**Materials & Tests Unit**


**NCDOT**

# Standard Operating Procedures for Inspection of Precast Concrete Units

Revised 4/17/2026

STATE OF NORTH CAROLINA
# DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

September 2023

SUBJECT: SOP for Precast Concrete Units

**Objectives:**
Consistent precast inspection parameters to ensure compliance of NCDOT Roadway Standard Drawings and Specifications. All Precast items permanently incorporated on NCDOT right of way are to be inspected and scanned as per the RFID program to ensure all pieces are available in HiCams. The technicians/inspectors will ensure quality control techniques, quality control records and testing equipment are being followed.

**Safety Equipment List:**
***(These items should be accessible to the Materials Inspection and utilized when needed or as directed by producer's safety policy)***

- Safety Shoes with ANSI Z 41 rating
- Hard Hat with ANSI Z89.1 rating
- First Aid Kit
- Fire Extinguisher
- Safety Glasses
- Gloves
- Safety Vest
- Ear Plugs
- Sun Block (optional)
- Dust Masks (optional)

**Safety Concerns:**

- Heavy Equipment/Backing Incidents – Vehicular hazards from producer and customers.

- Access to product for Inspection – Must be able to inspect precast piece from all sides. *Do not inspect if stockpiled in a dangerous manner.*

- Possible dusty conditions.

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NC DEPARTMENT OF TRANSPORTATION
MATERIALS & TESTS UNIT
1563 MAIL SERVICE CENTER
RALEIGH, NC 27699-1563

*Telephone:* (919) 329-4000
*Fax:* (919) 733-8742
*Customer Service:* 1-877-368-4968

*Website:* www.ncdot.gov

*Location:*
1801 BLUE RIDGE ROAD
RALEIGH, NC 27607

STATE OF NORTH CAROLINA
# DEPARTMENT OF TRANSPORTATION

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## Equipment Required for Precast Inspection:

- Precast Inspection Worksheet and/or Cylinder Break log
- Tape Measure
- Level/straight edge
- Micrometer
- Sample bags
- Plastic bags
- Calculator
- Tablet and Scanner
- Access to laptop or computer
- NCDOT Standard Drawing book or NCDOT Stamped Approved Drawings

## M&T Inspector's Duties for Precast Concrete Inspection:

1. Periodically review the guidelines for a Precast Concrete Unit inspection.
2. Periodically review NCDOT Standard Specifications Section 1077, 854 or 1090, Culverts: Contract Plans and AASHTO M 259 to ensure proper procedures are followed during inspection.
3. Periodically review the Precast SOP.
4. Ensure all equipment required for testing the material and any safety equipment needed is in possession and serviceable before arrival.
5. Is the facility/manufacturer an approved NCDOT producer? Is the NCDOT annual facility inspection up to date.
6. Does the facility have current third-party inspection? (NPCA or ACPA or PCI)
7. Inspector should verify the Producer has a current DOT Certificate of Approval
8. Inspector should verify the Facility Ownership is updated.
9. Inspector should verify the DOT addendum is available and updated.
10. Periodically review the guidelines for a Precast Concrete Unit inspection.
11. Inspector should check in to the facilities office when arriving for inspections as required.
12. NCDOT representative will verify facilities quality control technician has all the required NCDOT certifications required to produce Precast Units.
13. Inspector will verify the producers' testing equipment is calibrated within the year.
14. Inspector will verify that all scanned units are available in Idencia and HiCams.
15. Inspector will ensure Precast product is inspected and made available in a timely manner.
16. The Precast inspector must have most recent NCDOT Producer Production Report printed and ready for Inspector before beginning.
17. NCDOT inspector should verify information on report is accurate as per the NCDOT production report.
18. Then break cylinders for each cast made, if low breaks happen, the inspector shall contact the Precast Supervisor.
19. After breaks, begin to inspect/scan concrete members that are not stacked more the two high which should be separated and accessible in their yard.

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20. Verify tag numbers in tablet match NCDOT Production Product Report than press next in the process.
21. After concluding inspection, inspector must verify all data has transferred to the Field Inspection Report and has all necessary information listed.
22. The inspector must wait 24 hours to make sure all information has transferred over to HICAMS and a Field Inspection Report (FIR) has been created. Then the inspector should place the FIR into the Complete Status. Once this happens, the Precast Supervisor will authorize the FIR within 24 hours. Once authorized, the inspector will give the producer a copy of the authorized FIR for his records.

Verify the **Cast** row has no missing data in the *Air Content, Slump, Spread, Flow, Concrete Temp* and *Ambient Temp* fields. Check the pour date and approved concrete mix design has been entered.

**Print the report and take it with you to the plant.**

# NOTE: Any RFID Scanner used must be "Paired to your tablet/smartphone prior to scanning Precast items.

**Precast Member Rejections**

If the cylinder is still within the 28-day window, do not add any information into Idencia. At 28 days window if breaks pass then add passing breaks to Idencia.
Product that is non repairable, reject in Idencia and HICAMS.
Product that is repairable, leave in the rejected status until member has been repaired. Then go to HICAMS and find the FIR ALT ID and once repaired, change status to available, then change the report status to Complete.

**Products Shipped Without Inspection**

Guidelines found in Appendix F.

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Materials & Tests Unit

NCDOT

# PRECAST INSPECTION FORM

| Plant Name & ID: | | Date: | |
|---|---|---|---|

## I. General

Upon arrival, check in with appropriate plant personnel: _____

Review revisions to Company Safety Policy or Procedures that may have occurred since last visit. _____

Review list of products to be inspected. **Obtain copy to include with this report**: _____

Review Mill Certifications for reinforcing steel on file: _____

Verify reinforcing steel domestically manufactured: _____

Verify raw materials on-site correspond with mix design/s used: _____

## II. Concrete Testing

Note Mix Design/s to be tested: _____

Note Design Strength from Table 10077-1 or plans: _____

Note date of compression machine calibration: _____

Indicate curing method for cylinders: _____

Note certified Concrete Testing Technician name & #: _____

Did acceptance testing for slump, % air and temperature meet specifications? _____

### III. Finished Product Inspection

Did QC Technician perform & document pre-pour inspection? _____

Indicate type of reinforcement used: re-bar, wire, macro-synthetic? _____

Was steel placement verified by QC Technician prior to casting? _____

Was steel placement verified by NCDOT Inspector prior to casting? _____

Date of last steel placement verification (minimum 1 per quarter)? _____

Did QC Technician perform & document post-pour inspection? _____

Is NCDOT Inspection yielding greater than 20% rejection of products? _____

Is product stored according to Section 1077-4(A)? _____

Are products marked according to Section 1077-14 & NCDOT policy? _____

Are products marked in such a manner as to be **easily seen while loading and verified after installation** (exceptions would be wall faces)? _____

Are Traffic Bearing or Special Design pieces stamped "NCDOT APPROVED" in blue paint and/or designated as such? _____

### IV. Steel Placement Verification – (minimum once per quarter)

| | |
|---|---|
| Product Inspected- include NCDOT dwg # | |
| Verify Domestic Origin – name of mill | |
| Reinforcing Steel Type - A615 or A706 | |
| Reinforcing Size - record mill marks on re-bar | |
| Reinforcing spacing | |
| Cover between form & steel | |

**Comments:** _____

_____

_____

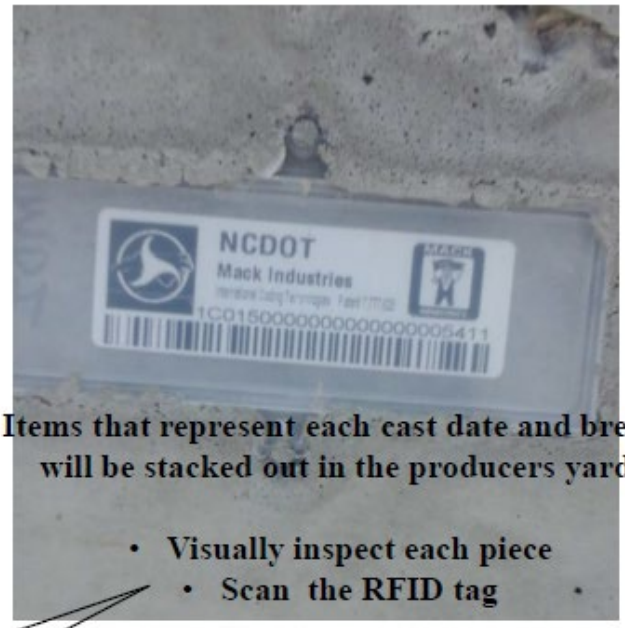
_____

**M&T Representative:** _____ **Title:** _____

# VISUAL INSPECTION

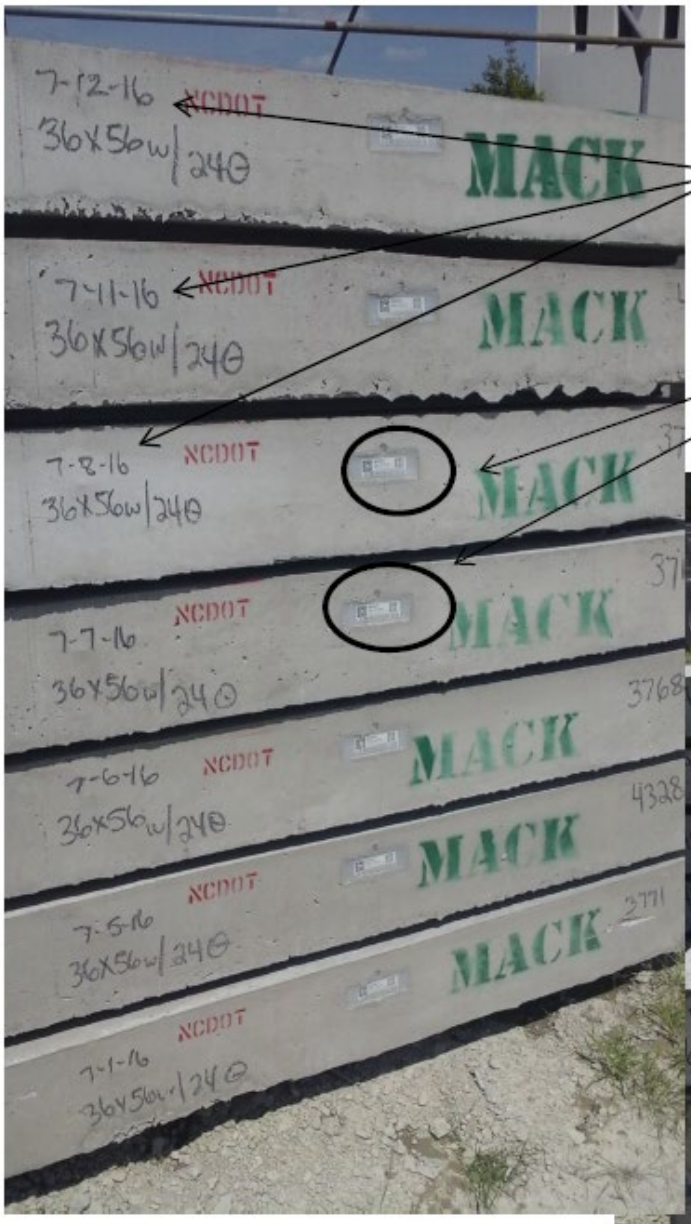
A visual inspection for precast items shall be conducted to ensure no steel of any kind is exposed. No cracks and minimal to no bug holes, chip, voids or honeycombing.

1. Proceed to the NCDOT inspection area of the producers' yard.
2. Perform a visual inspection followed by scanning the RFID tag of each piece.




**Items that represent each cast date and breaks will be stacked out in the producers yard.**

- **Visually inspect each piece**
- **Scan the RFID tag**

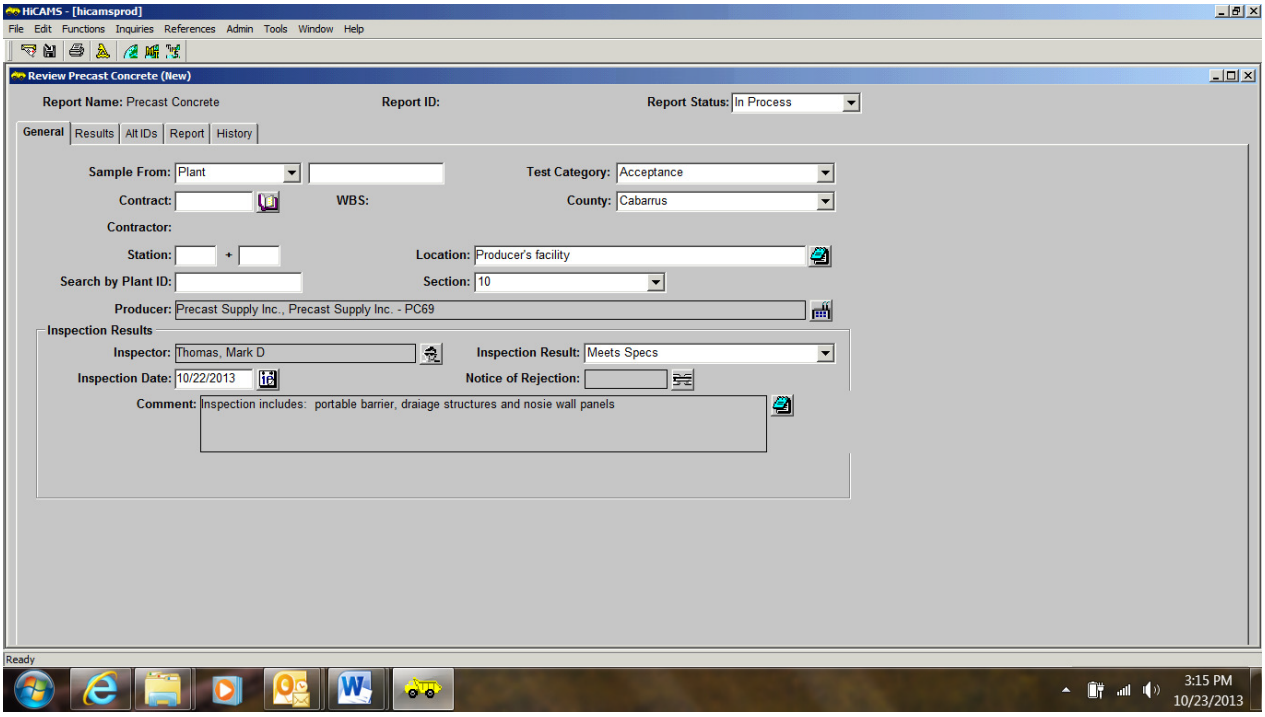



# Appendices

# Appendix A

## FIR / HiCAM'S Entry:

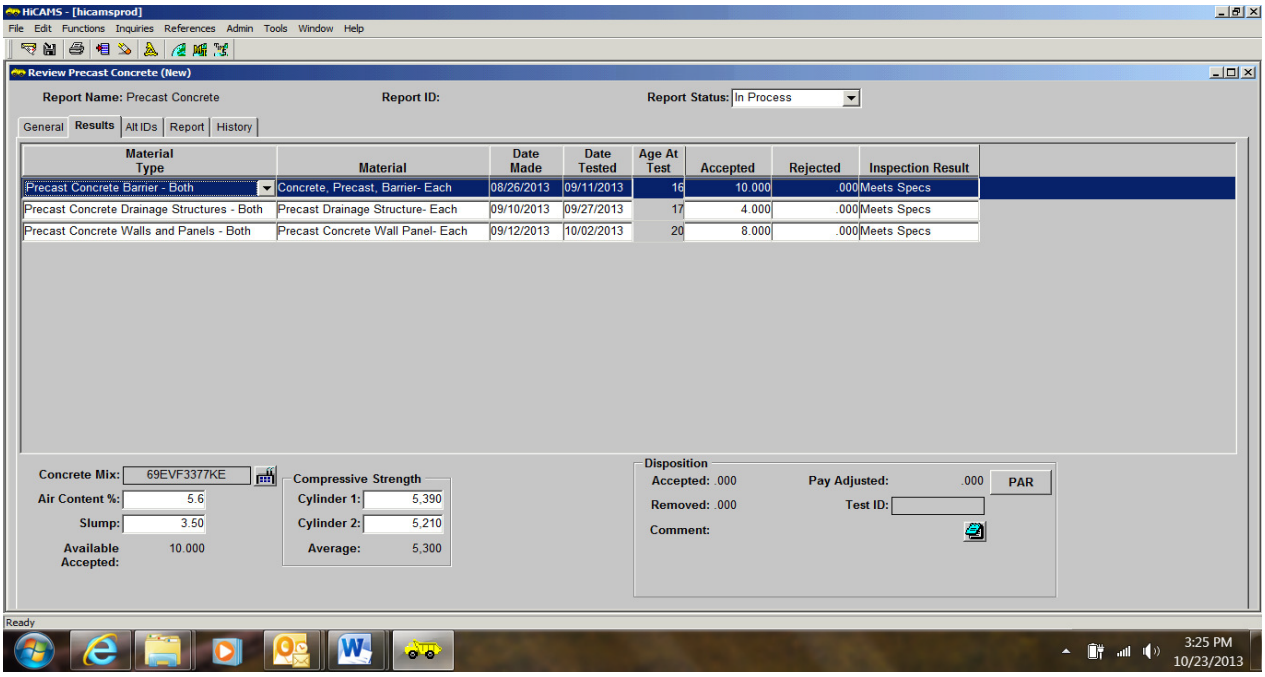
Logon onto HiCAM's:
Select: Functions
'Field Inspection Reports'
'Review Field Inspection Reports'
Under 'Report Name' select: 'Precast Concrete' and click on 'New' tab located far right.
Below is an example of information entered on 'General' tab:



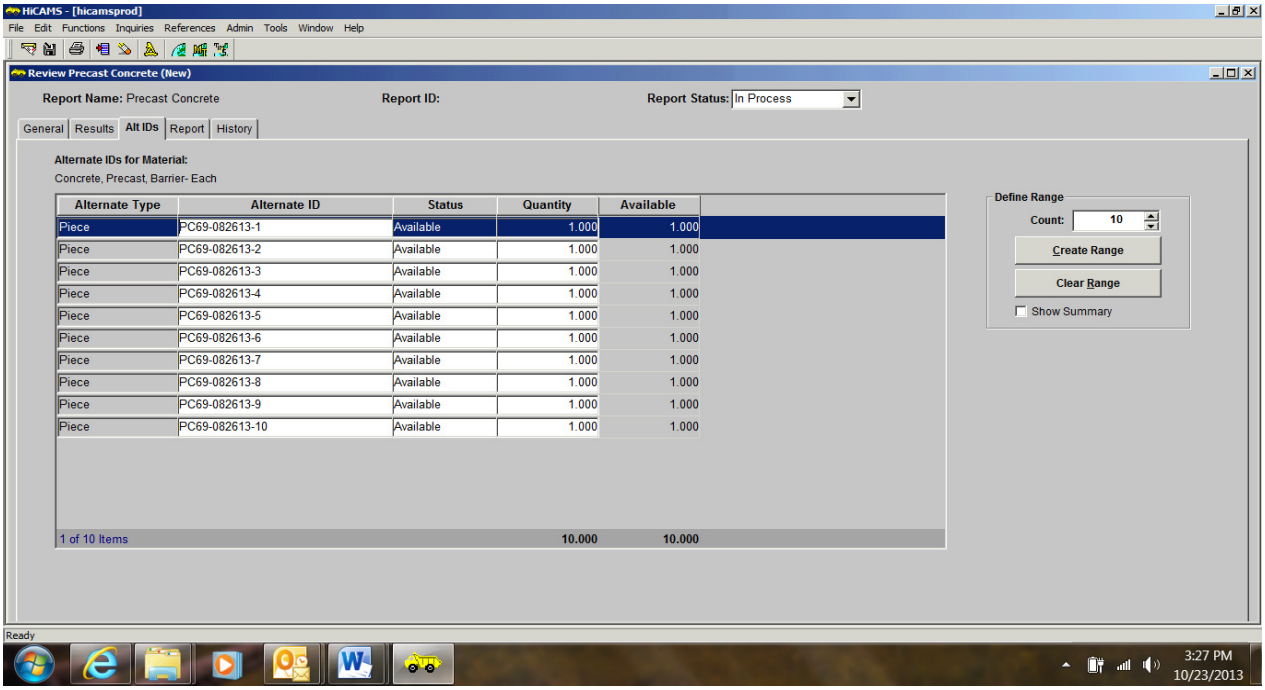

To enter test data click the 'Results' tab and insert a line by clicking the 4th icon from the left. Make material selections based on the information below: **Do not use 'Precast Concrete Units'.**

| Material Types: | Material: |
|---|---|
| Precast Concrete Barrier – Both | - Precast Barrier – Each (includes all sizes & types) |
| Precast Concrete Culverts – Both | - Precast End Sections- Each (includes all types of end sections, wing walls & head walls)<br>-Precast Culverts (includes box culverts & 1 or 2 piece - Three sided culverts) |
| Precast Concrete Drainage Structures – Both | - Precast Drainage Structure – Each (includes all types) |
| Precast Concrete Manholes- Both | - Precast Manholes – Each (Includes all types & risers) |
| Precast Concrete Walls & Panels – Both<br>coping | -Precast Wall Panels – Each (Includes MSE, noise & retaining wall panels, and posts) |

The following is an example of information entered on the 'Results' tab. The information in the lower left corner (Concrete Mix, Air Content, Slump and Compressive Strength) will need to be entered for each material inspected.




For each material listed select and enter the appropriate alternate ids.




When all information is entered, change report status to 'Complete' and 'Save'

## Appendix B

# 2024
# ROADWAY STANDARD DRAWINGS

| STD. NO. | STANDARD DRAWING TITLES | DIVISION |
|---|---|---|
| 310.02 | Parallel Pipe End Section for 15" to 24" pipe | 3 |
| 310.03 | Cross Pipe End Section for 18" to 30" pipe | 3 |
| 838.01 | Concrete End wall for Single and Double Pipe Culverts 15" thru 48" Pipe 90 Skew | 8 |
| 838.02 | Concrete End wall and Sluice Gate – 15" thru 36" Pipe 90 Skew | 8 |
| 838.04 | Concrete End wall for Single & Double Culverts 17" x 13" thru 71" x 47" Arch 90 Skew | 8 |
| 838.05 | Concrete 'L' End wall for Single Pipe Culvert 15" thru 48" Pipe | 8 |
| 838.06 | Concrete 'L' End wall for Single Pipe Culverts - 17" x 13" thru 71" x 47" Pipe Arch | 8 |
| 838.07 | Concrete End wall for Single & Double Pipe Culverts 40" x 31' thru 66" x 51" Arch 90 Skew | 8 |
| 838.08 | Concrete 'L' End wall for Single Pipe Culverts 40" x 31" thru 66" x 51" Pipe Arch | 8 |
| 838.10 | Concrete End wall for Outfall 4", 6", or 8" Pipe | 8 |
| 838.80 | Precast Endwalls 12" thru 72" Pipe 90 Skew | 8 |
| 840.45 | Precast Drainage Structure | 8 |
| 840.46 | Traffic Bearing Precast Drainage Structure | 8 |
| 840.52 | Precast Manhole – 4', 5', and 6' Diameter – 12" thru 48" Pipe | 8 |
| 840.53 | Precast Manhole with Masonry Base – 12" thru 42" pipe | 8 |
| 854.04 | Concrete Median Barrier – Precast Permanent | 8 |
| 857.01 | Precast Reinforced Concrete Barrier – 41" Single Faced | 8 |
| 865.01 | Cable Guiderail Anchor Details (Sheet 10 0f 12) | 8 |
| 1525.02 | Precast Concrete Sanitary Sewer Manhole – Outside Drop | 15 |
| 1525.06 | Precast Concrete Sanitary Sewer Manhole – With Cast-in-Place Bottom | 15 |

# Appendix C

## ASTM Standard Reinforcing Bars

Each bar diameter increases by 1/8 inch. Bar size can be multiplied by 1/8 to get the nominal diameter in inches.

| Bar Size Designation | Nominal Area | Nominal Weight | Nominal Diameter |
|---|---|---|---|
| #3 | 0.11 | 0.376 | 0.375 |
| #4 | 0.20 | 0.668 | 0.500 |
| #5 | 0.31 | 1.043 | 0.625 |
| #6 | 0.44 | 1.502 | 0.750 |
| #7 | 0.60 | 2.044 | 0.875 |
| #8 | 0.79 | 2.670 | 1.000 |
| #9 | 1.00 | 3.400 | 1.128 |
| #10 | 1.27 | 4.303 | 1.270 |
| #11 | 1.56 | 5.313 | 1.410 |
| #14 | 2.25 | 7.65 | 1.693 |
| #18 | 4.00 | 13.60 | 2.257 |

### Common Stock Styles of Welded Wire Fabric

| Style Designation | | Steel Area Sq. In. Per Ft. | | Weight Approx. Lbs. |
|---|---|---|---|---|
| New Designation (By W-Number) | Old Designation (By Steel Wire Gauge) | Longit. | Trans. | Per 100 Sq. Ft. |
| **Rolls** | | | | |
| **6x6-W1.4x@1.4** | 6x6-10x10 | .028 | .028 | 21 |
| **6x6-W2.0xW2.0** | 6x6-8x8* | .040 | .040 | 29 |
| **6x6-W2.9xW2.9** | 6x6-6x6 | .058 | .058 | 42 |
| **6x6-W4.0xW4.0** | 6x6-4x4 | .080 | .080 | 58 |
| **4x4-W1.4xW1.4** | 4x4-10x10 | .042 | .042 | 31 |
| **4x4-W2.0xW2.0** | 4x4-8x8* | .060 | .060 | 43 |
| **4x4-W2.9xW2.9** | 4x4-6x6 | .087 | .087 | 62 |
| **4x4-W4.0xW4.0** | 4x4-4x4 | .120 | .120 | 85 |
| **Sheets** | | | | |
| **6x6-W2.9xW2.9** | 6x6-6x6 | .058 | .058 | 42 |
| **6x6-W4.0xW4.0** | 6x6-4x4 | .080 | .080 | 58 |
| **6x6-W5.5xW5.5** | 6x6-2x2† | .110 | .110 | 80 |
| **4x4-W4.0xW4.0** | 4x4-4x4 | .120 | .120 | 85 |

* Exact W-number size for 8-gauge is W2.1 "
† Exact W-number size for 2-gauge is WS.4.

# Appendix D

**RFID Tracking Program**

**1030-1 Description**

The RFID tag/label is used by NCDOT for identification of manufactured products by visually reading the 24-digit code, scanning the RFID embedded chip, or scanning printed QR/barcode.

**1077-14 Marking**

Clearly show the following information on each precast member:

**(A)** Date of manufacture,

**(B)** Name of the manufacturer,

**(C)** Piece mark designations where such designations are shown in the plans, and

Clearly apply a Department approved self-adhesive RFID tag/label tagged in accordance with Section 1030 applied in accordance with Subarticle 1030-2(F). When precast products have been inspected the Department will update the RFID tag/label record as found in the Field Inspection Report (FIR) or NCDOT alternate ID. RFID tag/labels are allowed but not required for incidental precast items.

*Note the RFID tag has become the new Alternate ID in HiCams.*

Shown are 2 examples of concrete tags with the 24-character numbering scheme:


**RFID/ Barcode Tag Location in Precast Concrete Members**

| Member Type | Location Details |
|---|---|
| Noise Walls/Retaining Wall | Side of member |
| Drainage Structures | Inside wall |
| Reinforced Box Culvert | Inside wall |
| Precast Caps | Side of Cap/Bent either end |

# Appendix E

## Product Tolerances

| | |
|---|---|
| Bugholes, chips, voids, and honeycombing | 3/8" maximum depth |
| Maximum size joint gap | 3/8” flexible joint |
| 1” grout Joint | |

Length, width, height, and diameter (measured inside):

| | |
|---|---|
| 0 to 5 ft | +/- 1/4” |
| 5 to 10 ft | +/- 3/8” |
| 10 and over | +/- 1/2" |

Squareness (determined by inside diagonal dims.):

| | |
|---|---|
| 0 to 10 ft | 1/2” |
| 10 and | 3/4" |
| over Wall | +3/8”, -1/8” |
| thickness | +1/2”, -1/8” |
| Top and bottom slab thickness | |
| **Maximum w/cm ratio** | **.45** |
| **Slump max (HRWR/Super)** | **3.5” (6”)** |
| **Spread (SCC only)** | **22” to 28”** |
| **Air content** | **4.5% ± 1.5%** |

Minimum reinforcing steel cover shall not be less than 1” for products retaining water or ¾” for other.

Flexural reinforcing steel shall not exceed spacing of 12inch center to center.

Welded wire fabric may be substituted for re-bar as long as the same area of steel is provided.

Variations in reinforcing steel spacing shall not be more than one tenth of design spacing nor exceed 1 ½”

Macro Synthetic Fiber reinforcement may be substituted in accordance with Section 1077-7(B)

# Appendix F

**Inspection Policy for Precast Concrete Items Not Inspected During Production**

Cabell Garbee, Manufactured Products Engineer

December 7, 2020, revised March 6, 2023

LGA projects require that materials be NCDOT Approved in order to utilize Federal and State Funding.

Precast and other drainage items that are not inspected and approved by Materials and Tests at the time of production are not allowed.

For items where the Producer neglected to have Materials and Tests perform an inspection during fabrication, the items may be allowed if the following conditions are met:

1. Provide verification that the items were produced alongside items that were Produced for NCDOT use that were Inspected and Approved by NCDOT.
2. Provide the design drawings (including the shop drawings) so that they can be reviewed and Approved by NCDOT Materials and Tests or Structures Management (depending on the items) by submitting the drawings to PrecastConcrete@ncdot.gov
3. Provide copies of production information (dates casted, concrete mix design information, concrete tests performed including results, identification of the pieces).
4. Determine the location and size of the reinforcement steel in 100% of the pieces using non-destructive means, verified by coring over the steel location in several locations in 25% of the items. Mark the locations and sizes on the items utilizing a permanent method and summarize in a written report.
5. Determination of the strength of the concrete in 100% of the pieces using non-destructive means, verified by testing of core samples obtained from 25% of the items.
6. Testing of the pieces to be performed by a NCDOT Materials and Tests Unit Approved Third Party in the presence of a NCDOT representative.

If the above meet Specification, a FIR will be generated so that the pieces may be accepted.

NOTE: It is NCDOT Materials and Tests' Policy to inspect any items presented for inspection by the Manufacture at the time of Production to ensure compliance with NCDOT Specifications regardless of intended product use (NCDOT, LGA, Utility, Commercial). At this point in time, no items should be shipped to projects involving the use of public funds without Inspection and Approval during Production.

# Appendix G

## NCDOT Approval Guidelines for Precast Drainage Structures

(Updated 8/3/2023)

The following guidelines should be followed by Precast Suppliers when producing precast drainage structures for installation within NCDOT right of way.

- All precast drainage structures that are built in accordance with Roadway Standard Drawings 840.45, 840.46 and 840.52 will continue to be inspected and approved as they are currently.

- All precast drainage structures, built in accordance with Roadway Standard Drawings 840.45 and 840.46, should have 6" of concrete over pipe openings in the corners of the structure and 4" of concrete over pipe openings in the sides of the structures.

- All precast drainage structures, built in accordance with Roadway Standard Drawings 840.52, should have 4" of concrete over pipe openings.

- For precast drainage structures built in accordance with 840.45, 840.46 and 840.52, that have less than 6" of concrete over pipe openings in the corners of the structure and 4" of concrete over pipe openings in the sides of the structures, the design drawings will have to be submitted to NCDOT M&T for approval. Submit all design drawings to PrecastConcrete@NCDOT.GOV. Design drawings should include: dimensions for the proposed precast structure, top view and side view of the precast structure, the layout and size of reinforcing steel, a plan view of the drainage structure with the location of where the precast structure will be on the project.

- For precast drainage structures that exceed the dimensions shown in Roadway Standard Drawings 840.45, 840.46 and 840.52, the sealed design drawings will have to be submitted to NCDOT M&T for approval. Submit all design drawings to PrecastConcrete@NCDOT.GOV. Sealed design drawings should include: dimensions for the proposed precast structure, top view and side view of the precast structure, the layout and size of reinforcing steel, a plan view of the drainage structure with the location of where the precast structure will be on the project.

- All precast drainage structures that need to be submitted to NCDOT M&T for approval will have to be approved prior to production. All precast drainage structures that require approval from NCDOT M&T will require 100% inspection by NCDOT personnel prior to production as well.

- For precast drainage structures that are built according to an NCDOT detail, no submittal or special approval is required. However, 100% inspection will be required during production.

# Appendix H

Table 1077-1 from 2024 Standard Specifications for Roads and Structures

| TABLE 1077-1<br>PRECAST CONCRETE STRENGTH REQUIREMENTS<br>AT AN AGE OF 28 DAYS | | |
|---|---|---|
| **Precast Units** | **Requirement** | **Specification Reference** |
| **BARRIER:** | | |
| Portable | 4,500 psi | Section 854, 1090 and 1170 |
| Permanent | 4,500 psi | Section 854, 857 and 1090 |
| **CULVERTS:** | | |
| Circular Pipe | 4,000 psi | Section 310, 1032, 1034, 1520 and AASHTO M 170 |
| Single Cell Box Sections | 5,000 psi | Contract and AASHTO M 259 |
| Pipe Tees | 4,000 psi | Section 310, 1032 and AASHTO M 170 |
| Pipe Elbows | 4,000 psi | Section 310, 1032 and AASHTO M 170 |
| Cross & Parallel Special End Sections | 3,500 psi | Section 310 and 1032 |
| **DRAINAGE STRUCTURES:** | | |
| Boxes (Solid & Waffle) | 4,000 psi | Section 840 and ASTM C913 |
| **CIRCULAR MANHOLES:** | | |
| Base | 4,000 psi | Section 1525 and AASHTO M 199 |
| Riser Section | 4,000 psi | Section 1525 and AASHTO M 199 |
| Top Section | 4,000 psi | Section 1525 and AASHTO M 199 |
| Grade Ring | 4,000 psi | Section 858 and AASHTO M 199 |
| **WALLS AND PANELS:** | | |
| Wing, Head & End Walls | 4,000 psi | AASHTO T 23 |
| Precast Retaining Wall (PRW) Units | 4,000 psi | Section 455 |
| Precast Coping | 3,000 psi | Contract |
| Retaining Wall Panels | 4,000 psi | Contract |
| Sound Barrier Wall Panels | 4,500 psi | Contract |
| **INCIDENTAL PRECAST ITEMS:** | | |
| Concrete Pads For Outlet Pipe, Controller Base Cabinets | 2,500 psi | Section 815, 816 and 825 |
| Right-of-Way Markers | 2,500 psi | Section 806 and 1054 |
| Concrete Anchor For Cable Guardrail | 3,000 psi | Section 1046 |
| Picnic Tables | 2,500 psi | Contract |
| Waste Containers | 2,500 psi | Contract |

# Appendix I

## How to Verify Pieces Scanned are Recorded in Idencia

- You will need to verify the pieces are being recorded in Idencia once you finish scanning by running a Grouped Daily Inspection Report.
- To display the Grouped Daily Inspection Report, open the online version of Idencia.
- Click “Reports” on the left of the Idencia screen.
- Click on Grouped Daily Inspection Report
- Click on the **Select Inspector** down arrow for a drop-down box to open. Select your name.

Click **Select Inspection Date** down arrow for a drop-down box to open. Select the Inspection Date and then View Report

- The report will display, and you can verify the scans are being recorded by looking at **Total Product Inspections**. This number will let you know how many pieces you have inspected.

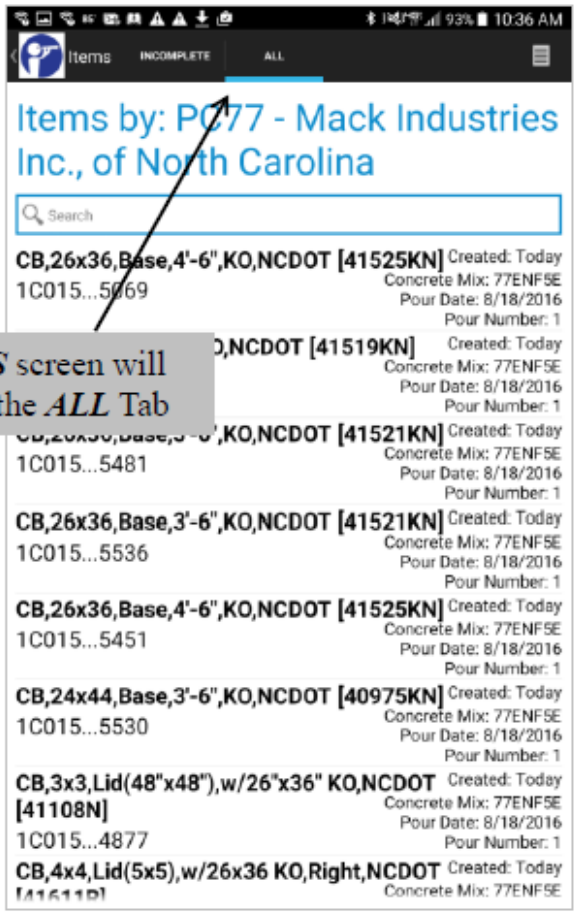
- At the end of your inspection, return to the producers’ office and compare the **Grouped Daily Inspection Report** with the **NCDOT Producers Production Report**. The producer representative used the NCDOT Producers Production Report to manually check off pieces as you scanned the RFID tag. If the totals do not match, check the Grouped Daily Inspection Report for duplicates and omissions. It may be necessary to return to the yard and re-scan some pieces. Resolve any discrepancies prior to leaving producers facility in order to expedite the FIR process.

## Appendix J

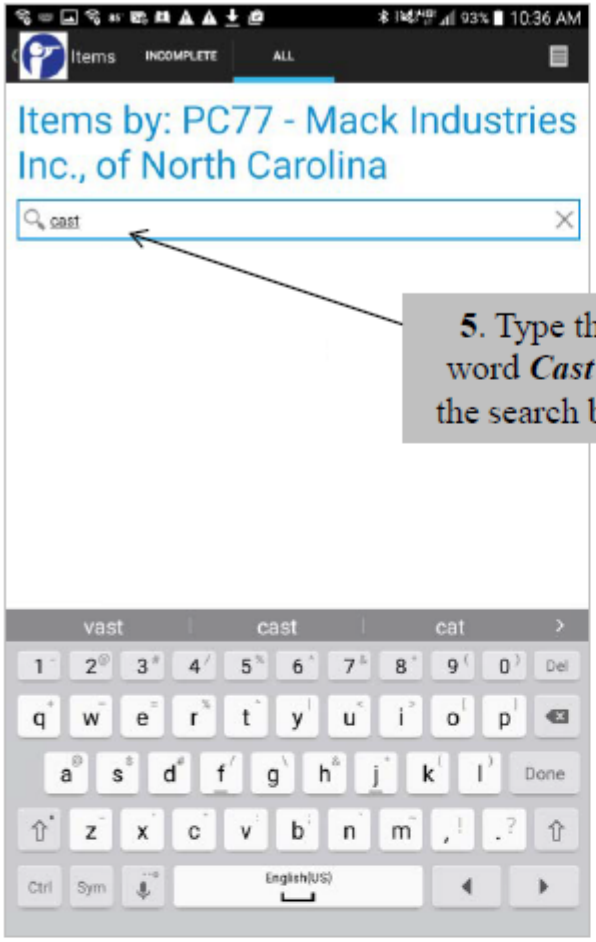
# Recording Cylinder Breaks

- Report to the facilities QC personnel. The facility will generate an Idencia Production Report. Review this report with the QC personnel.
- Access the Idencia app on the tablet. Select *View Items* to view cast dates and record the compressive strength break data.


1. Select *View Items*

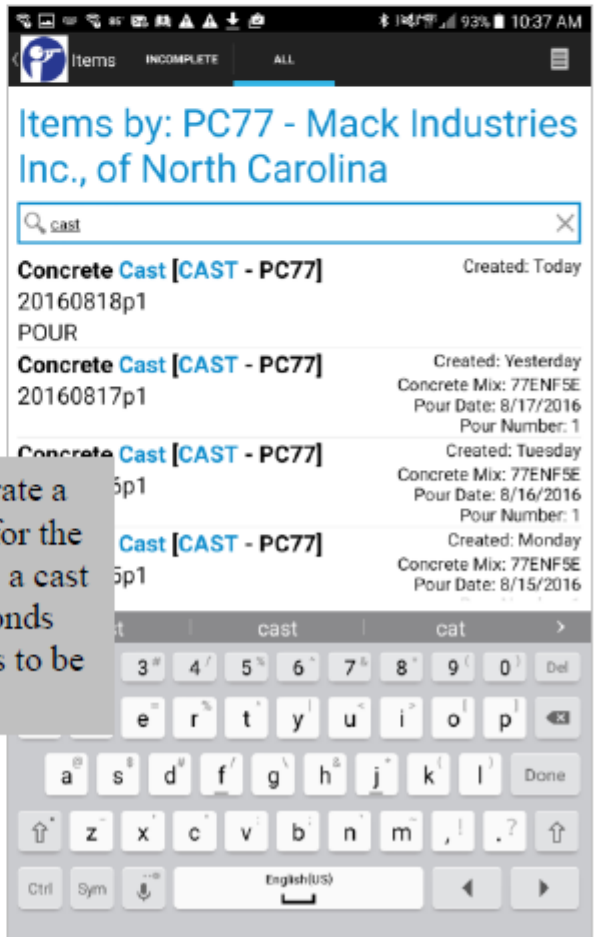



2. The *ITEMS* screen will open. Select the *ALL* Tab




**5**. Type the word ***Cast*** in the search box

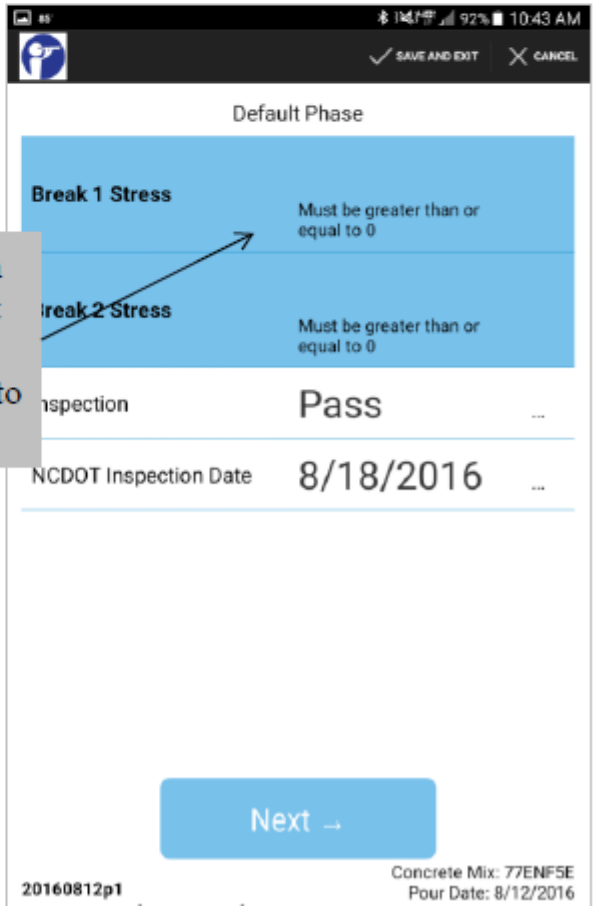
- During a concrete pour, the producer makes at least two cylinders-per pour date-per mix used. This is your ***CAST*** date.

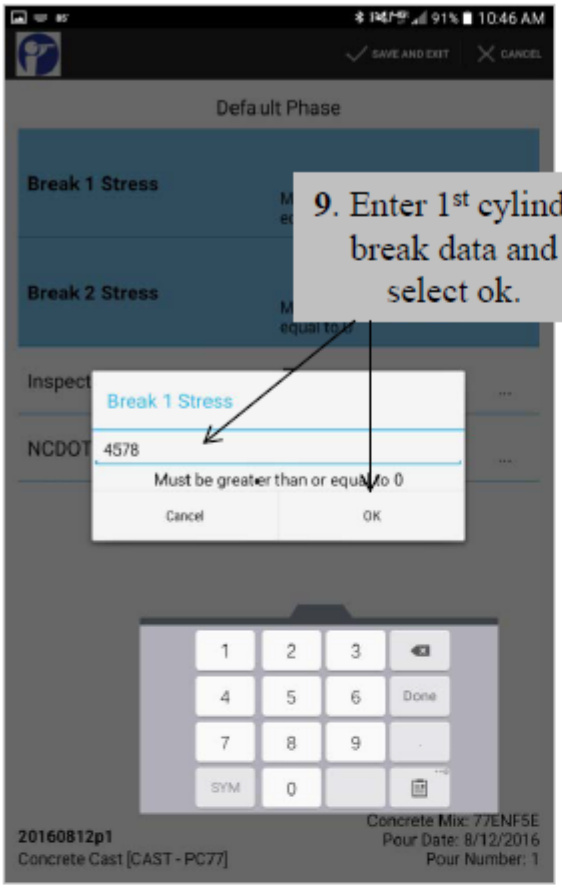


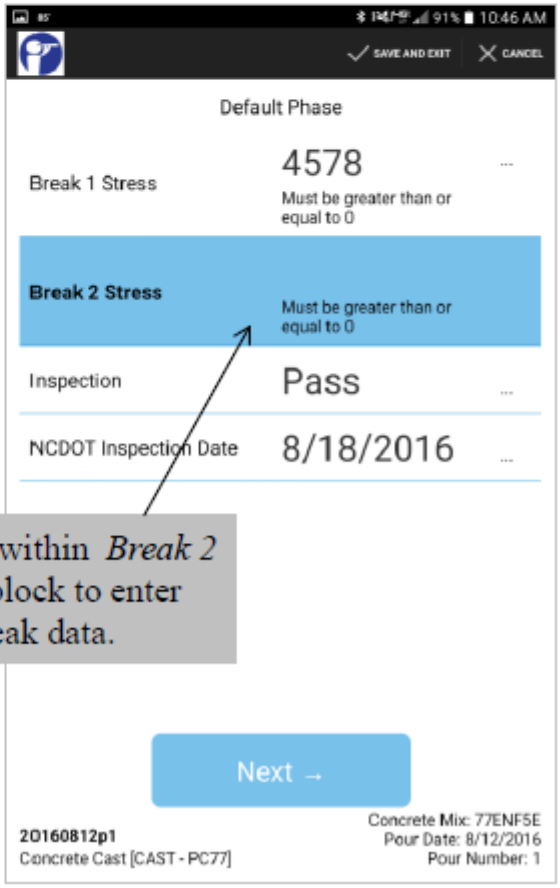

**6**. This will generate a list of cast dates for the Producer. Select a cast date that corresponds with the cylinders to be broken.

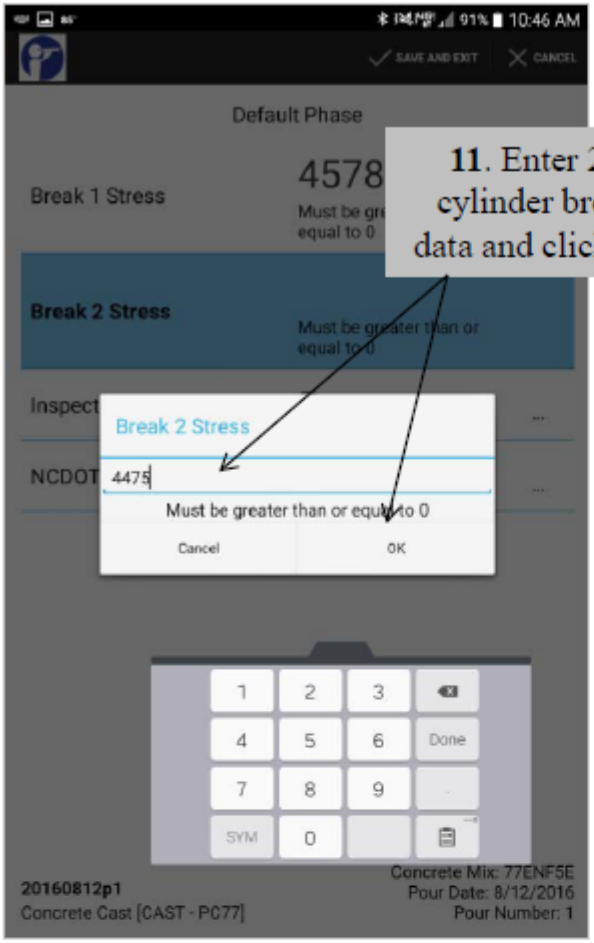

7. Select ***Concrete Test Inspection.***

8. The break screen will open in Default Phase. Click within *Break 1 Stress* block to enter Break data.

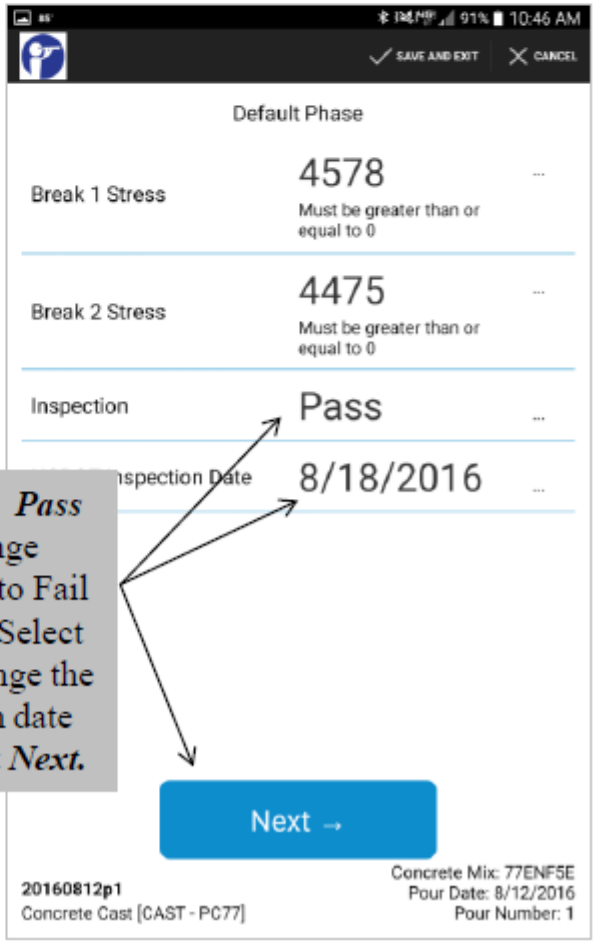



10:46 AM
SAVE AND EXIT
CANCEL
Default Phase
Break 1 Stress
Break 2 Stress
Break 1 Stress
4578
Must be greater than or equal to 0
Cancel
OK
9. Enter 1st cylinder break data and select ok.
20160812p1
Concrete Cast [CAST - PC77]
Concrete Mix: 77ENF5E
Pour Date: 8/12/2016
Pour Number: 1

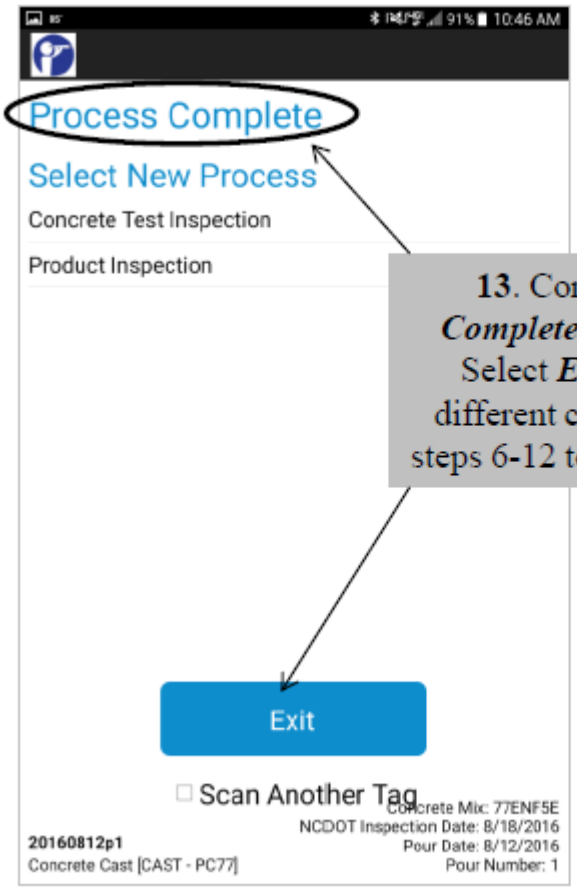

10:46 AM
SAVE AND EXIT
CANCEL
Default Phase
Break 1 Stress
4578
Must be greater than or equal to 0
Break 2 Stress
Must be greater than or equal to 0
Inspection
Pass
NCDOT Inspection Date
8/18/2016
Next →
10. Click within Break 2 Stress block to enter break data.
20160812p1
Concrete Cast [CAST - PC77]
Concrete Mix: 77ENF5E
Pour Date: 8/12/2016
Pour Number: 1




**11**. Enter 2nd cylinder break data and click ok.




**12**. Select ***Pass*** to change inspection to Fail if needed. Select date to change the inspection date then Select ***Next.***




**13**. Confirm ***Process Complete*** message. Then Select ***Exit*** to choose a different cast date. Repeat steps 6-12 to enter break data.

**Reference Material:**

The following reference material can be used in conjunction with the 2023 NCDOT Standard Specifications, 2023 NCDOT Standard Drawings and ASTM / AASHTO Standards. ASTM and AASHTO standards can be accessed online via the NCDOT portal at https://inside.ncdot.gov/Transportation-Services. Click 'Online Standards' under 'Resources' column on the far right.