Base Prep

Session 11

Base Conditions

- Mixtures to be placed only on “prepared, firm and compacted base, foundation layer or existing pavement”

- Before placement, fill potholes, sags and depressions; alter crown; other corrections

Subgrade

- Look for areas of soft or yielding soil
  - Identify by proof rolling
  - Rework, stabilize or EBS problem areas
- Do not place the upper course if lower layer is showing distress. Fix lower layer first
- Check longitudinal grade and cross slopes
  - A good blade operator can shape the base to within:
    - 1 inch per 100 ft. of grade
    - ¼" of the cross slope per lane of pavement

Importance of Shaping Example

- Proposed slope should be 2%
  - Inspector says base shaped at 1.5% is OK to pave on
  - If lane is 15 feet wide and plan depth is 4 inches
  - 0.5% x 15 feet x (12 inches/1 foot) = 0.9 inches
  - Left side = 3.1 inches Right side = 4.0 inches

Thin areas may see load related distresses during pavement life

Core log examples

Pavement
Field Core Log

Project:	Road:		
7560-06-01	STH 95 (USH 53 - ECL)		
County:	Region Office:	Date:	Page 1 of 1
TREMPEALEAU	NW-EAU CLAIRE	10/12/11 & 10/13/11	
Other:	CORES MARKED WITH WHITE "X"		

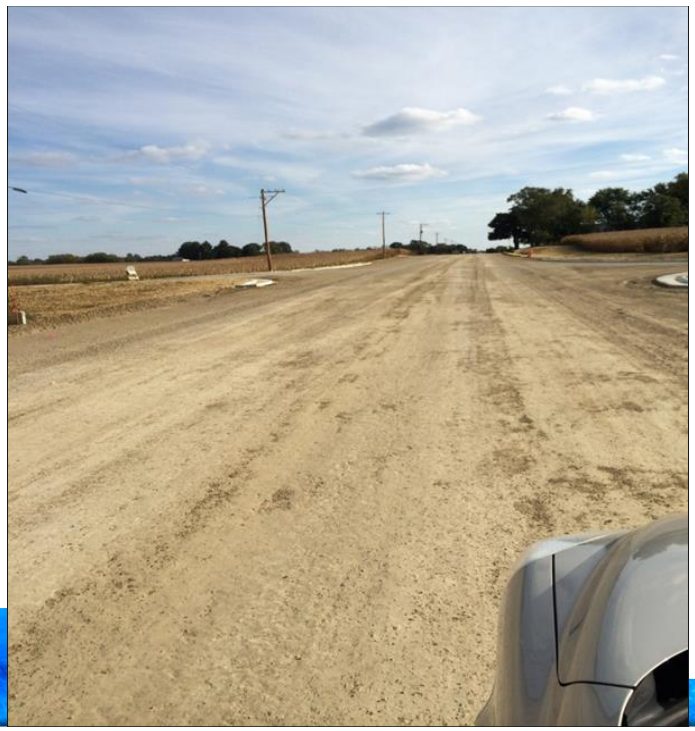
Core No.	Sta/Mile	Offset	Pavement Thickness	Base Thickness	Comments/Subgrade
	0.00 LT				STH 95/USH 53 INTERSECTION
	0.00				CONSTN JOINT
1	0.35	8 RT	6"		Limestone Base
2	0.35	16 RT	5 3/4"		" "
					W. SECOND ST. LT & RT
3	0.60	8 LT	5 3/4"		Limestone Base
4	0.60	16 L T	4 3/4"		" "
	0.67				AGTH/US 53 LT
5	1.00	7 R T	6 1/2"		Limestone Base
6	1.34	7 LT	6 3/4"		" "
7	1.67	7 RT	6"		" "
8	2.00	7 LT	5"		" "
9	2.33	7 RT	5"		" "
10	2.70	7 LT	6 1/2"		" "
11	3.00	7 RT	5 1/2"		" "
12	3.33	7 LT	5 1/2"		" "
13	3.67	6 RT	5 1/2"		" "
14	4.00	7 LT	5 3/4"		" "
15	4.29	7 RT	5 3/4"		" "

CMM 4-54.8

Checking of the foundation can be accomplished in a variety of ways. One way is to drive the job at various speeds, taking note of places where corrective work is needed. Stakes or other markers can be thrown from the car to the shoulder in passing to indicate areas requiring further investigation. These locations can then be stringlined to locate the ends of the required leveling layer. These limits may be marked on the pavement, along with required depth of the lift, at frequent intervals not exceeding 30 feet. As an alternative, profiles may be taken at the centerline and pavement edges. After a satisfactory grade line is established, it should be referenced to offset stakes, or a stringline reference should be erected for use with automatic controls.

Base Course

- Check Plans for Base Compaction Specifications
- The base course must be shaped and compacted to the proper transverse slope and to a smooth, true profile.
  - Check compaction by proof rolling
  - Check for sags or mounds between red tops
  - Correct any deficiencies



Overlay Applications

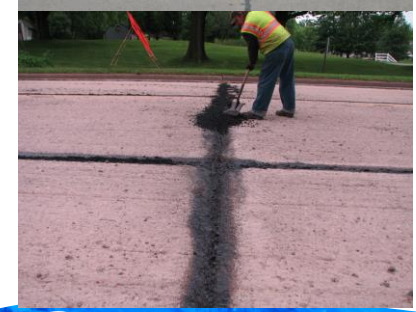
- Repair of existing surface
  - Wedging
  - Leveling Layer
  - Patching
- Milling
- Rubblization

Existing PCC Pavement

- What's the Project scope?
  - Base patching
    - Broken pavement pieces that rock or move under normal traffic loads should be removed and the pavement patched
    - All surplus crack and joint sealing material should be removed and all protruding joint materials (fillers and sealers) should be removed down to at least the existing pavement surface.
  - Crack & Seat
    - Specific specification
  - Rubblization
    - Specific specification

Overlay of Deteriorated Concrete

- Concrete dust absorbs water
- Causes heaving/tenting when frozen
- Expands 10% when frozen
- Remove rotten concrete before overlay



Existing HMA Pavement

- What's the Project scope
  - Base patching
    - Remove and replace failed areas
  - Leveling Layer
    - Grade and cross slope corrections
    - Feather thickness correction with milling
    - Max. thickness 3" & Min. thickness 1 ¼"
  - Milling
    - Specific specification

Milling

- Removes old/distressed pavement
- Eliminates costly shoulder work
- Maintains drainage features, overhead clearance
- Corrects slope, elevation, etc.

Milling

- Full-Depth
  - Remove existing asphalt layer(s) without incorporating or damaging underlying layers
- Partial-Depth
  - Remove top part of existing asphalt layers
  - Uniform, planar milled surface
  - Mill to grade and slope required
  - Do not damage underlying pavement
  - Self-propelled milling machine with grade, slope and depth controls

Milling Operation

- Control dust and loose particles
- Maintain traffic during construction (unless road is closed)
- Do not leave longitudinal drop-off 2 in or more in depth during non-working hours
- Grade shoulders to drain at end of day

Rubblization

Rubblization

- Current program does not have any Rubblization projects

Rumble Strips

- Construct by milling asphaltic surface shoulder
- Rotary head milling machine
- Ensure alignment is straight
- Sweep or vacuum debris before opening to traffic