Materials Certification Guide for LGA/LAP Projects

The purpose of this manual is to provide guidance and direction to Local Municipalities and their representatives relating to the receiving, testing, sampling and documentation of construction materials, as well as the Final Project Certification. All materials are not represented in this guide. Please contact your local Department representative, M&T, or Quality Systems Group.

Materials and Tests
Quality Systems Service Group

Shannon Poole
srburns1@ncdot.gov

Daniel Bailey
dbailey@pacepllc.com

Pam Carriker
pcarriker@ncdot.gov

Denise DelSanto
DDelSanto@sepiinc.com

Randy Pace
rpace@pacepllc.com

Sam Frederick
sjfrederick@ncdot.gov

2020

WHAT IS A LOCALLY-ADMINISTERED PROJECT (LGA)?

LGA programs and projects receive federal or state money based on the recommendations of Municipal or Rural Planning Organizations (MPOs and RPOs), NCDOT Program Areas, and Board of Transportation Members. LGAs are responsible for carrying out the design, construction and administration of projects, or implementation of programs. The program is also referred to as a Locally Administered Project (LAP).

WHAT IS NCDOT'S ROLE?

NCDOT's role is to advise, approve and oversee the proper expenditure of funds by an LGA on an eligible project or program. NCDOT is committed to establishing appropriate oversight in order to ensure the best use of public funds and compliance with all applicable state and federal regulations.

WHAT IS M&T's ROLE?

The Materials and Tests Unit will audit project documents to complete a ***Materials Certification***. This is referred to as the **Final Project Certification** within the Locally Administered Project Municipality agreement.

MATERIAL CERTIFICATION (FINAL PROJECT CERTIFICATION)

Materials Certification is the process by which the NCDOT certifies that all materials and workmanship on all projects are in compliance with the specifications. The Quality Systems Section within the Materials and Tests Unit (M & T) is responsible for conducting the material review to ensure that accurate and sufficient documentation is available to verify the acceptable testing and inspection of materials and products used to build the project. It is recommended the Materials Review begin within ten days after the "Acceptance Date" The following is a limited list of items that will be reviewed:

- Final Contract Pay Request
- Sampling and Testing in accordance with the Minimum Sampling Guide (MSG)
- Independent Assurance
- QC/QA Programs
- Certified Laboratories and Sampling and Testing Technicians
- Alternate ID's
- Material Receipts/Bill of Lading
- Material Certifications
- "Buy America" Letter
- Inspection Reports

All qualified technicians involved with sampling and testing of materials must hold current appropriate NCDOT certification for the applicable testing and inspections they are performing.
Material documentation is required for each line item representing a material received (temporary or permanently). All materials used for LGA/LPA projects are considered **critical** and must meet the documentation requirements.

REVIEW PROCESS (SUMMARY)

The **Contractors Final Pay Request** is used to review final materials and quantities received to complete the project. Documentation must be retained and available to review to account for the quantities paid to the contractor. Discrepancies based on quantity paid, quantity approved and quantity unapproved are documented.
Testing, sampling and acceptance of material is also evaluated. Discrepancies based on improper sampling, frequency, results and acceptance are documented.
The LGA has 3 weeks to clear any discrepancies. **Remaining discrepancies are considered non-participating materials.**

WHAT ARE DISCREPENCIES?

"Shortages" and "exception" of materials will be documented. Shortages are detailed records connecting to materials which did not receive the required number of sampling and/or testing. Exceptions occur when representative materials are utilized but not in accordance with specifications. Exception materials are typically supplied by unapproved sources and/or meet close conformity. Exceptions also include materials which no required documentation was retained in order to review. The Materials and Tests Unit will identify "Non-Participating" costs due to improper sampling/testing procedures, absence of tests reports, uncertified materials, shortages, or materials not meeting the required specifications. NCDOT will not be able to provide reimbursement or "non- participating" costs.

MRR (Materials Received Report)

The Material Received Report (MRR) (M&T Form 251) must be completed when any material received on the project is to be incorporated into the construction on a temporary or permanent basis. This documentation is necessary to ensure that all materials are tested and meet the requirements of Division 10 of the Specifications.

Exceptions – Material items that are delivered and accompanied by a ticket with a Weigh Master stamp, such as Quarried Materials and Asphalt. The tickets will be placed in a Ticket Book as the source documentation for the product. (ABC, Ready Mixed Concrete, Materials used in Ready Mixed Concrete, and Asphalt.

Minimum Sampling Guide – lists materials that are pretested and materials that are to get sampled by project personnel. The Minimum Sampling Guide can be accessed from the Materials and Tests home page. https://apps.ncdot.gov/vendor/approvedproducts/MinimumSamplingGuide.aspx

SUPPORTING DOCUMENTATION

Most material items that are delivered to the project will be accompanied by a Bill of Lading, Invoice or Packing Slip. This documentation should clearly identify the item as well as the quantity that was received.

Contractors will need to furnish a material certification for certain material items that are incorporated into the project.

These type of material certifications can be found in Section 106-3 of the Standard Specifications for Roads and Structures.

Materials should be listed on the NCDOT Approved Products List (APL). A material certification is still required for material on the APL.

Materials Received Reports

Inspectors will fill in the **MRR Reports** each day for any material is received on the project.

Field Information

Please refer to the table which will help you while entering the column information in the report.
Attachments – Please add any attachments like photos, pdf's by clicking **+ Add**

Column Name	Description	Example
Attachments **+ Add**	Please add any attachments like photos of the materials or a photo or pdf of the invoice.	
Project No	TIP number associated with the project	U-4726DD
Report No	A unique identifier for this MRR. Normally, you should just add 1 to the latest MRR in the list to create the next one.	14
Date received	Today's date is automatically selected. Please change if needed.	12/01/2017
MRR*	A unique identifier for this MRR. Normally, you should just add 1 to the latest MRR in the list to create the next one.	14
Line Item	Enter the line item (line code) for this project that these materials will be applied against.	012
Material & Type Info	Enter the type of material received.	PAINT
UOM	Scroll through available choices for unit of measure and select the applicable one. Fill in a new one only if the applicable one was not shown.	GAL
Quantity	Enter the quantity of materials received, using the specified unit of measure.	3025
Prod/Supp/Manuf	Provide the Producer / Supplier/ Manufacturer of the material.	ENNIS-FLINT
Alt/ID/Plant ID	Enter the Alternate ID/ Plant ID, if applicable.	BOL 3767360 WHITE: 1375 GAL (VP1606W0668) YELLOW: 1650 GAL (VP1606Y0771)
All Certifications Received	Indicate if all required certifications were received.	Yes
Other Identifying Info	Add any other identifying information, if applicable.	5/16-18 x 3 A-307A HEX BOLT GALVENIZED
Remarks	Enter any additional remarks about the material.	PAINT BY GALLONS FOR PAINT PAVEMENT MARKINGS
By	Inspector to sign	MRR

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS UNIT
RALEIGH, NORTH CAROLINA 27607

REPORT OF MATERIAL RECEIVED

Project No._____ Report No._ _____ Date Received_____

Contractor. _____

MATERIAL & TYPE, GRADE OR CLASS	LINE ITEM #	ALTERNATE ID/ PLANT ID	OTHER IDENTIFYING INFORMATION	QUANTITY & UOM	Producer/ Supplier/ MFG.	All Certifications Received	Remarks

BY_____ BY_____

RESIDENT ENGINEER TECHNICIAN/INSPECTOR

INSTRUCTIONS: This report must be completed each day any material is received on the project. All material shall be completely identified, and the quantity reported must be accurate. Test reports on pre-tested material will be furnished only upon receipt of a material received report. Each test report furnished will carry the material received report number for proper identification. All materials received must be reported except the following: (1) A.B.C. , (2) Ready-Mixed concrete, (3) Materials used in Ready-Mixed concrete, (4) Asphalt Concrete mixtures. DISTRIBUTION: Original for Resident Engineer's file, one copy to the Materials and Tests Unit, and one copy to Division Engineer.

Below are resources and links to NCDOT standards, lists and guides. The lists or materials mentioned may not represent all the material, testing or sampling process and requirements.

2012 NCDOT Standard Specifications Manual
https://connect.ncdot.gov/resources/Specifications/Pages/2012StandSpecsMan.aspx

2018 NCDOT Standard Specifications Manual
https://connect.ncdot.gov/resources/Specifications/Pages/2018-Specifications-and-Special-Provisions.aspx###

NCDOT Roadway Standard Drawings
https://connect.ncdot.gov/resources/Specifications/Pages/2018-Roadway-Standard-Drawings.aspx

Minimum Sampling Guide (MSG)
The Minimum Sampling Guide (MSG) lists typical material types. This Guide displays how materials are received, method of acceptance and certifications required. The LGA can use this resource for reviewing contractors pay estimates; however, the project certification for LGA project is always **Critical**, therefore, the certification type always applies. An MSG list is included in this guide to assist identifying **some** materials.
Resource: https://apps.ncdot.gov/vendor/approvedproducts/MinimumSamplingGuide.aspx

Certified Construction Technicians
The LGA will provide Technicians to inspect and document the construction of the project. Specific items of work including the placement of asphalt and concrete and testing of certain materials such as soil and aggregate base course materials require certifications by the Department. It is the responsibility of the LGA to make sure that individual Technicians are thoroughly familiar with the contract requirements and NCDOT certified for the various phases of work which they are called upon to inspect.
Resource: https://apps.ncdot.gov/vendor/approvedproducts/Technician.aspx

Buy America
2012 Standard Specifications for Roads and Structures Section 106-1B
For LGA projects, all steel, iron, and manufactured products must include a certification statement from the contractor that the items provided for incorporation into the project were produced in the United States, including raw materials. The individual documents certifying the products are in accordance with this requirement should be maintained with the material test results and be available for audit or project material certification upon completion of the project.

Approved Producer/Supplier
Producers and Suppliers are pre-approved to produce and/or supply materials to NCDOT. Facility Types include but are not limited to; Asphalt Plants, Cast Iron, Concrete Plants, Guardrail, Brick and Block, Rebar Coaters, Metal Pipe. Use the resource link to view the complete list. The list is updated daily. It is recommended to check the list prior to purchasing materials from approved producers/suppliers. Producers and Suppliers are removed from the approved list. The LGA is responsible for monitoring the approved list.
Resource: https://apps.ncdot.gov/vendor/approvedproducts/Producer.aspx

Approved Products List (APL)
The Approved Products List is a database of pre-approved products available to construction for use on NCDOT projects. These products have been evaluated to ensure the product is viable for use by performing a detailed review of product specifications, technical data, test results and, monitoring the products durability and performance. The list is not a blanket for approval. All products are still subject to all other project requirements and should be used in conjunction with the MSG, NCDOT Standard specifications for Roads and Structures, and plans.
Resource https://apps.ncdot.gov/vendor/approvedproducts/Default.aspx

Precast Concrete and Prestressed Concrete RFID Lookup (Alternate ID Look Up)

Precast Concrete and Prestressed Concrete must come from an approved Producer/Supplier. Precast producers do not only produce for NCDOT. The LGA needs to ensure that the material being produced/supplied by the approved producer/supplier is also NCDOT approved. RFID tags are cast in all pieces produced for NCDOT. The piece is visually inspected by a Materials and Tests representative at the precast facility. After passing a visual inspection, the RFID tag cast into that piece is scanned, accepted and a FIR (field inspection report) is created in the NCDOT HiCAMS system. If the piece does not pass a visual inspection, the RFID tag is still scanned but it is rejected. The FIR is still created in HiCAMS but the status will be rejected. Depending on the visual discrepancy, the producer can choose to destroy the piece or sell it as a non NCDOT piece. It is the responsibility of the LGA to ensure all Precast Concrete pieces are accepted for NCDOT use. The Precast Concrete ID/Barcode (RFID tag) can be entered and verified by following the Resource link. The LGA should also retain the Bill of Lading from the producer and ensure all RFID tag numbers are documented to satisfy the material certification process. Precast RFID look up guide is attached to this guide.

Resource: https://apps.ncdot.gov/vendor/approvedproducts/PrecastLookup.aspx

Concrete Pipe

Concrete Pipe must come from an approved Producer/Supplier. Concrete Pipe producers do not only produce for NCDOT. The LGA needs to ensure that the material being produced/supplied by the approved producer/supplier is also NCDOT approved. The producer stamps all pipe with an Alternate ID, (CPxx-xx-xx).

The pipe is visually inspected by a Materials and Tests representative at the concrete pipe facility. After passing the visual inspection, the pipe is stamped NCDOT approved. If the pipe does not pass a visual inspection, the pipe is not stamped NCDOT approved. Depending on the visual discrepancy, the producer can choose to destroy the pipe or sell it as a non NCDOT piece. It is the responsibility of the LGA to ensure all pipe is stamped NCDOT approved. The LGA should also retain the Bill of Lading from the producer and ensure the Alternate ID & NCDOT approved stamp is documented on the Bill of Lading in order to satisfy the material certification process.

Structural Timber and Lumber

In accordance with Section 1082

All timber or lumber must be pre-inspected by an M&T approved independent inspection agency. The inspection firm will hammer mark, die stamp or tag each piece of acceptable timber or lumber with their unique mark. Silver "M&T" numbered tags are no longer used.

An industry standard commercial inspection report must accompany each shipment of timber or lumber. M&T no longer has inspection reports on file.

In addition, an industry standard treatment test report for treated lumber must accompany each shipment of treated timber or lumber. M&T no longer has test reports on file.

These inspection reports may be on the same sheet of paper.

Report the size, quantity, inspection report number and the wood producer on the MRR. Forward this information to M&T along with the supplied inspection reports.

Approved Timber Product Inspection Companies

A. W. Williams Inspection Co., Inc
P.O. Box 2107
Mobile, AL 36601
Phone: 215-438-3691

HRV CONFORMANCE VERIFICATION
200 Hightower Blvd.,
Pittsburgh, PA 15205
Phone: 412-788-2522

BUREAU VERITAS NORTH AMERICA INC
Foster Plaza XI
790 Holiday Drive
Pittsburgh, PA 15220
Phone: 412-503-4105

Timber Products Inspection, Inc.
P.O. BOX 919,
Conyers, GA 30012
Phone: 770-922-8000

QPL (ITS AND SIGNALS QUALIFIED PRODUCTS LIST)

The ITS and Signals Qualified Products List (ITSS QPL) contains traffic signal equipment and material standards that are approved for use on contract projects on the North Carolina State Highway System. All signal and traffic management equipment, materials, and hardware should be pre-approved and on the QPL list by the day of installation. The QPL listing does not replace a material certification. Reference 2018 Standard Specifications for Roads and Structures section 1098 to be aware of the materials that require a material certification in addition to the QPL approval.

A Bill of Lading for signal equipment, materials, and hardware must be provided from the supplier.

The line item number from the bill of materials MUST be marked on the Bill of Lading in order to satisfy the material certification process.

The applicable QPL listing must be provided for all signal equipment, materials, and hardware on the bill of material.

The line item number from the bill of materials must be marked on the QPL listing to satisfy the material certification process.

Signal equipment, materials, and hardware requiring a material certification as stated in section 1098 of the NCDOT spec book, must be provided and marked with the line item number from the bill of materials to satisfy the material certification process.

Be aware the QPL list may be updated once a month during the first week of the month.

Introduction to Online QPL link
https://connect.ncdot.gov/resources/safety/Pages/QPL-Introduction.aspx
QPL database link
https://connect.ncdot.gov/resources/safety/Pages/ITS-and-Signals-Qualified-Products.aspx
ITS and Signals Qualified Products List
https://apps.ncdot.gov/products/qpl/

Cast Iron (grates, frames, hoods, manhole rings and covers)

Currently there are two companies supplying casting for NCDOT work, US Foundry and East Jordan Ironworks. Each piece is paint stamped indicating the casting is acceptable for use. The stamp indicates the casting has passed quality control procedures. If a casting has a stamp on it, it is acceptable for use on NCDOT work.

- U.S. Foundry (CI2) stamp- USF NC DOT
- East Jordan Ironworks (CI3, CI5 & CI10) stamp- NCDOT EJIW QC

Casting will have either “Made in the USA” or “USA” cast in them. In addition, they will have a date cast in them. The date, along with the foundry ID number is the alternate ID. The alternate ID will be the “Lot Number”. To satisfy the material certification process for Cast Iron materials, you will need to provide:

- A Bill of Lading from either East Jordan Ironworks or US Foundry
- a material certification which will include a reference to the foundry, alternate ID, and/or lot number

Reinforcing Steel – Rebar

Reinforcing steel must come from a NCDOT approved producer/supplier. This includes expoxy coated reinforcing steel, reinforcing steel-stainless, coated rebar and dowel baskets. Requirements must be met for material acceptance. Reinforcing steel must be ASTM A615, Grade 60. Concrete pavement tie bars should be ASTM A615, Grade 40. Other grades of steel may be required by Special Provision.

- The shipment of reinforcing steel shall come from a Department approved reinforcing steel (RS##) producer/supplier.
- All reinforcing steel must meet the following requirements:
    - Buy America Act
    - Provide a ***type I certified mill test*** report for each size and heat number of reinforcing steels supplied.
- A completed ***Materials and Tests Unit Form 913***. The Form 913 must include the Department approved Facility ID number.
- The quantities on the Form 913 must match or exceed the quantities of each size of reinforcing bar reported on the corresponding Material Received Report (MRR).
- If the shipment does not include a Form 913, project personnel must take a sample of each size of reinforcing steel in the shipment. Please contact the Materials and Tests Unit before accepting this material.

Coated Reinforcing Steel:

Each shipment of epoxy coated reinforcing steel can be accepted by using the following:

- The shipment of coated reinforcing shall come from a Department approved rebar coating (RC##) producer/supplier.
- All reinforcing steel must meet the following requirements:
    - Buy America Act
    - Provide a ***type 1 certified mill test*** report for each size and heat number of reinforcing steels supplied.
- All shipments of coated reinforcing steel will include a ***Form 913, Form ER-02***, production documentation, and inspection documents with the Department approved facility ID number.
- If the shipment does not include a Form 913 and Form ER-02, Project personnel must take a sample of each size of reinforcing steel in the shipment. Please contact the Materials and Tests Unit before accepting this material.

Tickets Issued for Payment By Weight (Quarry material and Asphalt)

https://connect.ncdot.gov/projects/construction/Pages/RRMan.aspx?Order=RR-26

Upon delivery of materials paid for by weight, the Contractor should immediately give the weight ticket to the construction technician performing the inspection.

Upon receipt, the construction technician should make sure the ticket is legible and the following information has been listed on the ticket:

The Department Contract Number/WBS Number.
The date the ticket is issued.
The time the ticket is issued if the material is asphalt plant mix or plant mixed cement treated base course.
The type of material represented by the weight ticket.
The gross weight of the vehicle.
The tare weight of the vehicle.
The net weight of the material.
The location of the quarry or plant where the material came from.
The number of the truck transporting the material.
The name of the prime Contractor for the project.
The stamp or number of the public weighmaster weighing the material.
The signature or initials of the public weighmaster **in ink or electronic.**
The appropriate Job Mix Formula (JMF) number for the asphalt plant mix.

Upon determining that all required information has been furnished on the weight certificate, ***the Inspecto***r should then list the following information on the ticket:

Contract Number/WBS Element Number if not shown on the ticket.
WBS Element Number if different from that shown on the ticket.
Contract item number by which material will be paid.
Location where the material was placed.
Date the material was placed if it is different from the date the ticket was issued, such as erosion control stone stockpiled on a previous date anticipating inclimate weather.
Construction Technician's signature on the first ticket for the day and initials on subsequent tickets.
Quantity reduction for unused portion of material and reason should be shown clearly on the ticket.
The time the ticket is received for asphalt plant mix or plant mixed cement treated base course.

Ticket Book
Tickets for each day should be bound separately with the total for the day shown on the front cover.

As with any material, whether it is pre-approved or not, if any problem is found by field, contractor, LGA or inspector personnel, the material can be rejected at any time. M&T personnel can be contacted if any questions arise or any assistance is needed.

Other Resources are available on the Materials and Tests Webpage
https://connect.ncdot.gov/resources/Materials/Pages/default.aspx

NCDOT Department of Transportation Construction Manual
https://connect.ncdot.gov/projects/construction/pages/construction-manual.aspx

Concrete Mix Designs

Contractor should submit concrete mix design form 312U prior to proposed use as stated in Section 1000-4(A).

Retain the form and place with laboratory test results.

Concrete mix designs are submitted via email to – concretedesigns@ncdot.gov

To check the status of an approved concrete mix design, email – concretedesigns@ncdot.gov If you have any questions or concerns, please contact Ben Chola at 919-329-4122

Approved Concrete Mix Design Look up

https://engblp.services.ncdot.gov/EAS/CMD/Main.aspx

Asphalt

Contractor should submit a copy of the asphalt mix designs prior to proposed use. See Section 610-3. Retain the form and place with QC and QA test reports.

Final Voucher Date/Records Retention

After reimbursement request has been processed and all paperwork accepted, FHWA will issue a Final Voucher. The Division will provide the Final Voucher Date to the municipality/town as the start of the required Records Retention period.

All records shall be maintained by the municipality/town, not the contractor or the Professional Engineering Firm that provided construction administration.

The minimum Records Retention Period is five (5) years from the Final Voucher date. Projects are subject to audit by Federal Agencies (FHWA) for a minimum of three (3) years after acceptance of the project, and by State Agencies for a minimum of five (5) years. The municipality/town will be responsible for providing reasonable access to all project records for audit or review during the entire retention period.

1446B

1446B is mentioned within the attached checklist. The is the FHWA Final Acceptance Report. This is a FHWA and NCDOT form. This form is filled out and signed by Division representative and the State Materials Engineer. The LGA is not responsible for this form.

NCDOT Materials & Tests LGA Material Review Checklist

This checklist is utilized by NCDOT M&T and their representative when completing the material certification process (final project certification). It is included in this guide as a reference for the municipality and/or CEI firm to assist you with ensuring the required documentation is retained and in order. This is only a guide and does not represent all materials that may have been used to complete a project.

Contractor Furnished Certification

Explanation of Material Certification Types is attached.

Modified MSG

Modified Minimum Sampling Guide for Greenways and Multi-Use Paths

Modified Minimum Sampling Guide (MSG) for Greenways and Multi-Use Paths

9-17-13

MSG Group	How Accepted	Additional Requirements	Other
Aggregate	Must come from a plant on the NCDOT Approved List and participating in the Aggregate Quality Control/Quality Assurance Program.	Roadway Assurance is Optional for Aggregate Base Course	92% (Nuclear or Conventional) for Aggregate Base Course
Asphalt	Must come from a plant on our approved list and participating in the NCDOT Quality Management System; Must use a NCDOT Approved Mix Design and Job Mix formula that has been used on a NCDOT project.	610-9 revised mix per QMS	Compaction – 85% every 5,000 ft., minimum of one per project
Cementious Materials	Must come from a NCDOT approved source; Type 3 certification		
Concrete (Class B only)	Must come from a concrete plant on the NCDOT Approved List. Must use a Concrete Mix Design that has been used on a NCDOT project. Project specific mix approval is not required.	Minimum of one set of cylinders per project to test compressive strength	All other classes per Standard MSG
Fencing Materials	Type 6		Buy America
Grading	N/A (Sampling and /or Visual)	Visual Inspection plus minimum of one embankment density and one subgrade density per project	Embankment 90%, subgrade 92%
Guardrail	Must come from plant on the NCDOT Approved List	Guardrail marking should be visually inspected to ensure that it came from NCDOT approved source	Buy America
Landscape	Type 6 Certification		
Paints and Coatings	Type 3, Type 4, Type 6		

Modified Minimum Sampling Guide (MSG) for Greenways and Multi-Use Paths (con't.)

MSG Group	How Accepted	Additional Requirements	Other
Pipe	Drainage – NCDOT Approved Plant, NCDOT stamped, tagged, sticker. Water/Sewer Type 3 certification or Type 6	Product markings should be visually inspected to insure that it came from NCDOT approved source	Buy America
Precast	Must come from a NCDOT Approved Plant. NCDOT stamped, tagged or stickered; For Incidental items only need Type 6	Product marking should be visually inspected to insure that it came from NCDOT personnel	Buy America
Prestress	Must come from NCDOT Approved Plant and be NCDOT stamped	Field Inspection Report conducted at plant by NCDOT personnel	Buy America
Steel	Various req. NCDOT Approved Producers, Type1, Type 3, Type 4, Type 6		Buy America
Traffic Control	Type 3, Type 4, Type 7		
Utilities	Type 3, Type 6		By America

CONTRACTOR FURNISHED CERTIFICATION

NCDOT Standard Specifications

Section 106-3

The Contractor shall furnish the North Carolina Department of Transportation material certifications obtained from the producer, supplier, or an approved independent testing laboratory for the following types of materials, unless otherwise directed by the Engineer.

- Materials required to meet criteria documented by tests that are normally performed during the production process.
- Materials that are required to meet specifications other than those published by AASHTO, ASTM, or the Division of Highways.
- Materials produced at locations that are not within routine travel distance for Department representatives.
- Materials required to meet criteria documented by tests involving special equipment not readily available to Department representatives.
- Any other special material when so directed by the Engineer.
- And…..

- Material certifications of one of the following types shall be furnished for pre-tested materials. The specific type of material certification for each material shall be in accordance with the schedule maintained by the Materials and Tests Unit.
  - Type 1 – Certified Mill Test Report
  - Type 2 – Typical Certified Mill Test Report
  - Type 3 – Manufacturer's Certification
  - Type 4 – Certified Test Report
  - Type 5 – Typical Certified Test Report
  - Type 6 – Supplier's Certification
  - Type 7 – Contractors' Certification

How do I know the Contractor gave me the correct certification type?

Material Certification is a process that provides reasonable assurance that all aspects of its acceptance have been satisfactorily completed and the materials incorporated are in close conformance to the Departments specifications. A statement identifying conformance is issued as a *material certification.*

Each Certification Type has specific wording or statements making it unique, and distinguished from each other.

If you receive a certification that does **Not Contain** the **required wording or statement**, you more than likely have The **wrong certification**.

Type 1 – Certified Mill Test Report

A certified mill test report shall be a **certified** report of **tests** conducted by the **manufacturer** on samples taken from the **same heat** or **lot** number as the material **actually shipped** to the project. The report shall identify the heat or lot number.

- Examples - Reinforcing steel (plain & epoxy), engineering fabric, fertilizer.

Type 2 – Typical Certified Mill Test Report

A typical certified mill test report shall be a certified report of tests conducted by the manufacturer on samples taken from a lot which is typical of the material actually shipped to the project, but which may or may not be from the lot shipped.

- Examples - Reinforcing steel (plain & epoxy), engineering fabric, fertilizer

Type 3 – Manufacturer's Certification

A manufacturer's certification shall be a certified statement that the material actually shipped to the project was manufactured by production processes that are periodically and routinely inspected to assure conformance to specification requirements.

Examples: paint markings, junction box, fiber optic cable, inductive loop

Type 4 – Certified Test Reports

A certified test report shall be a certified report of tests conducted by an approved independent testing laboratory on samples taken from the same heat or lot number as the material actually shipped to the project. The report shall identify the heat or lot number.

Examples - thermoplastics, timber piles, pavement markings, glass beads

Note: This certification type is similar to a Type 1, except the tests conducted are by an approved independent testing lab, not the manufacture

Type 5 – Typical Certified Test Reports

A certified test report shall be a certified report of tests conducted by an approved independent testing laboratory on samples taken from a lot which is typical of the material actually shipped to the project, but that may or may not be from the lot shipped.

Example - emulsified asphalt, lighting and electrical material

Note: This certification type is similar to a Type 2, except the tests conducted are by an approved independent testing lab, not the manufacture.

Type 6 – Supplier's Certification

A supplier's certification is a signed statement by the supplier that the material described in the certification is of the specification grade required and that the supplier has on hand Type 1 or Type 2 material certifications to cover the material that is included in the Type 6 supplier's certification.

Example - cement, planting & landscape materials

Type 7 – Contractor's Certification

Contractor's certification is a signed statement by a contractor that the used material described in the certification meets the current specifications to the best of the contractor's knowledge and that the contractor had in his possession at the time of purchase a Type 1 or Type 2 material certification to cover the material that is included in the Type 7 Contractor's Certification.

Example - traffic control barricades & barriers

Miscellaneous Certifications

North Carolina Department of Agriculture (NCDA) Certificate Of Inspection	Section 1060 – Landscape Materials
Domestic Steel Certification	Section106-1 B
M&T Form 913	Section 1070 – Reinforcing Steel
M&T Form ER02	Epoxy Coated Re-Bar shipping report
Timber & Wood Products A.W. Williams Inspection Company	Section 1082

A material certification is NOT a submittal, specification sheet, technical data sheet or a brochure. An acceptable material certification must have a current date as well as an official signature.

Typically, a certification dated within 2 years of the contract let date is acceptable to account for stockpile materials and project delays.

NCDOT Materials & Tests LGA Project Material Review Checklist

TIP#

This form is used by a M&T representative when completing the material certification process. It is provided to you as a reference. This is only a guide and does not represent all materials that are used to complete a project.

GENERAL

	Yes	No	N/A	Comments
List of Materials (Contractor's Final Pay Estimate)	☐	☐	☐	Must include quantities and unit price- Section 101-3; 1-6
Buy America Guarantee (notarized)	☐	☐	☐	Section 106-1B
Letter of Accountability	☐	☐	☐	
Copy of notes & worksheets	☐	☐	☐	

ASPHALT

	Yes	No	N/A	Comments
Asphalt Facility Name NCDOT#	AS#			
Is the Asphalt Facility NCDOT approved	☐	☐	☐	
Approved JMF?	☐	☐	☐	
Was Density testing done? ☐Density Gauge ☐Core	☐	☐	☐	☐QC testing ☐QA testing ☐Irregular areas
Did they meet specifications?	☐	☐	☐	Table 610-7
Active QC Roadway Technician (name, certification #, expiration date)	☐	☐	☐	
Active QA Roadway Technician (name, certification #, expiration date)	☐	☐	☐	
Asphalt roadway inspection report (form 605)	☐	☐	☐	
Original weight tickets with all required technician information – inspectors signature/initials, station number, location, temperature, line code, etc.?	☐	☐	☐	
Asphalt tickets were signed/stamped by NC Weight Master?	☐	☐	☐	Section 106-7

Additional Asphalt Comments:

CONCRETE

	Yes	No	N/A	Comments
Ready Mix Facility Name & NCDOT#	RM#			
Is the Ready-Mix Facility NCDOT Approved?	☐	☐	☐	
Approved concrete mix design?	☐	☐	☐	312 form on file?
Were samples taken to meet sampling frequency?	☐	☐	☐	
Did the samples meet specifications?	☐	☐	☐	
Active certified batching/ testing technician (name, certification #, expiration date)	☐	☐	☐	NCDOT PCT#
903 forms on file for **all** concrete received?	☐	☐	☐	
Is the **top** and **bottom** portion of the 903-form filled out completely?	☐	☐	☐	
M&T 250 form?	☐	☐	☐	
Are ALL the above documents on file?	☐	☐	☐	
Truncated Domes/Curb Ramps Section 848-2	☐	☐	☐	
Are the domes/ramps on the NCDOT approved Products list?	☐	☐	☐	
Receipt to verify quantities?	☐	☐	☐	
Material certification	☐	☐	☐	Material and coating specifications must be stated in the Manufacturers Type 3 cert

Additional Concrete Comments:

AGGREGATE

	Yes	No	N/A	Comments
Does all Aggregate come from a NCDOT approved facility- Name and CA# or FA#	☐	☐	☐	CA# FA#
Are tickets signed/stamped by NC Weight Master?	☐	☐	☐	
Original weight tickets with all required technician information – inspectors signature/initials, station numbers, location, line code, etc.	☐	☐	☐	
Was ABC utilized requiring compaction? QC/QA compaction requirements met?	☐	☐	☐	Rdwy – 98% Trail – 92%

Grading – Compaction

	Yes	No	N/A	Comments
AASHTO T99 test results for compaction %				
Rdwy Embnkmt – Compctn results 95%	☐	☐	☐	
Rdwy Subgr – Compctn results 100% within 8”	☐	☐	☐	
Trail Embnkmt – Compctn results – 90%	☐	☐	☐	
Trail Subgr – Compctn results – 92% within 8”	☐	☐	☐	
Test frequency per specifications	☐	☐	☐	

Concrete Pipe (spec book Section 1032-6A-E)

	Yes	No	N/A	Comments
Concrete Pipe Producer name and NCDOT#	CP#			
Concrete Pipe Producer currently on the NCDOT approved list?	☐	☐	☐	
Bill of Lading provided?	☐	☐	☐	
Alternate ID noted on the original Bill of Lading?	Alt-ID			
Was the inside of pipe stamped NCDOT APPROVED	☐	☐	☐	It is not DOT pipe if it is not stamped

Precast (spec book Section 1077)

	Yes	No	N/A	Comments
Precast Concrete Producer name and NCDOT#	PC#			
Precast Producer currently on the NCDOT approved list?	☐	☐	☐	
Bill of Lading **from the Producer** provided?	☐	☐	☐	
RFID tag cast into piece? Did the producer provide a list of RFID numbers with the BOL?	☐	☐	☐	Look up the RFID to see if piece is available Alternate ID Lookup - https://apps.ncdot.gov/vendor/approvedproducts/PrecastLookup.aspx
RFID tag number documented on Bill of Lading.	☐	☐	☐	

Additional Precast Concrete Comments:

Prestress (spec book Section 1078)

	Yes	No	N/A	Comments
Prestress Producer name and NCDOT #	PS#			
Prestress Producer currently on the NCDOT approved list?	☐	☐	☐	
Bill of Lading **from the Producer** provided?	☐	☐	☐	
RFID tag cast into piece?	☐	☐	☐	Look up the RFID to see if piece is available Alternate ID Lookup - https://apps.ncdot.gov/vendor/approvedproducts/PrecastLookup.aspx
RFID tag number documented on Bill of Lading.	☐	☐	☐	

Other Manufactured Products

Did you receive any of the following:	Yes	No	N/A	Comments
Guardrail	☐	☐	☐	GR#
Guiderail	☐	☐	☐	GR#
Plastic Pipe	☐	☐	☐	PP#
Metal Pipe	☐	☐	☐	MP#
Brick & Block	☐	☐	☐	BB#
Segmental Retaining Wall	☐	☐	☐	SW#
Stay in Place	☐	☐	☐	SIP#

Is the Producer **currently** on the NCDOT Approved List? List name	☐	☐	☐	
Did the contractor supply a Bill of Lading & material certification?	☐	☐	☐	
Are the documents on file	☐	☐	☐	

Metals and Hardware

Gray Iron Casting - Frame, Grate, Hood, Manholes

(Spec book Section 1074)	Yes	No	N/A	Comments
Buy America Guarantee on all iron	☐	☐		
Metal Railing	☐	☐	☐	☐ Aluminum ☐ Steel
Certified Mill Test Report	☐	☐	☐	
Welded on-site	☐	☐	☐	Qualified Welder Provide NCDOT Welder ID Card
Reinforcing Steel - Rebar	☐	☐	☐	
Producer/Supplier	RS# RSS# RC# CRF# DB#			
Type 1 certified mill test report and M&T form 913	☐	☐	☐	Provide mill cert for each size and heat number received
ASTM Grade	☐ Grade 60 ☐ Grade 40			
Rebar coated?	☐	☐	☐	Form ER-02 required for coated
Frame and Grate and Hood	☐	☐	☐	☐ East Jordan Ironworks (CI#, CI5 & CI10) ☐ U.S. Foundry (CI2)
A record of the Alt ID/Lot Number to match the material on the Bill of Lading	☐	☐	☐	

Additional Iron – Steel – Metals Comments:

EROSION CONTROL (spec book Section 1056)

	Yes	No	N/A	Comments
Did the contractor supply a receipt for all erosion control material received (temporary and permanent)?	☐	☐	☐	
Did the contractor supply a material certification for the erosion control material received or provide proof of **NTPEP** approved (temporary and permanent?)	☐	☐	☐	Section 1056-3
Are the above documents on file?	☐	☐	☐	

Timber (spec book Section 1082)	Yes	No	N/A	Comments
Did you receive any timber/lumber?	☐	☐		
Did the contractor supply a receipt for the timber/lumber?	☐	☐	☐	
Did the contractor supply a material certification to comply with section 1082-4	☐	☐	☐	AWPA treatment and inspection required
Did contractor supply a Preservation Treatment Certification (1082-4)	☐	☐	☐	
Are the above documents on file?	☐	☐	☐	

Landscaping (spec book Section 1060-10)	Yes	No	N/A	Comments
Were plants, trees, shrubs (nursery stock) received?	☐	☐		
Provide NC Department of Agriculture Certification from the nursery suppling nursery stock or plants?	☐	☐	☐	NCDOT Department of Agriculture Certificate from the year of plant purchased.
Receipt for all landscape material (seed, mulch, fertilizer etc.) received, (temporary or permanent)	☐	☐	☐	
Orange NCDOT sticker from the bag?	☐	☐	☐	Seed Tag#

Miscellaneous Material	Yes	No	N/A	Comments
Thermoplastic Pavement Markings spec book Section 1086.	☐	☐	☐	
Receipt for Pavement Markings?	☐	☐	☐	
Material certification for Pavement Markings?	☐	☐	☐	
Signage spec book Section 1092	☐	☐	☐	
Receipt for all sign material	☐	☐	☐	
Material certification for sign material?	☐	☐	☐	
Material certification for 3M sign covering?	☐	☐	☐	Including 3Lb Steel U-Channel Post
Material certification for any coating?	☐	☐	☐	
Adjustments to meter boxes, valves, hydrants, man hole, catch basins etc.	☐	☐	☐	Was adjustment Labor Only or material utilized for adjustment?
Fencing – Chain link	☐	☐	☐	Bill of Lading required and material certifications. Producer may be on the Approved Producer/Supplier list or Material is on APL.
Utilities	☐	☐	☐	These materials often follow the Municipalities specifications. Materials should be received via invoice or BOL, Catalogue Cuts, materials certification when required and the municipalities approval of submittal.
Prefabricated Pedestrian Bridge	☐	☐	☐	Often a Lump Sum line item. Review major structure material BOL, invoices, certifications and material testing.

Signals – QPL (section 1098)	Yes	No	N/A	Comments
Receipt/BOL provided to verify quantities?	☐	☐	☐	
Line Item numbers marked on the receipt	☐	☐	☐	
QPL list provided with line item number marked	☐	☐	☐	

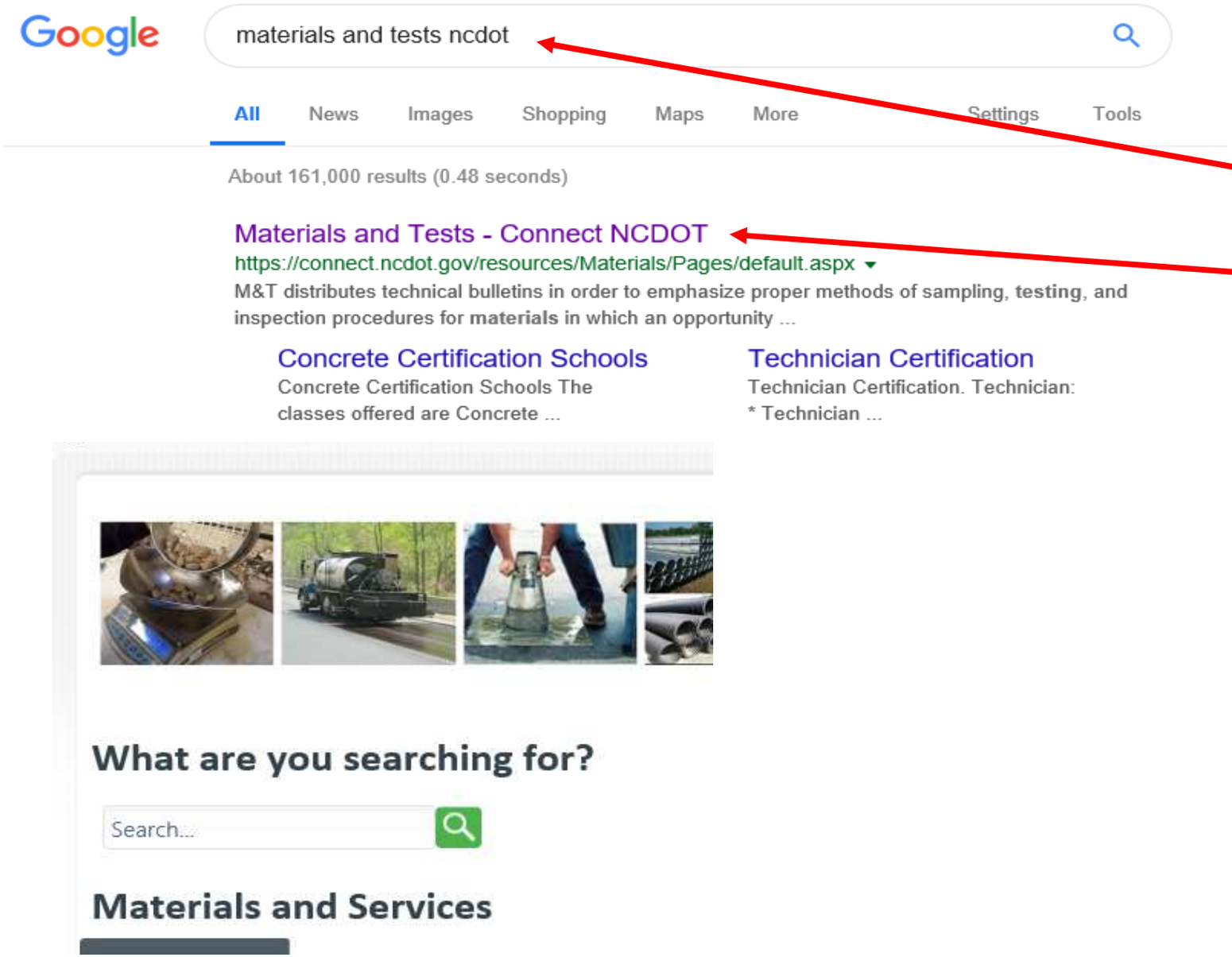
TRAFFIC CONTROL (spec book Section 1089)	Yes	No	N/A	Comments
Did the contractor provide the traffic control? (material and labor)	☐	☐	☐	
Was traffic control provided by a Subcontractor?	☐	☐	☐	
Did Traffic control devices comply with section 1101-1180? Are they on the approved products list?	☐	☐	☐	
Did contractor provide a type 3 or type 7 material certification in accordance with Section 1089?	☐	☐	☐	
FLAGGERS – Qualification Statement all flaggers are trained	☐	☐	☐	Section 1150
Are the above documents on file?	☐	☐	☐	

Laboratory and Technician Certifications	Yes	No	N/A	Comments
Was material tested at a third-party private laboratory?	☐	☐	☐	Name and address:
Is the laboratory AASHTO Accredited? (Need copy of certifications and tests approved to run)	☐	☐	☐	
Is the laboratory testing technician certified? (Need copy of the laboratory technicians' certifications)	☐	☐	☐	
Were all technicians utilized on project certified for the items they tested? (See A10 form)	☐	☐	☐	

*Private third-party testing laboratories must be approved by AASHTO Accreditation Program (AAP) in order to test materials. Each individual test standard must be approved. Concrete = T22, T23, ASTM C31, C617, C1231; Soils – T87, T88, T89, T90, T99 Density; Aggregates – T27, T89, T90, T180, T11, and T88 as modified by the Department. Asphalt – T30, T166, T209, T283, T305, T308, T312, ASTM 6752 AND ASTM 6857 as modified by the department.

A material certification is obtained from the producer, supplier or an approved independent testing laboratory that states the material received meet specifications set by the department based on 2018 NCDOT Standard Specifications for Roads and Structures. A material certification is **NOT a spec sheet, submittal or brochure about the material.*

RFID PRECAST LOOKUP

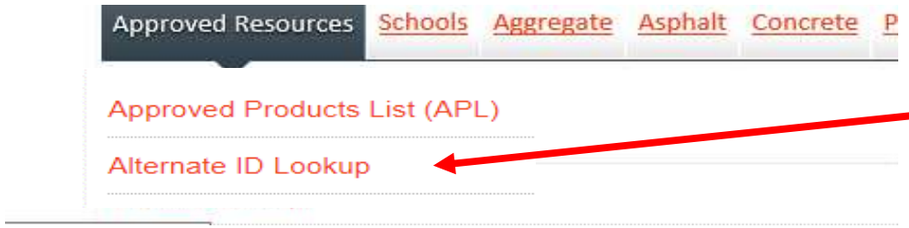


Materials and Tests Connect Homepage

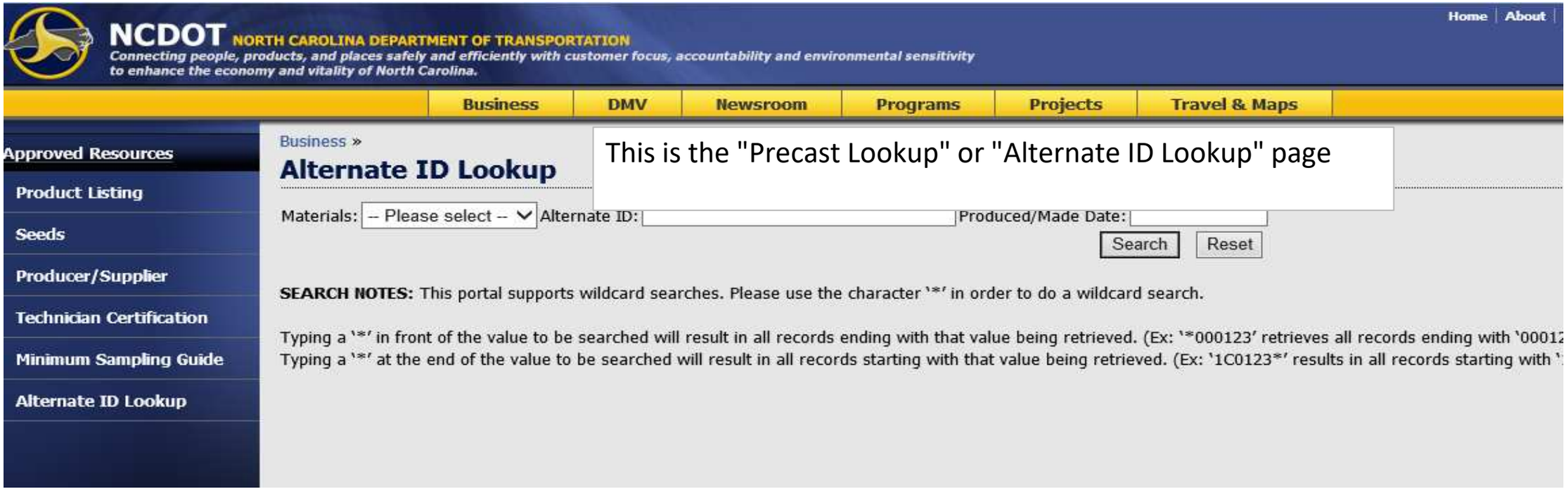
If you do not have the link this Google search works for me on any computer

I would recommend that anyone using this site regularly make it a favorite since the web address is so long

RFID PRECAST LOOKUP

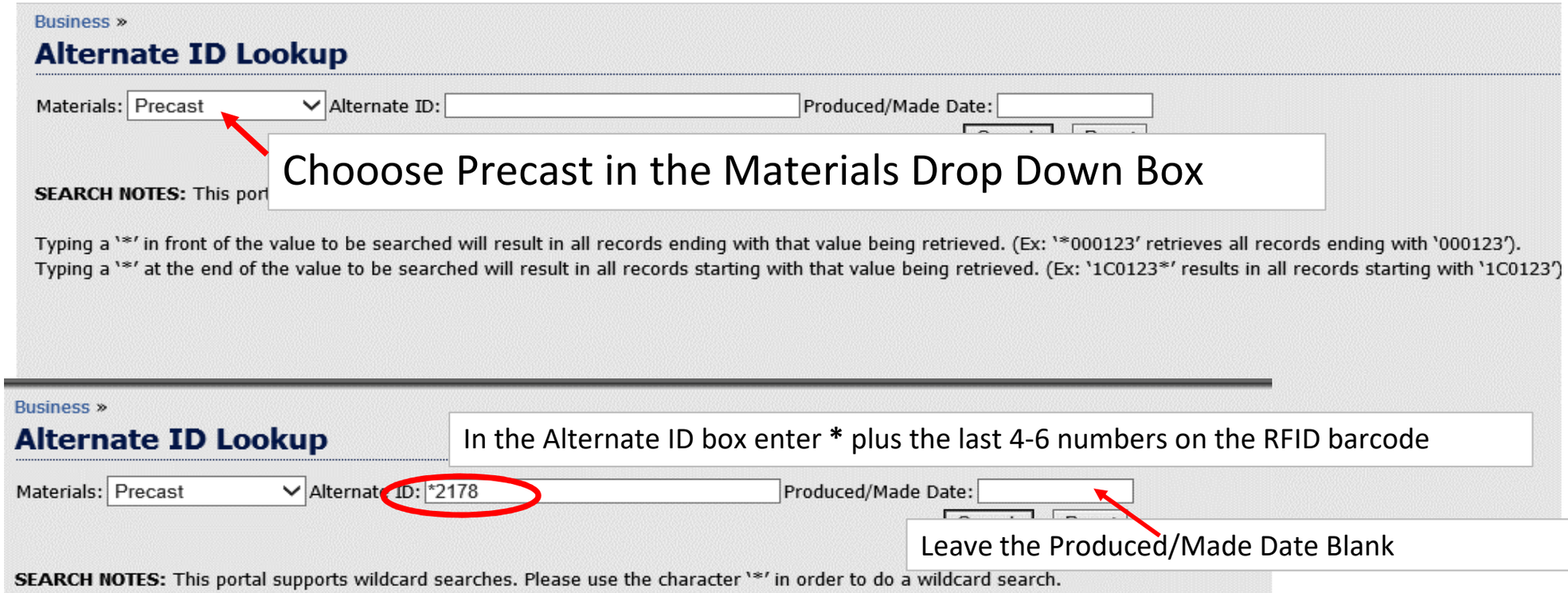


On the M&T Homepage, scroll down and click on "Alternate ID Lookup".



This is the "Precast Lookup" or "Alternate ID Lookup" page

RFID PRECAST LOOKUP



RFID PRECAST LOOKUP

The results list will provide you with the entire barcode number, if the piece is on a FIR and if it is Available.
A piece received on an LGA job must have an Alt ID Status of Available.
I have also circled some other interesting bits of information available in this results list with a BLUE circle.

Typing a '*' at the end of the value to be searched will result in all records starting with that value being retrieved. (Ex: '1C0123*' results in all records sta

Alternate ID	Report Type	FIR Report ID	FIR Status	Alt ID Type	Alt ID Status	Qty Available	Producer/Facility/Plant ID	Material	Inspector	Inspection Date
1C01270000000000000002178	Precast Concrete	47105	Authorized	Piece	Available	1	Cherry Contracting, Inc - Cherry Contracting - Winston Salem Plant - PC65	Precast Concrete Units P1 - B	Roy M. Wagoner	7/24/2013 12:00:00 AM
1C01440000000000000012178	Precast Concrete	65846	Authorized	Piece	Available	1	Cherry Contracting, Inc - Cherry Contracting - Winston Salem Plant - PC65	MSE Retaining Wall	Roy M. Wagoner	7/6/2016 12:00:00 AM
1C01440000000000000012178	Precast Concrete	65939	Authorized	Piece	Void	1	Cherry Contracting, Inc - Cherry Contracting - Winston Salem Plant - PC65	MSE Retaining Wall	Roy M. Wagoner	7/13/2016 12:00:00 AM
1C01500000000000000002178	Precast Concrete	64829	Authorized	Piece	Available	1	Mack Industries Inc. - Mack Industries Inc., of North Carolina - PC77	Precast Catch Basin	Bobby W. Watkins	5/17/2016 12:00:00 AM
1C01500000000000000012178	Precast Concrete	72953	Authorized	Piece	In Use	0	Mack Industries Inc. - Mack Industries Inc., of North Carolina - PC77	Precast Drainage Structure	James R. Raines	9/6/2017 12:00:00 AM
1C01500000000000000022178	Precast Concrete	79607	Authorized	Piece	Available	1	Mack Industries Inc. - Mack Industries Inc., of North Carolina - PC77	Precast Drainage Structure	Joseph A. Brewer	8/31/2018 12:00:00 AM

Concrete Placement Checklist

TIP Number:	WBS Number:	County:	Division:	Inspector:
Project Description:				
Placement Description:			**Date:**	

The following check list is to be utilized as a general guideline for placement of concrete on NCDOT projects. This list does not include special interest or project specific items – consult special/standard specifications and drawings.

PRIOR TO CONCRETE ARRIVAL ON-SITE

____ Verify you have a copy/access to the "Approved Mix Design".
____ Verify the Concrete Company who is supplying the concrete.
____ Verify the method of placement: Pumping Bucket Mixer Discharge Other
____ Confirm your concrete sampling transportation method (wheelbarrow, bucket) is adequate.
____ What are the acceptance test specifications for:
- ____ Concrete Class & Design Strength:
- ____ Slump:
- ____ Air Content:
- ____ Temperature of Concrete:
- ____ Number of Test Specimens (cylinders):

____ What are the acceptance test frequency for:
- ____ Slump:
- ____ Air Content (Chace):
- ____ Air Content (Air Pot/Volumetric):
- ____ Temperature:
- ____ Strength Test Specimens (cylinders):

____ Consult with the contractor regarding:
- ____ Structure description
- ____ Structure location
- ____ Time of placement
- ____ Location of concrete discharge and obtaining test samples
- ____ Duration of placement (total yardage and placement time)

____ Determine a safe location to perform concrete testing and inform the contractor.
____ Examine all testing equipment for accountability and condition.
____ Prepare testing area and set up equipment.
____ Review testing procedures – make sure you know how to perform the test.
____ When strength test specimens are required, establish the following:
- ____ Storage location -free from damage and vibration
- ____ Storage container (Initial Curing)- cylinder box, cooler, water bath, ???
- ____ Number of strength test specimens and storage specifications
- ____ Duration left in initial storage environment

WHEN CONCRETE ARRIVES ON-SITE

____ Receive and verify Form 903: make sure you have the correct concrete.

____ Receive and verify Form 250: make sure the concrete supplier has done their part.

____ Request the contractor to evaluate the concrete prior to discharge.

____ Allow the contractor to add any additional water/admixtures/materials/etc – **IT IS NOT THE RESPONSIBILITY OF THE INSPECTOR TO DETERMINE HOW MUCH WATER/ADMIXTURE IS TO BE ADDED TO THE LOAD. IT IS THE RESPONSIBILITY OF THE INSPECTOR TO NOT ALLOW THE MAXIMUM AMOUNT OF WATER BE EXCEEDED.**

____ If water is added, a minimum of 25 revolutions at mixing speed is to be performed.

____ If admixtures are added, a minimum of one gallon of water must be mixed with the admixture, and a minimum of 30 revolutions at mixing speed is to be performed.

____ After all additional on-site materials has been added and mixed, obtain your testing sample.

____ Prior to any testing, remix your sample thoroughly.

____ Perform and record required acceptance tests:

- ____ Chace Indicator
- ____ Temperature of Concrete
- ____ Slump
- ____ Air Content (pressure pot or volumetric)
- ____ Unit Weight (if required)
- ____ Strength Test Cylinders (if applicable)

____ Once concrete is accepted, no additional water, or admixtures/materials is to be added to the load. Confirm the water requirement did not exceed the maximum water amount (Line 9 on Form 903).

____ Complete Form 903 detailing every line- Documentation, Documentation, Documentation.

____ Clean testing equipment and area – prepare for next sampling/testing series.

____ Once all sampling/testing has been performed, maintain time parameters on concrete placement, and document activities.

WHEN CONCRETE PLACEMENT IS COMPLETE

____ Verify all documentation (Form 903, Form 250, notes, diaries, etc) is complete and accurate.

____ Make a quick equipment maintenance check – repair or replace any damaged equipment ASAP.

____ Place testing equipment into vehicle or storage area.

____ Prior to leaving the site; verify strength test cylinders are secure, at correct curing conditions, and will not encounter disturbance.

____ Inform Contractor of schedule for picking up strength test cylinders.

____ Determine next scheduled concrete placement.

____ Resume programmed duties and/or responsibilities.