

CONSTRUCTION BULLETIN 13-03

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Resident Engineers

FROM: Julie E. Kliewer, Acting Assistant State Engineer, Construction Group

DATE: February 22, 2013

Masonry Sound Wall Structural Detail Updated

Purpose

To alert construction personnel of an updated detail for masonry sound barrier wall construction.

Background

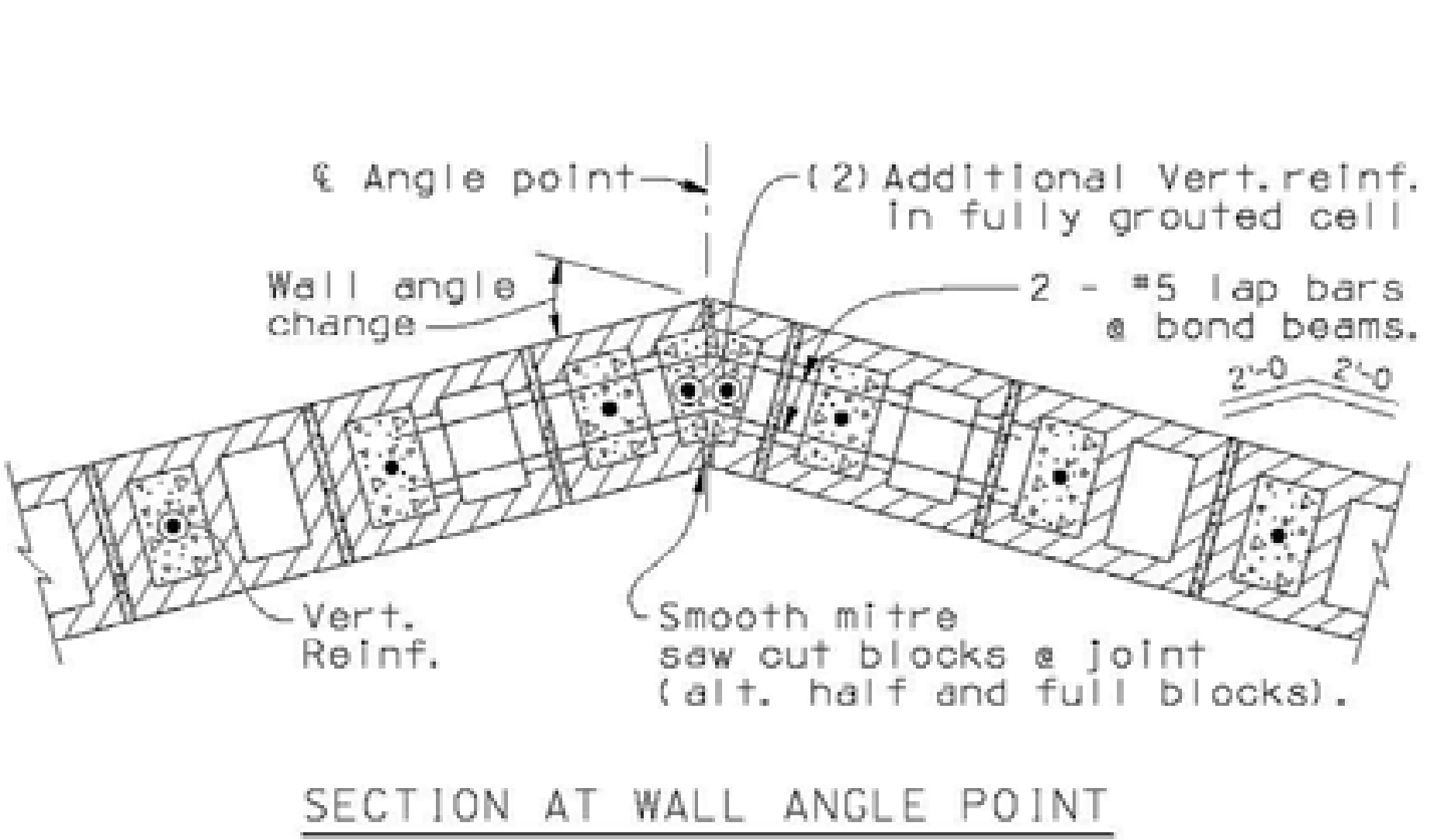
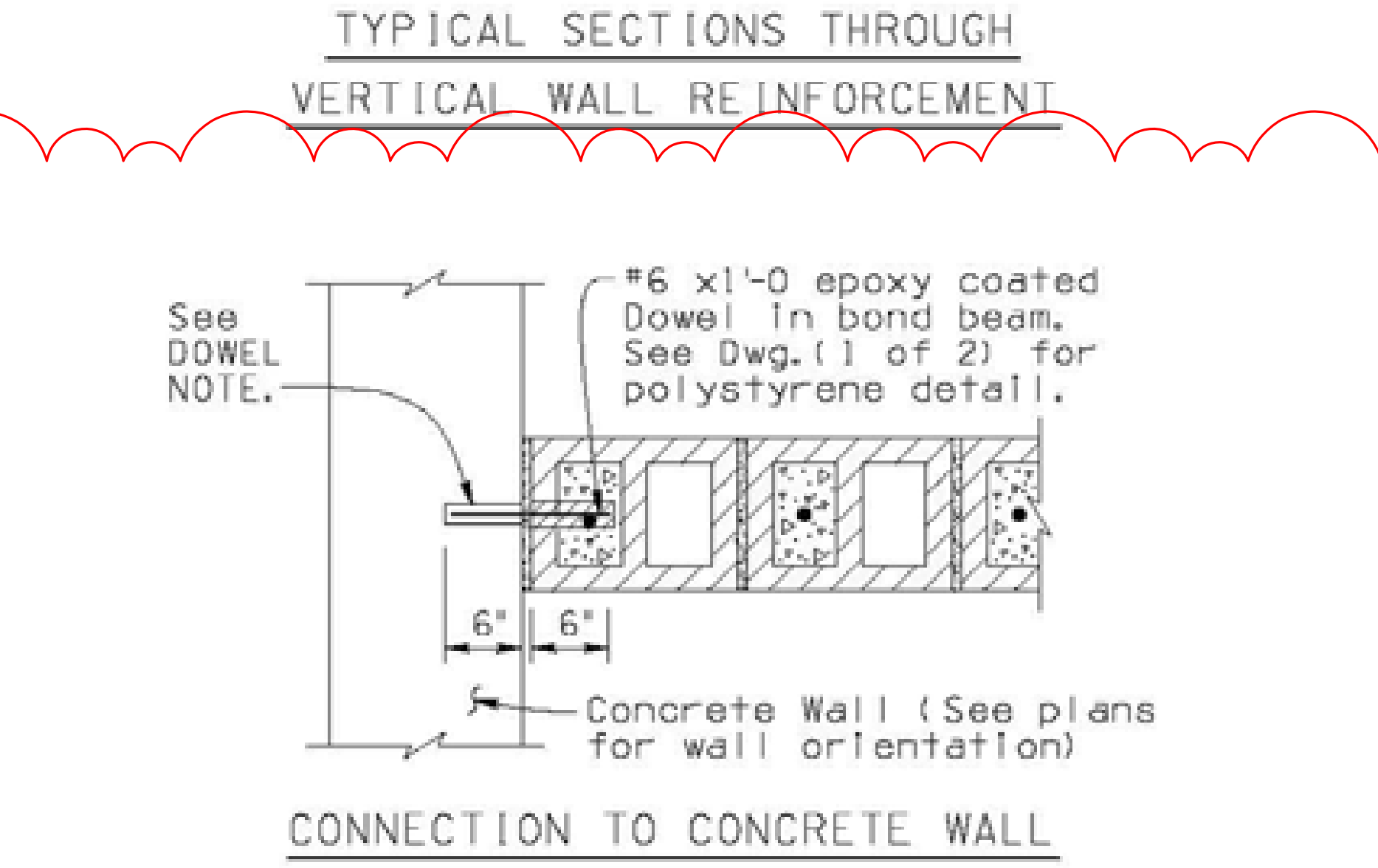
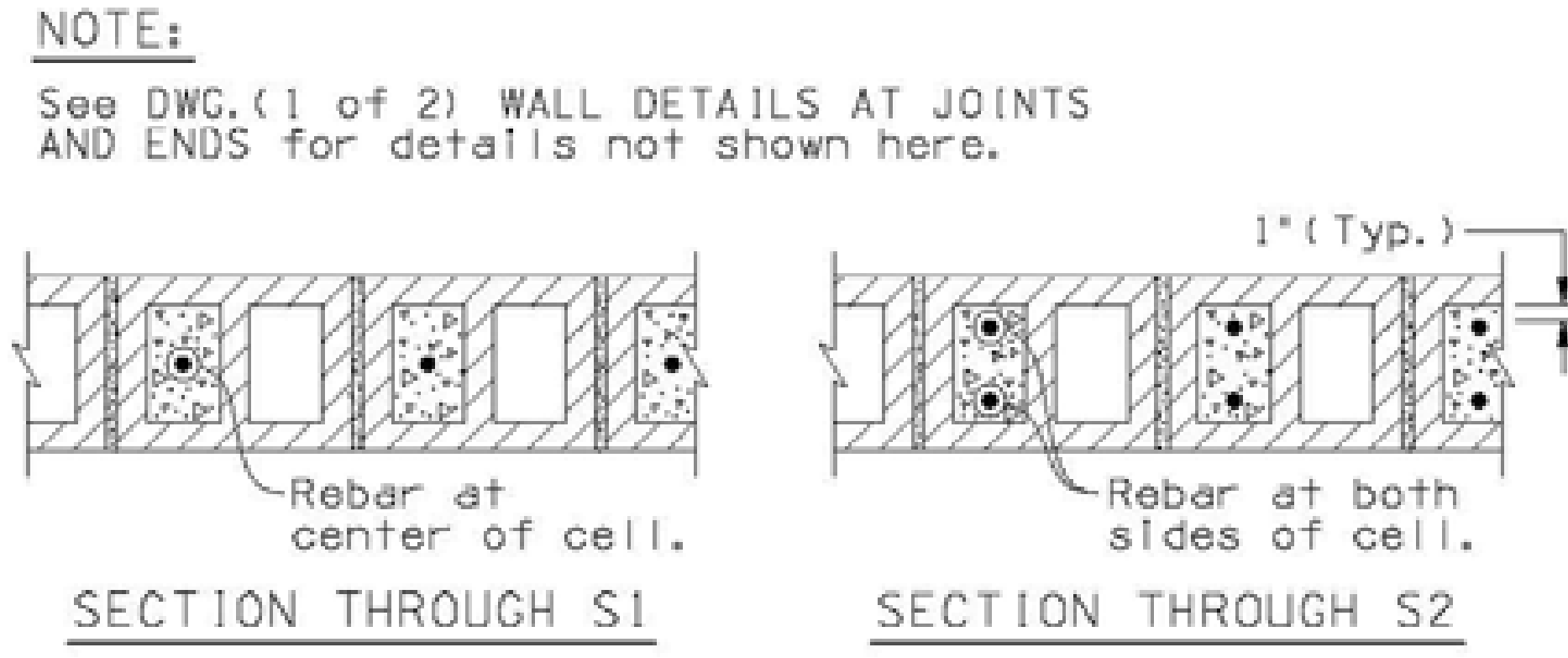
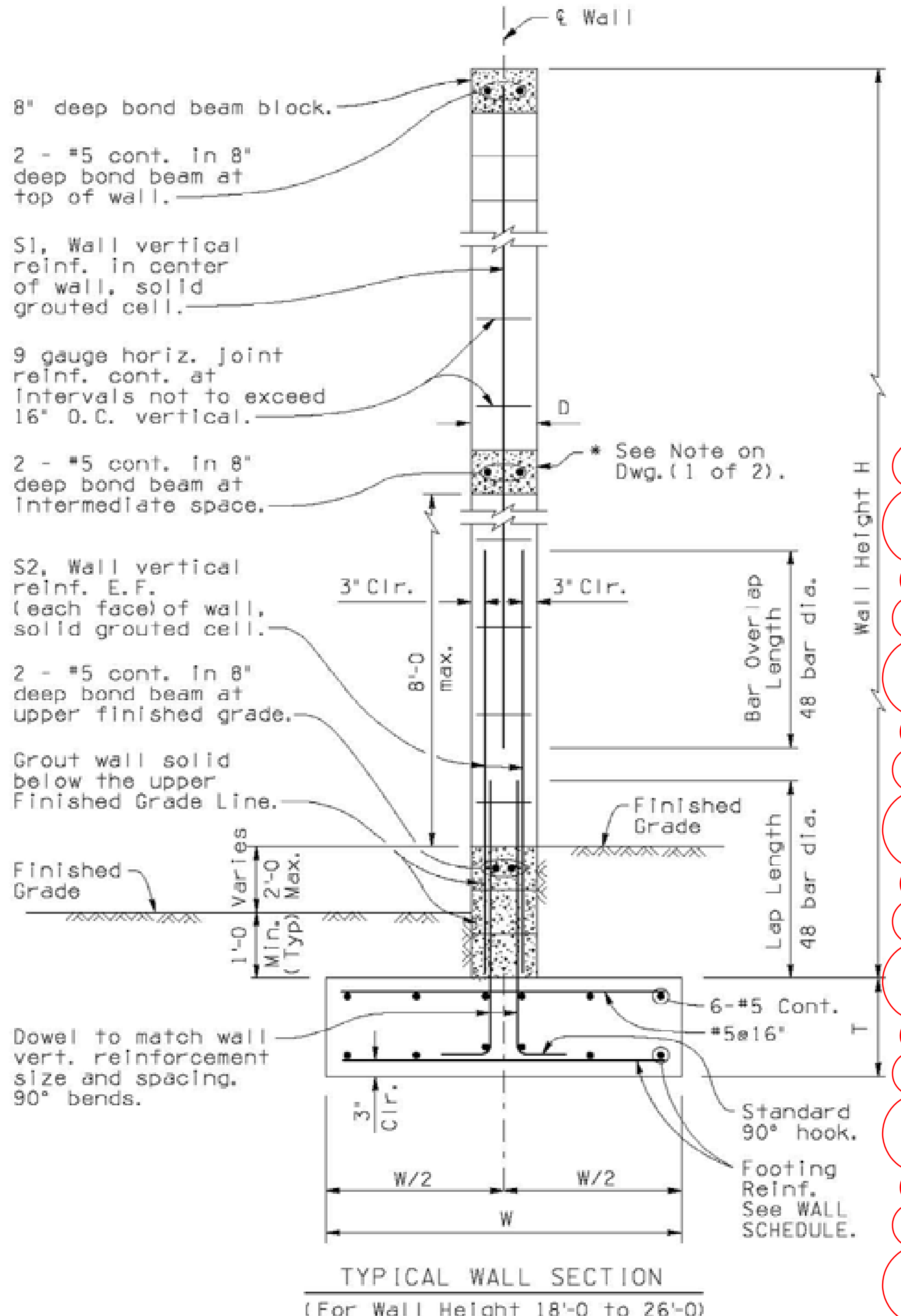
The Department has experienced inconsistency in the detailing and construction of masonry sound barrier walls at angle points. The lack of a continuous bond beam and running bond resulted in some minor separations at wall angle points. To ensure consistency with joint workmanship, a typical section at the wall angle point was incorporated into Structure Detail Drawing [SD 8.02-2](#). Designers were informed of the update January 23, 2013 through issuance of [Bridge Bulletin 2013-1](#).

Process

It is anticipated this change will apply to very few ongoing projects; a procedural change order should be executed for applicable projects. It is not required to correct wall angle points where construction has been completed, however such locations should be inspected for proper workmanship.

Attachment

Note to Designer: The information presented in this Standard Detail has been prepared in accordance with recognized engineering principles and is for general use. It should not be used for specific application without competent professional examination and verification of its suitability and applicability by a licensed professional engineer. Comments within the inner border line shall not be altered.



GENERAL NOTES (Continued):

Materials Notes:

- Masonry: f'm = 1500 psi, ASTM C90, Medium or Normal weight, Running Bond, SLUMP BLOCK unless noted otherwise.
- Mortar: ASTM C270, Type S, Cube Strength 1800 psi, ASTM C91 cement.
- Grout: ASTM C476, Type Coarse, Cube strength 2000 psi.
- Reinforcing Steel: ASTM A615, Grade 60.
- Joint Reinforcing: 9 Gauge Ladder or Truss type, Standard weight, fy=33,000 psi, ASTM A82 Wire.

Special Inspection Notes:

- Special inspection and testing, provided by the Department, are required for the masonry noise wall stem to assure quality materials and construction.
- (A) Pre-construction:
- 1) Verify correct block type to be used.
 - 2) Verify correct mortar and grout to be used.
 - 3) Verify the location, spacing, size and lap length of vertical reinforcing dowel bars and wall reinforcement that is within plus or minus 1/2" of the plan dimension as measured normal to the wall and plus or minus 2" in the longitudinal direction.
 - 4) Verify that masonry units are clean and free from dirt when placed in the wall. Masonry units shall be dry before placement.

(B) Construction:

- 1) Observe, periodically, the placement of the masonry units and the making of the mortar. Verify that the initial bed joint thickness is not less than 1/4" or more than 1"; subsequent bed joints shall not be less than 1/4" or more than 5/8" in thickness.
- 2) Observe all grout placements.
- 3) Verify horizontal joint reinforcing size, location, and spacing.
- 4) Verify that all concrete masonry units are placed in uniform and true course, level and plumb with a tolerance of 1/4" in 8 feet, non-cumulative.
- 5) Verify that concrete masonry units are placed to the desired height with joints of uniform thickness. Level, plumb and straighten before the mortar stiffens. Bond shall be plumb throughout.
- 6) Verify that all concrete masonry units are cured by sprinkling twice a day for minimum of 2 days.

NO	DESCRIPTION OF REVISIONS	DATE
1	Original Issue	4-03
2	Revised Reinforcing, General Update	02-07
3	General Update	1-10
4	Added Details for Conn. to Conc. Rd. and Ret. Wall Point	01-13

Wall Height H	Wall Thick D**	Ftg. Depth T	Ftg. Width W	Reinforcing***				Factored Average Soil Bearing Pressure (psf)
				Wall, Vertical		Footing		
				S1 Size & Spacing	S2 Size & Spacing E.F.	Bottom Trans.	Bottom Long.	
18'-0 to 19'-11	12"	1'-9	6'-0	#5@16"	#5x6'-6 @ 16"	#6@16"	6-#5	1,900
20'-0 to 21'-11	12"	2'-0	6'-3	#6@16"	#6x6'-6 @ 16"	#6@16"	6-#6	2,100
22'-0 to 23'-11	12"	2'-3	6'-6	#8@16"	#6x7'-0 @ 16"	#6@16"	6-#6	2,300
24'-0 to 26'-0	12"	2'-6	6'-9	#8@16"	#7x8'-0 @ 16"	#6@16"	6-#6	2,600

** Nominal Dimension, *** Additional Reinf. required at Control Joints.

DOWEL NOTE:
Drill 1 inch diameter hole 6 inches deep for #6 dowel. Epoxy dowel in hole with an approved epoxy adhesive. Epoxy anchorage shall develop a tensile pullout strength of 13 kips. Details of the anchorage system shall be submitted to the Engineer for approval prior to installation.

DESIGN APPROVED <i>Shafiq U. Hasan</i>	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION BRIDGE GROUP STRUCTURE DETAIL
APPROVED FOR DISTRIBUTION <i>Teri A. Nehme</i>	SOUND BARRIER WALL (MASONRY)
ROUTE	PROJECT NO.
LOCATION	FA NO.
	DRAWING NO. SD 8.02 (2 of 2)
	SHEET NO. 0F