Spot Compaction Methods
Defaults Test Methods for:
  - Non – Granular Subgrade
  - Granular Subgrade
  - Base
  - Drainable Base
  - Shouldering Material

Acceptable Alternative Methods (Quality Compaction or LWD)

Full Coverage Compaction Methods
  - Test Rolling
  - Intelligent Compaction
Non – Granular Subgrade

Defaults Spot Test Methods for:

- Non – Granular Subgrade

Specified Density – Proctor

- Optimum Moisture
- Maximum Density (Target)

Compaction Compliance

- Sand Cone
- Nuclear Density Gauge
Nuclear Density Compaction Testing (2014)

Reasons for change

- Vast majority of States, and private work allows for the device.
- Requested by local agencies.
- Quick Results
- ASTM and AASHTO Standards
- Federal Approval
- CO Safety Office procedures
- Upped Testing Rate in Trenches for 2014

- Requirements for projects let in 2015
Certified by AASHTO Materials Reference Laboratory (AMRL)
Granular Subgrade & Base

Defaults Spot Test Methods for Granular Subgrade & Base

Dynamic Cone Penetrometer (DCP)
Defaults Test Methods for Surfacing Aggregate and Drainable Aggregate Base

Quality Compaction
Acceptable Alternative Methods (Quality Compaction or LWD)

Quality Compaction or Light Weight Deflectometer may be substituted by Special provision for specified density or DCP.

Still need Proctor for optimum moisture on non-granular material.
LWD
LWD – Formalization

1) Review/Revise & place LWD procedure into the grading and base manual.

2) Place LWD as an option within the 2105/2106, and 2211 specifications, Schedule of Materials Control, & Independent Assurance requirements

3) Follow our current specification that requires the LWD yearly calibration per ASTM Standard E2835, and require proof (documentation) during IA review.
Quality Compaction Spec Changes

08/06/2006
Quality Compaction
Compact each lift until there is no further evidence of consolidation during compaction.

Add no evidence of (Ohio DOT):
- Pumping – vertical displacement of the top surface of the compacted layer, not directly under the vehicle tire.
- Reaction – a movement back to a former or less advance condition.
- Yielding – giving under pressure flexible.
- Cracking – cracking of material on visible surface
- Lateral movement – No lateral movement allowed

Additionally all other compaction requirements must meet quality compaction
Test Rolling

- Added Tandem – Now Test roller 30 and 10
- Standard for TR 10
  - total weight for front axle,
  - tires,
  - deflection
  - included quality compaction language
- Currently using feeler gauges on both, but researching using a laser/GPS for Test Roller 10.
Intelligent Compaction

Developing/Evaluation/Researching

Contact Rebecca Embacher for information and Special Provisions
Quality Management

- Four projects in 2014
- Transferring Responsibility to Contractor
- Gathering information/evaluating from this and next year’s projects
Quality Management

- Moistures
- Aggregate Qualities
- Gradations
- Compaction

If interested contact me for special provisions.
Reminder

Revise G&B Manual (online and dated) each year. Contact me to get on email update list.
Le finis