

Rock Products Committee
SCOPING DOCUMENT
Notched Wedge Joint
June 19, 2012

Task Group

Asphalt Task Group

Title

Notched Wedge Joint

Issue/Problem Statement

Caltrans current specification for HMA requires that vertical longitudinal joint more than 0.15 foot high cannot be left between adjacent lanes open to public traffic or contractor must complete paving so that at the end of each work shift, the distance between the ends of HMA layers on adjacent lanes is between 5 feet and 10 feet. The current specification requirements for longitudinal joints can cause contractor inefficiency and therefore increases exposure of workers to public traffic.

Background

Tapered longitudinal joints make it safer for vehicles to traverse between lanes that are under construction, they allow the paving operation to be more efficient by eliminating the need to “pull up” the adjacent lanes each day to eliminate having a drop off exposed to overnight traffic, and improved the density along the longitudinal joint.

Proper construction techniques and equipment are essential to achieve good longitudinal joints and avoid premature pavement failure. Poorly constructed longitudinal joints do not achieve the required level of compaction at the longitudinal joints. Poor compaction leaves high air voids in the mix which are prone to subsequent cracking and raveling. Water seeps thru these cracks into the pavement structure weakening the flexible base or subgrade leading to pavement deterioration.

One construction technique use to achieve good longitudinal joint is the use of the notched wedge joint. Published articles recommended its use because it reduces air voids along the longitudinal joint. The Department introduced the notched wedge joint in 2007 as contractor option, but was rarely used and ultimately the specification was not included when Section 39 was rewritten.

Purpose

Allowing contractor’s the option to use tapered notch wedge joint to reduce construction time and impacts to the traveling public by increasing contractor efficiency. The proposed tapered

notch wedge specification will allow contractor to place thicker lifts of hot mix asphalt and eliminate the need to “pull up” adjacent lanes every shift while ensuring good longitudinal joint construction in hot mix asphalt pavements.

Objectives/Deliverables

The objective is to implement a new specification for tapered notch wedge joint for HMA pavement based on modifying the notch wedge specification used in the past. The modified specification should have adequate quality control requirements for assuring longitudinal joint compaction while not being so onerous that Contractor’s will not use tapered notch wedge.

The expected deliverables for notched wedge joint:

- Notched Wedge Specification
- Construction Policy Bulletin

Timeline

The Sub Task Group will begin development of the notched wedge joint specification in July 2012 and complete its work by September 30, 2012. The specification should be posted on the Office Engineer webpage in October 2012. The Construction Policy Bulletin should be completed by January 2013.

Benefits

- Easier for vehicles to traverse
- Improves the efficiency of the paving operation
- Reduces worker exposure to public traffic
- Improves the density along the longitudinal joint

Impacts

- Construction operations
- Pavement service life

Resource Requirements

Task	Caltrans Staff	Hours/Staff
Specification Development	Pavement METS Construction Office Engineer	0.30
Construction Policy Bulletin	Construction	0.05

Impediments to Completion of Deliverables

- None.

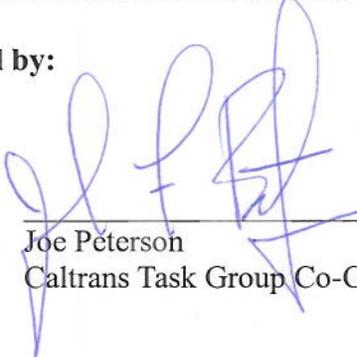
Recommendation and Approval

This scoping document for Notch Wedge Joint was prepared by Asphalt Task Group to address a priority issue that has Statewide significance and is within the Rock Products Committee mission. The Task Group Co-Chairs have determined the scope, resources required and timeline for delivery of this project to ensure that the deliverables are achievable in a timely manner.

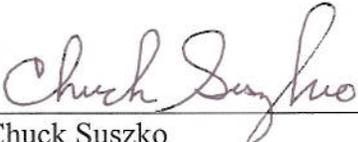
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