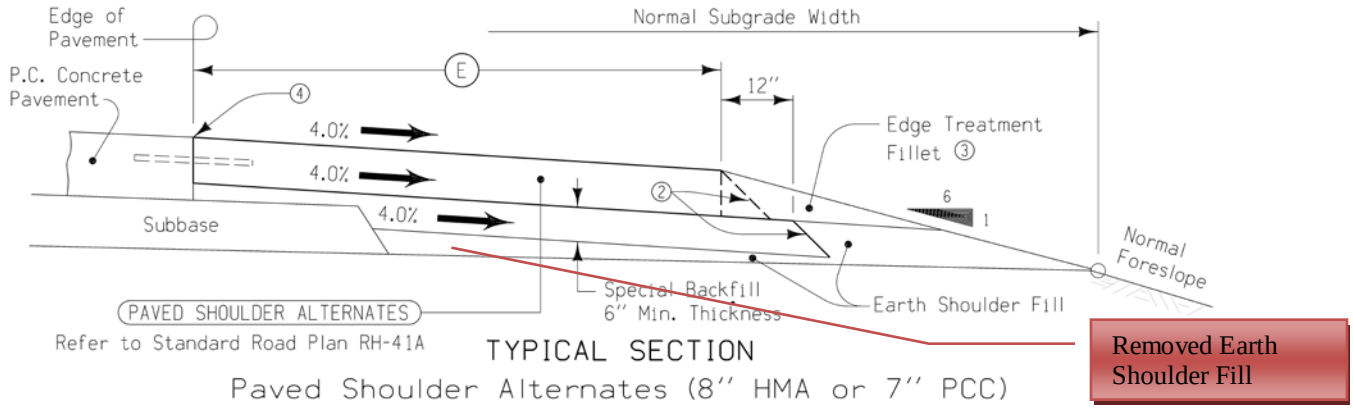
Shoulder Design Changes

The Office of Design began looking at changes to the shoulder design after complaints about trucks sinking into granular shoulders. Several options were discussed and the following changes were approved by HDMT and implemented with the April 2010 letting.

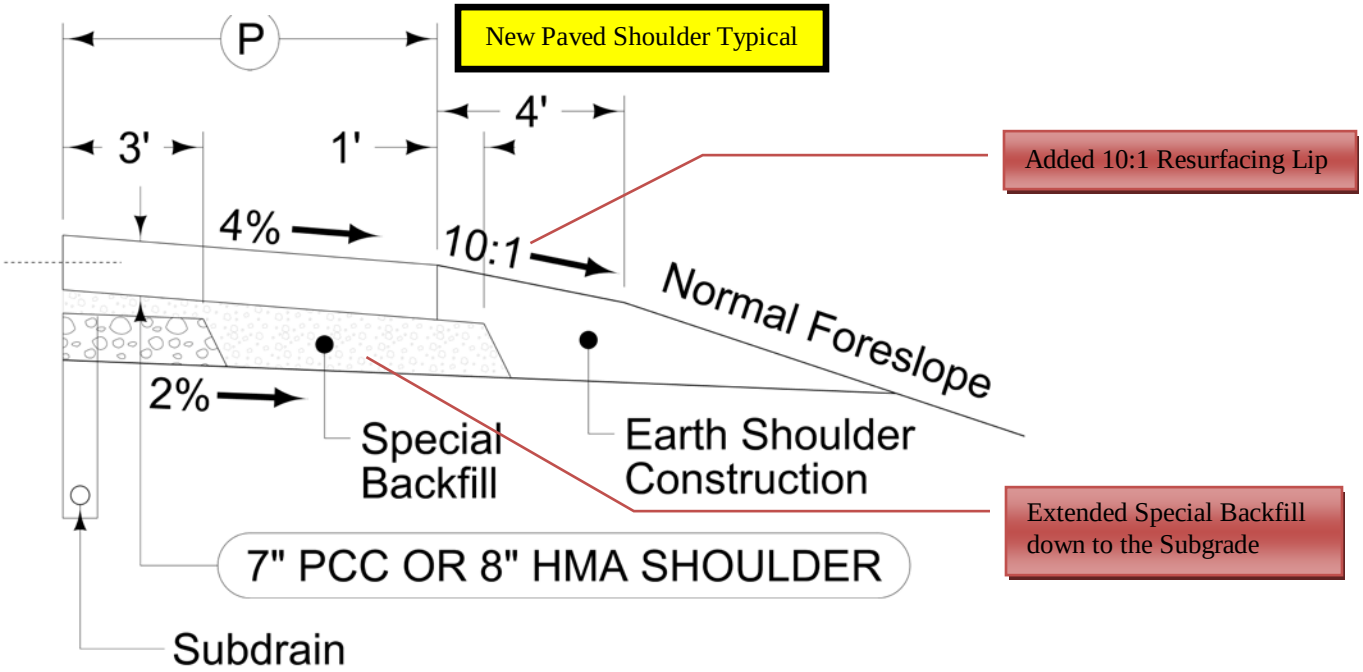
- Removed the earth fill layer and continued the granular material down to the subgrade. This was done to add strength to the shoulders.
- Added a four foot wide earth embankment at a 10:1 slope adjacent to the shoulder.
    - This provides a clearly defined point where the design shoulder ends. Previously the granular shoulder continued out to the foreslope making the shoulder appear wider than it was designed to support vehicles.
    - It provides for resurfacing. Previously the first overlay required about twelve feet of foreslope grading.
    - Removed Edge treatment fillet and the flatter than 6:1 elements of the shoulder. They were no longer necessary after moving the resurfacing lip adjacent to the shoulder.
- Trench width subgrade treatment changed to standard width treatment.

Old Paved Shoulder Typical



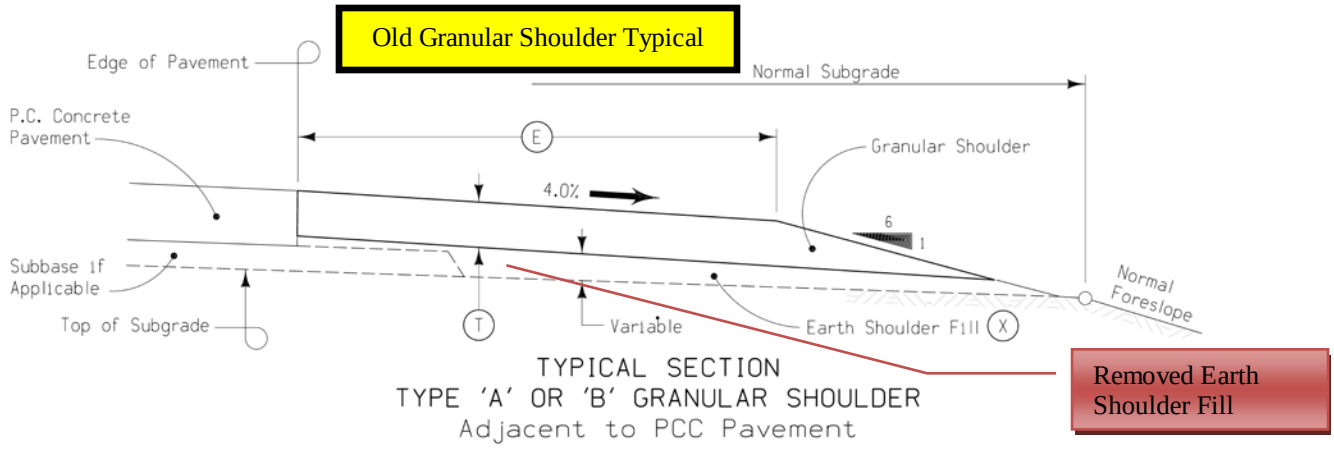
Removed Earth Shoulder Fill

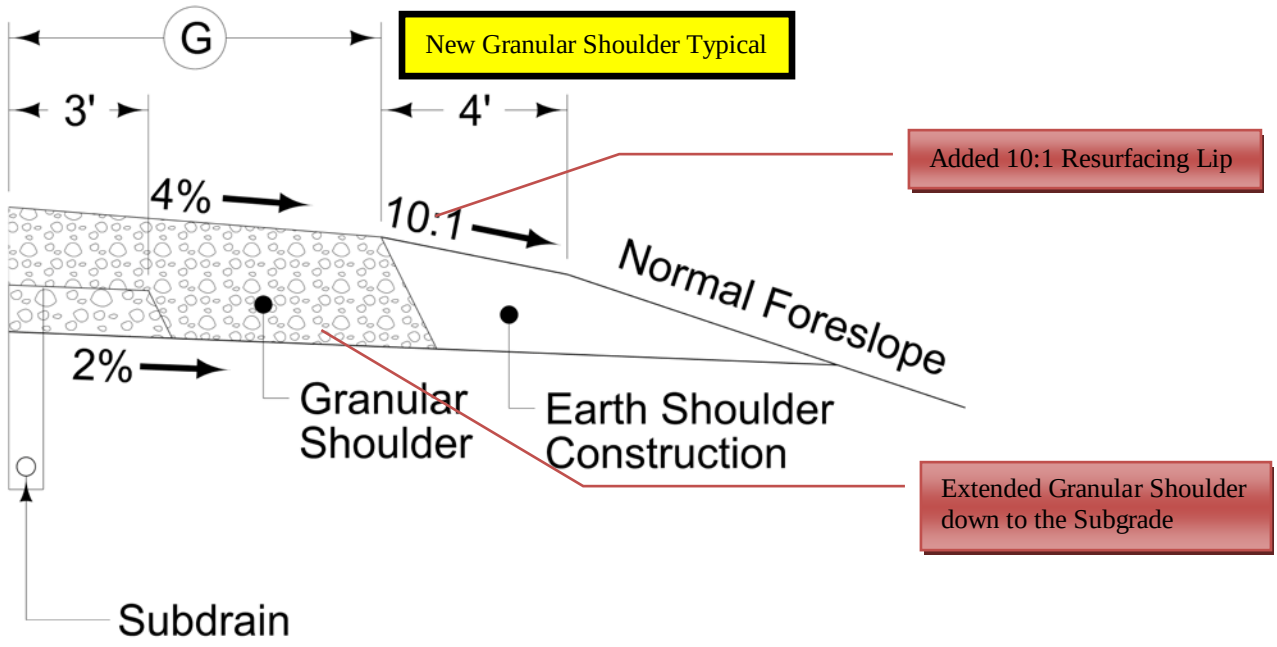
New Paved Shoulder Typical



Added 10:1 Resurfacing Lip

Extended Special Backfill down to the Subgrade


Old Granular Shoulder Typical
Edge of Pavement
Normal Subgrade
P.C. Concrete Pavement
E
Granular Shoulder
4.0%
6
1
Subbase if Applicable
Top of Subgrade
T
Variable
Earth Shoulder Fill
X
Normal Foreslope
TYPICAL SECTION
TYPE 'A' OR 'B' GRANULAR SHOULDER
Adjacent to PCC Pavement
Removed Earth Shoulder Fill


G
New Granular Shoulder Typical
3'
4'
Added 10:1 Resurfacing Lip
4%
10:1
Normal Foreslope
2%
Granular Shoulder
Earth Shoulder Construction
Extended Granular Shoulder down to the Subgrade
Subdrain

Chronology of Changes to Design Manual Section:

003C-003.5 Shoulder Design Changes

5/28/2010 NEW

This section documents shoulder design changes made in April 2010.