"
- Assure that all Work has been included in the calculated quantity and that the calculated quantity does not include inappropriate areas, volumes, or quantities. This may

require some independent verification of quantities. For earthwork volumes, refer to the Measurement of Earthwork discussion in Section 12D-1(j).

- Check all lump sum quantity adjustments and supporting documentation.
- Verify and submit final quantities on a Quantity Ledger Report.

B. Review by Region Assurance Specialist (RAS)

The RAS will periodically review all Project quantity documentation. The frequency of those reviews will be planned and will depend on Project size, duration, complexity, and the RE's experience in administering ODOT construction Contracts.

The RAS will review and provide guidance in quantity documentation procedures used to support payments to the Contractor, including:

- Source document must be on file
- Lump sum schedules for progress payment of lump sum items
- Flagger and Pilot Car Receipts or similar format
- Sprinkling Tally Sheets or similar format
- Accurate, easy to follow measurement and calculation methods
- Calculations and calculation methods checked by a second person
- Proper source document validations
- For quantities paid by weight, padded Material receipts with adding machine tapes, or acceptable alternate method, summarizing the total quantities.
- Scale Diary, including scale certification and license
- For a complete list of items requiring cost justification for quantity overruns, refer to Chapter 15-2.
- Quantity price adjustments
- Material on Hand (MOH) payments

At the time of the periodic Project review, the RAS will review the quantity documentation to determine whether it fulfills the Contract requirements and supports the payments that have been made to the Contractor. The RAS will report any deficiencies to the RE. The RAS will also address the noted deficiencies and their resolution at the next scheduled periodic review.

The RAS will list the following on the Documentation Review Report, form 734-1903 regarding quantities:

- Agreement to resolution of calculations that are done in a manner different from that specified by the Contract, or from that normally accepted by ODOT, and
- Calculations for which the RE and RAS are unable to agree on the acceptability of the calculation or method.

For acceptance of final Project documentation, refer to Chapter 37 - Submittal of Final Project Documentation.

