

January 27, 2016

TO: Members of the MAG Standard Specifications and Details Committee

FROM: Jim Badowich, City of Avondale, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday, February 3, 2016 at 1:30 p.m.
MAG Office, Suite 200 (Second Floor), Ironwood Room
302 North 1st Avenue, Phoenix

A meeting of the MAG Specifications and Details Committee has been scheduled for the time and place noted above. Members of the MAG Specifications and Details Committee may attend the meeting either in person, by videoconference or by telephone conference call. If you have any questions regarding the meeting, please contact Committee Chair Jim Badowich at 623-333-4222 or Gordon Tyus, MAG staff at 602-254-6300.

In 1996, the Regional Council approved a simple majority quorum for all MAG advisory committees. If the MAG Specifications and Details Committee does not meet the quorum requirement, no action can be taken. Attendance at the meeting is strongly encouraged.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Gordon Tyus at the MAG office. Requests should be made as early as possible to allow time to arrange the accommodation.

It is requested (not required) that written comments on active cases be prepared in advance for distribution at the meeting.

MAG Standard Specifications and Details Committee
TENTATIVE AGENDA
February 3, 2016

COMMITTEE ACTION REQUESTED

1. Call to Order and Introductions
Introductions, Certificate of Appreciation for Jeff Benedict

2. Call to the Audience
An opportunity is provided to the public to address the MAG Specifications and Details Committee on items that are not on the agenda that are within the jurisdiction of MAG, or non-action agenda items that are on the agenda for discussion or information only. Citizens will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the committee requests an exception to this limit. Please note that those wishing to comment on agenda items posted for action will be provided the opportunity at the time the item is heard.

3. Re-admittance of Advisory Members
C. Buckle of SRP and P. Nebeker, Independent

4. Approval of January 6, 2016, Meeting Minutes

2. Information.

3. **Information, discussion and possible action.**

4. **Review and approve minutes of the January 6, 2016 meeting.**

Carry Forward Cases from 2015

5. Case 15-05: Proposed Revisions to Section 616
Update reclaimed water line construction specifications and create NEW Reclaimed Valve Box detail.

6. Case 15-10: Revisions to Section 321
Add subsection 321.10.5.3 "Rehabilitation Work" into the MAG Specifications.

7. Case 15-13: Revisions to Section 725
Add text to Section 725.6 to identify what to include in a concrete mix design submittal.

5. Information and discussion.
Sponsor: Warren White, Chandler

6. Information and discussion.
Sponsor: Brian Gallimore, Materials WG

7. Information and discussion.
Sponsor: Jeff Hearne, Concrete Working Group

New Cases for 2016

- 8. Case 16-01: Misc. Corrections
 A. Revise Table 310-1 by deleting “or gradation deficiency” from the Deficiency column for Type IV.
 B. Correct arrow placement on Detail 507: Encased Concrete Pipe
- 9. Case 16-02: Certificates of Compliance and Analysis
 Add requirements for certificate of compliance and certificate of analysis. Add Section 106.2.1 Certificate of Compliance, add Section 106.2.2 Certificate of Analysis, and modify Section 717.2.1.2 Crumb Rubber.
- 10. Case 16-03: Revision to Detail 251 RETURN TYPE DRIVEWAYS.
 Adjust concrete thickness and concrete class for commercial and industrial driveways to match requirements shown on Detail 250.
- 11. New and Potential Cases.
 New sponsored cases, ASTM corrections, other potential cases.

- 8. Information and discussion
 Sponsor: Bob Herz, MCDOT
- 9. Information and discussion
 Sponsor: Bob Herz, MCDOT
- 10. Information and discussion
 Sponsor: Bob Herz, MCDOT
- 11. Information and discussion

General Discussion

- 12. Working Group Reports
- 13. General Discussion
 Discussion on guardrail standards
- 14. Request for Future Agenda Items

- 12. Information and discussion.
 - Curb Ramp WG Chair: Warren White
 01/25/2016 Meeting
 - Water/Sewer Chair: Jim Badowich
 01/19/2016 Meeting
 - Asphalt, Materials and Concrete WGs
 01/21/2016 Meeting
 Chairs: Greg Groneberg, Brian Gallimore and Jeff Hearne
 - Outside ROW Chair: Peter Kandarlis
- 13. Information and discussion.
- 14. Information and discussion.

Adjournment

MEETING MINUTES FROM THE
MARICOPA ASSOCIATION OF GOVERNMENTS
STANDARD SPECIFICATIONS AND DETAILS COMMITTEE

January 6, 2016

Maricopa Association of Governments Office, Ironwood Room
302 North First Avenue
Phoenix, Arizona

AGENCY MEMBERS

Jim Badowich, Avondale, Chair	Dan Nissen, Peoria
Craig Sharp, Buckeye	* Leticia Vargas, Phoenix (Streets)
Warren White, Chandler, Vice Chair	Jami Erickson, Phoenix (Water)
* Wayne Costa, Florence	Rod Ramos, Scottsdale
Tom Condit, Gilbert	David Mobley, Surprise (proxy)
* Tom Vassallo, Goodyear	Tom Wilhite, Tempe
Bob Herz, MCDOT	* Jonathan Sorrell, Valley Metro
Lance Webb, Mesa	Gregory Arrington, Youngtown

ADVISORY MEMBERS

Don Cornelison, ARPA (proxy)	* Brian Gallimore, AGC
* Greg Groneberg, ARPA	Peter Kandaris, Independent
Arvid Veidmark, AZUCA	Paul R. Nebeker, Independent
* Tom Brennan, AZUCA	Christina Buckle, SRP (proxy)
Amanda McGennis, AGC (proxy)	

MAG ADMINISTRATIVE STAFF

Gordon Tyus

* Members not attending or represented by proxy.

GUESTS/VISITORS

Jim Anderson, Olson Precast Arizona
Jeff Rodgers, SRP

1. Call to Order

Chair Jim Badowich called the meeting to order at 1:32 p.m.

Mr. Badowich announced that he was promoted to chair, and that Warren White has been appointed as Vice Chair. He then presented a certificate of appreciation to former chair Tom Wilhite and thanked him for his service as chair for the previous three years. Mr. Badowich said there were a few new member representatives and asked for them to introduce themselves. David Mobley of Surprise said that he would be their official representative. Don Cornelison said he was filling in for ARPA members Greg Groneberg and Jeff Hearne who were unable to attend. Christina Buckle and Jeff Rodgers of SRP also were in attendance.

Chair Badowich noted that advisory members Paul Nebeker, and SRP's representative missed more meetings than allowed by the MAG bylaws, and would need a letter of interest, sponsorship by agency members, and a vote of the committee to be reinstated. Mr. Nebeker said that his schedule should allow him to attend more consistently this year. Ms. Buckle said SRP would like to continue to be represented and said they are planning to nominate her with Mr. Rogers as an alternate. Mr. Badowich said he would be willing to sponsor them, but an appointment letter is needed before a vote at the next meeting.

2. Call to the Audience

Amanda McGennis noted that Jeff Benedict was no longer able to serve on the committee due to his company transferring him to California. She asked if a certificate recognizing his service could be presented. Chair Badowich agreed that this would be appropriate considering Mr. Benedict's long service on the committee and chair of the asphalt working group. Mr. Tyus said he could create the certificate, and Ms. McGennis said she would send Mr. Tyus updated contact information.

3. Approval of Minutes

The members reviewed the September 2, 2015 meeting minutes. Dan Nissen moved to accept the minutes as written. Bob Herz seconded the motion. A voice vote of all ayes and no nays was recorded.

Carry Forward 2015 Cases

4. Case 15-05: Revise Section 616 Reclaimed Water Line Construction and Add New Reclaimed Valve Box Detail.

Warren White handed out an updated version of the case at the meeting. He said the purpose of the case was to provide a square frame option, which is shown in the revised Detail 270-2. Asterisks were placed next to the new changes which included the title revision, and the option to have the cover marked "NONPOTABLE WATER VALVE" as an alternative to "RECLAIMED WATER VALVE." The longer alternate title required the lettering to be ½"

rather than $\frac{3}{4}$ " high. Mr. Herz asked about the width of the lettering. Mr. White said he was unsure of the exact width, only that it was based on the CAD font fitting the space allowed. He said Detail 270 would become 270-1 and the title changed to add "ROUND" before the frame and cover text. It was also thought that the lettering should be noted as raised $\frac{1}{16}$ " to match Detail 270-1. Lance Webb asked if the lid should be deeper, such as the round one in 270-1. Mr. White said he didn't think it was necessary, because the square shape made it less likely to rattle and pop out.

Paul Nebeker asked if Nenah Foundry had been contacted. Mr. White said they sent sample detail drawings that were used in developing the draft detail. Mr. Herz asked if the detail should show the round to square transition. Mr. White said that although the details from Nenah were shown this way, the draft detail, and boxes he has seen, go directly from round to a square box sitting on top of it. Paul Nebeker agreed that this was similar to what he saw in the field.

Mr. White also thought Section 616.2 should reference Details 270-1 and 270-2 for frame and covers as shown on the cover page of the case.

There was discussion about the use of round boxes that are painted purple. Comments included that the paint can wear off, and that black pipe is difficult to paint purple. Mr. Nebeker said it typically is painted white first. Jami Erickson said Phoenix uses round boxes, but the lids have a triangle shape on top to help differentiate them. Mr. Kandarlis said the triangle shape is also often used for monitoring wells.

5. Case 15-10: Add Subsection 321.10.5.3 "Rehabilitation Work" into the MAG Specifications.

Sponsor Brian Gallimore was not in attendance so Dan Cornelison filled in. He said the case will be taken up at the next Asphalt/Materials Working Group meeting. Mr. Badowich said that Mr. Gallimore had planned to give a presentation on the issue during the meeting. Mr. Cornelison said that he would have to defer the presentation and get it on a future agenda.

6. Case 15-13: Add text to Section 725.6 to Identify what to Include in a Concrete Mix Design Submittal.

Sponsor Jeff Hearne was not in attendance so Dan Cornelison said that this case too would be reviewed at the next working group meeting. He said they have done some research on it, and hope to finalize it soon.

New Cases for 2016

7. Case 16-01: Miscellaneous Corrections A.

Bob Herz started the 2016 Miscellaneous Corrections case with a recommended deletion in Table 310-1. The memo states: In Section 310 PLACEMENT AND CONSTRUCTION OF AGGREGATE BASE COURSE, revise Table 310-1 by deleting "or gradation deficiency"

from the Deficiency column for Type IV. His rationale was that gradation deficiency was unrelated to plasticity deficiency and so it was inappropriate to include in this table. He asked the committee if they agreed or disagreed and if they noticed any other changes needed to the table to let him know. Mr. Tyus answered a question about the sponsorship of the corrections case. He said that other corrections can be added to the case, and if they are sponsored by other representatives, they would be added to the list of case sponsors.

8. Case 16-02: Add Section 106.2.1 Certificate of Compliance, add Section 106.2.2 Certificate of Analysis, and modify Section 717.2.1.2 Crumb Rubber.

Bob Herz handed out a new case with the purpose to define the requirements for the certificate of compliance and the certificate of analysis referenced in Section 106.2 and other sections of the MAG specifications, and to modify Section 717.2.1.2 Crumb Rubber to delete references to ADOT specifications for certificates of compliance. The third page of the handout highlights MAG references to “Certificates of Compliance.” Mr. Herz said the added language comes from the current ADOT specifications but has had a little wordsmithing done to adapt it for MAG. Mr. Herz noted that with the requirements for the certificates added into the MAG specs, the ADOT reference would no longer be necessary, which would be more convenient since not everyone has the ADOT document available. He also said that some minor changes to crumb rubber specification in Section 717.2.1.2 have been made.

Jim Badowich asked if the Asphalt Working Group has seen it. Bob Herz said they are welcome to review it, but he is still sponsoring the case. Don Cornelison said he would add it to the agenda for the next working group meeting.

9. Case 16-03: Revision to Detail 251 RETURN TYPE DRIVEWAYS to adjust concrete thickness and concrete class for commercial and industrial driveways to match requirements shown on Detail 250.

Bob Herz introduced a new case with revisions to Detail 251 that would change the concrete thickness from 6” to 9” for commercial and industrial driveways, change the concrete from Class B to Class A for commercial and industrial driveways, and clarify payment limits for curb & gutter and for the driveway. He said this thickness would also match the apron on valley gutters.

He noted that MCDOT uses Detail 250 for residential driveways and Detail 251 for commercial. He asked members if anyone used Detail 251 for residential purposes. If not, he would prefer to remove the residential option. Jim Badowich said he has seen them in the North Valley around Cave Creek. Rod Ramos said Scottsdale has its own supplement, and the detail originally was from Phoenix. Tom Wilhite said they don’t use it for new construction, but reconstruction. Lance Webb said they were used in parts of Mesa. Craig Sharp said Buckeye has a similar driveway using its own detail. Jim Badowich suggested that the residential option be left on the detail; however, he wanted to increase the maximum radius to 20’, which is common in Avondale. Warren White commented on the difficulty of curb ramp placement on this driveway detail.

Bob Herz also included in the handout Details 262 and 263. He asked whether the committee wanted to change the concrete thickness to 9” rather than 6” on these to match other MAG details. He also explained that Detail 262 does not meet the new 4’ minimum width for the walkway route around the alley entrance. He said it would need to be modified similar to what was done on Detail 250-2 to make it ADA compliant if it is still being used. Tom Wilhite said they use Detail 260 for alley entrances where there is limited right-of-way. He said he has seen a depressed roll curb used in Phoenix, which may be another option. Warren White said Chandler has tried different roll curb thicknesses including 2” and 4.” Rod Ramos said that since there were no markups on the handouts it was difficult for the group to focus on proposed revisions. He suggested having a review by the working group first. Jim Badowich said he supports making the thickness 9” to be consistent. Bob Herz said he intends this case to focus only on Detail 251, and that the other changes discussed could be reviewed by working groups and/or presented as future cases.

10. New or Potential Cases.

Tom Wilhite said he is planning to submit a case that modifies the concrete scupper Detail 206. The modification would use curbing instead of a guardrail to delineate the drop-off point of the scupper. They made this modification when implementing a LID project in Tempe. Warren White said they use a railing when the drop is greater than 30.” Mr. Wilhite explained the scupper was flared on both sides. Rod Ramos said they use an offset of 2’ for bicycle safety.

11. Working Group Reports

Chair Badowich asked for reports from the working group chairs.

a. **Curb Ramp Working Group**

Warren White said the group met twice since the last committee meeting. The last meeting was on December 14 and the minutes were included in the packet. Also included were draft details for radial and directional curb ramps. He said additional revisions were discussed during the meeting, and he hoped to have them ready to present as a case in March. The next meeting of the working group is planned for Monday, January 25th, at 1:30 in the MAG Cottonwood room.

b. **Water/Sewer Issues Working Group**

Jim Badowich said he will continue to chair the Water/Sewer Working Group for now. Bob Herz recommended moving it back to the third Tuesday of each month because his schedule will allow him to attend this year, and then it wouldn’t conflict with the Asphalt/Concrete Working Group meetings. Mr. Badowich agreed and set the next meeting for Tuesday, January 19th, at 1:30 in the MAG Cottonwood room.

c. **Asphalt, Materials and Concrete Working Groups**

Don Cornelison said the next meeting of the Asphalt Working Group is scheduled for Thursday, January 21st, at noon. The Materials Group will follow and the Concrete meeting should begin around 1:00 p.m. The meetings will be held in the ARPA office, 916 W Adams Street, Phoenix.

d. Outside ROW Working Group

Peter Kandaris said he has found engineers willing to help review specs and details but still needed help drafting the initial specifications. He said he will continue to work via email until he has something to present. Jim Badowich suggested a case on backflow prevention. Ms. Erickson said Phoenix has supplements. Paul Nebeker commented that 12” ones have never been approved for use, and he had to replace them with 10” ones. He also noted that in New Mexico that are still using swing checks. Warren White asked Mr. Kandaris if he wanted them to send him agency details, and Mr. Kandaris said yes.

12. General Discussion

Gordon Tyus told the committee the 2016 update packets have been printed and are available for sale at the same price as previous revisions. The price for the 2015 books in inventory are the same and if purchased would include the 2016 update. He also demonstrated where on the MAG website to download the new 2016 revision to the MAG Specs and Details document. He explained some of the new features including navigating back to the table of contents by clicking on the bottom page number, and hyperlinks added for all ASTM references.

Mr. Tyus explained that he met with representatives from ASTM on December 1, and one of the additions to the ASTM website was permanent links to each ASTM specification. He said he went through the MAG book and added over 470 links to ASTM references. Mr. Tyus showed how if you have the ASTM compass setup on your system it would go directly to the HTML page for the spec and allow you to download the PDF version. If a user does not have the subscription they would be directed to a page where they could buy and download the spec. Another issue discussed with the ASTM representatives was the inclusion of AASHTO specs in the compass portal system. Mr. Tyus asked them to see if a group discount was available to add this option to MAG’s ASTM Compass subscription. He had not heard back at the time of the meeting.

He also noted that there were several ASTM references that were out-of-date, removed, or superseded. A list of them was included in the packet, but he said he also copied several more detailed packets that highlighted where the reference in MAG was, along with the historic ASTM reference or new superseded one. He asked members to review these ASTM references and perhaps develop a case or cases that made the necessary corrections.

13. Future Agenda Items

Chair Badowich asked the committee for any possible future agenda items. None were announced.

14. Adjournment

Seeing no further business, Chair Badowich adjourned the meeting at 3:05 p.m.

2015 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

(Updated information can be found on the website: <http://www.azmag.gov/Projects/Project.asp?CMSID=1055&CMSID2=7154>)

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE	
	CARRY FORWARD CASES FROM 2015						
15-05	Case 15-05: Proposed Revisions to Section 616 Reclaimed Water Line Construction and NEW Reclaimed Valve Box detail 270-2. Update Detail 270-1.	Chandler	Warren White	03/04/2015 01/06/2016		0 0 0	Yes No Abstain
15-10	Case 15-10: Add subsection 321.10.5.3 "Rehabilitation Work" into the MAG Specifications.	Materials WG	Brain Gallimore	06/03/2015 07/23/2015		0 0 0	Yes No Abstain
15-13	Case 15-13: Add text to Section 725.6 to identify what to include in a concrete mix design submittal.	Concrete WG	Jeff Hearne	06/03/2015		0 0 0	Yes No Abstain
	NEW CASES FOR 2016						
16-01	Case 16-01: Miscellaneous Corrections: A. Revise Table 310-1 by deleting "or gradation deficiency" from the Deficiency column for Type IV. B. Correct arrow placement on Detail 507: Encased Concrete Pipe	MCDOT	Bob Herz	01/06/2016 01/26/2016		0 0 0	Yes No Abstain
16-02	Case 16-02: Add requirements for certificate of compliance and certificate of analysis. Add Section 106.2.1 Certificate of Compliance, add Section 106.2.2 Certificate of Analysis, and modify Section 717.2.1.2 Crumb Rubber.	MCDOT	Bob Herz	01/06/2016		0 0 0	Yes No Abstain
16-03	Case 16-03: Revision to Detail 251 RETURN TYPE DRIVEWAYS. Adjust concrete thickness and concrete class for commercial and industrial driveways to match requirements shown on Detail 250.	MCDOT	Bob Herz	01/06/2016		0 0 0	Yes No Abstain
16-04						0 0 0	Yes No Abstain
16-05						0 0 0	Yes No Abstain



Chandler • Arizona
Where Values Make The Difference

MEMORANDUM

Case # 15-05

DATE: January 6, 2016
TO: MAG Specifications and Details Committee Members
FROM: Warren White, City of Chandler Representative
SUBJECT: Proposed Revisions to Detail 270 and Section 616 (UPDATE)

Purpose: Incorporate a square frame and cover intended for reclaimed water valve construction meeting ADEQ requirements (option to colored purple)

Revisions:

- New “SQUARE FRAME AND COVER AND GRADE ADJUSTMENT” Detail 270-2.
- Revise current Detail 270, FRAME AND COVER to “ROUND FRAME AND COVER” and revise detail number to 270-1.
- Revise Section 616 Reclaimed Water Line Construction as follows:

616.2 MATERIALS:

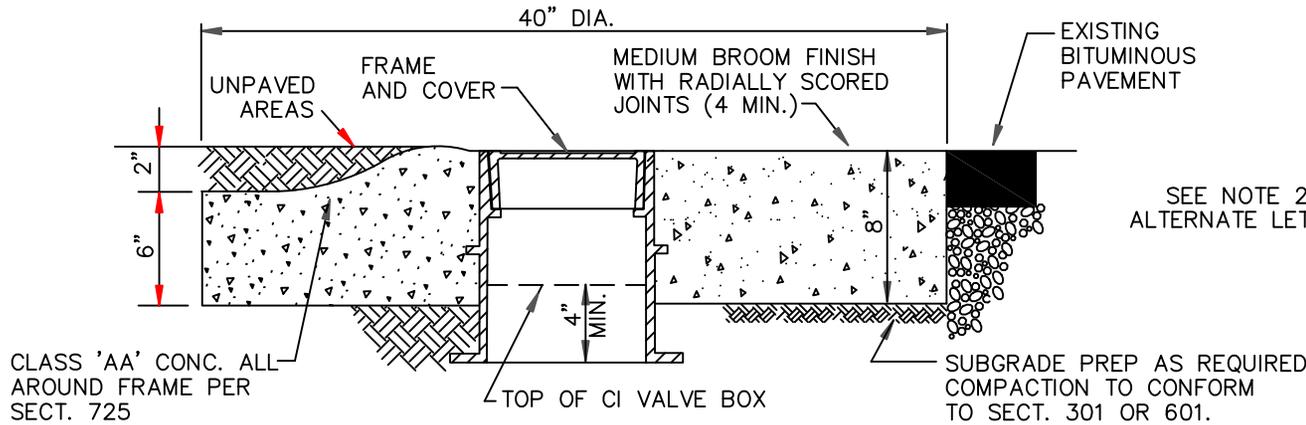
Pipe materials shall be in accordance with Section 610.

Valves shall be in accordance with Sections 610 and 630.

Valve boxes shall be in accordance with Section 345, this Section and Detail 391-1 and 391-2. Frame and cover shall be in accordance with Detail 270-1 or 270-2, per Agency requirements. Manholes shall be in accordance with Section 625, 787 and this Section, and applicable Details.

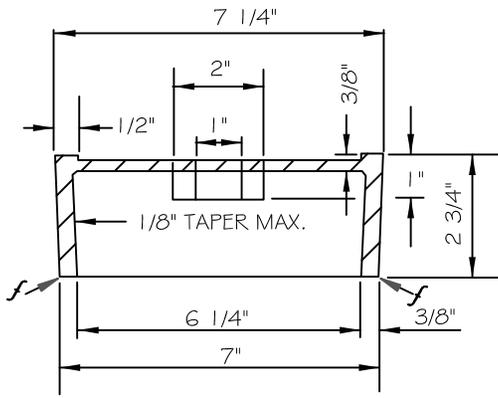
Notes:

Arizona Administrative Code R18-9 Article 6 Reclaimed Water Conveyances requires mechanical appurtenances (valves) to be colored purple or legibly marked to identify it as part of the reclaimed water distribution system and distinguish it from systems for potable water distribution and sewage systems. Some municipalities have been using a square frame and cover for this purpose.

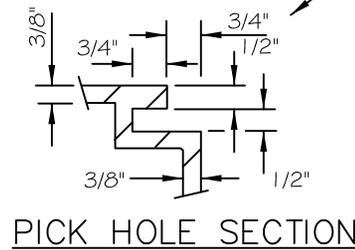


SEE NOTE 2 FOR ALTERNATE LETTERS

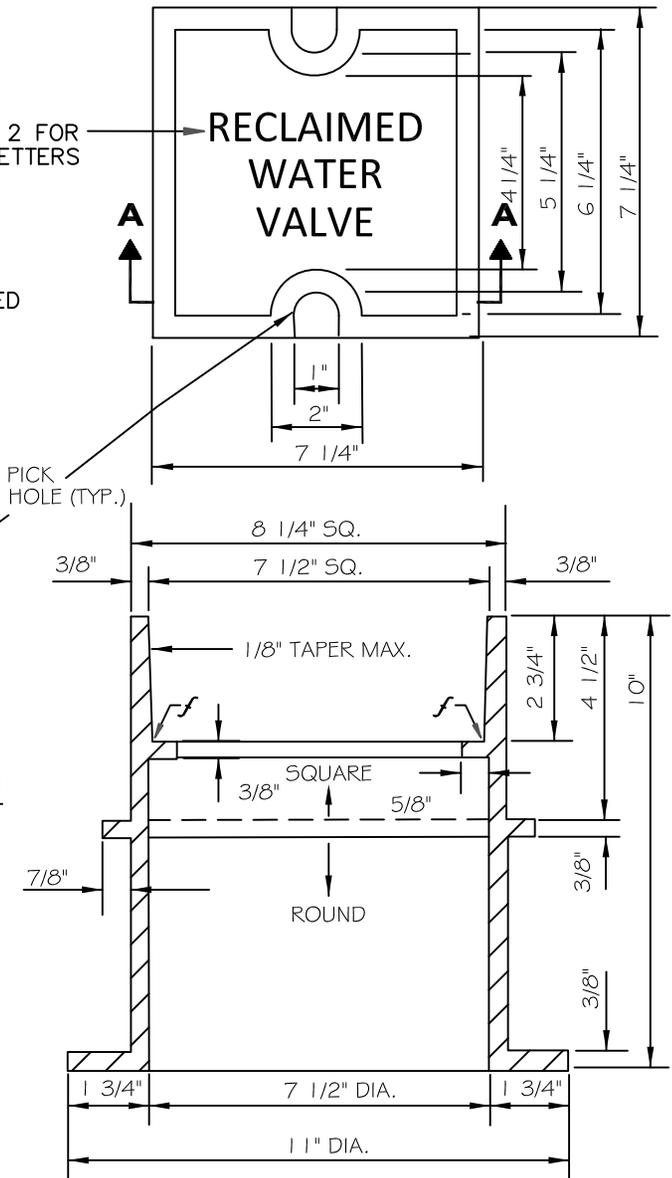
GRADE ADJUSTMENT FOR FRAME AND COVER



COVER SECTION A-A



PICK HOLE SECTION



C.I. FRAME AND COVER

NOTES:

1. CASTING TO CONFORM TO SECT. 787.
2. LETTERS ON COVER TO BE AS FOLLOWS, PER AGENCY REQUIREMENTS:
3/4" HIGH "RECLAIMED WATER VALVE" OR 1/2" HIGH "NONPOTABLE WATER VALVE".
LETTERS TO BE RAISED 1/16". TYPE OF LETTERS TO BE SUBMITTED FOR APPROVAL.
3. *f* INDICATES MACHINE FINISHED SURFACE.
4. VALVE BOX SHALL HAVE A ROUND BOTTOM TO ACCOMMODATE RISER PIPE.

DETAIL NO.
270-2



STANDARD DETAIL
ENGLISH

SQUARE FRAME AND COVER
AND GRADE ADJUSTMENT

REVISED
DRAFT
01-01-2017

DETAIL NO.
270-2

Date: May 29, 2015

To: MAG Specifications and Details Committee

From: Brian Gallimore, Chairman Materials Working Group

Subject: Revisions to Sections 321

Case # 15-10

PURPOSE: Incorporate revisions to Section 321, "*Rehabilitation Work*" into the MAG Specifications.

REVISIONS:

321.10.5.3 - Added this subsection to allow for some relief on asphalt density when provisions for reworking substandard bases (removals) or existing asphalts (overlays) to meet Section 310 or Section 321 for overlays are missing from bid documents or scope of work.

Currently, industry is being held to same standards on spot removals and edge mill/overlays as new construction over optimal base materials.

TABLE 321-6	
ASPHALT PAVEMENT THICKNESS PAYMENT REDUCTION	
For Thickness Deficiency of More Than 0.25 inches and less than 0.50 inches	
Total Specified Asphalt Pavement Thickness exclusive of ARAC (if any)	Reduction in Payment Applied to asphalt concrete Except ARAC layers (if any)
Less than 1.5 inches	50%
1.50 inches to 1.99 inches	33%
2.00 inches to 2.49 inches	25%
2.50 inches to 2.99 inches	20%
3.00 inches and over	17%

321.10.5 Density:**321.10.5.1 Pavement 1-1/2 Inches or Less in Nominal Thickness:**

Compaction shall consist of a “Rolling Method Procedure” using an established sequence of coverage with specified types of compactors. A pass shall be defined as one movement of a compactor in either direction. Coverage shall be the number of passes as are necessary to cover the entire width being paved.

The rolling sequence, the type of compactor to be used, and the number of coverages required shall be as shown in Table [321-7](#).

TABLE 321-7				
ROLLING SEQUENCE FOR LIFT THICKNESS 1½” OR LESS				
Rolling Sequence	Type of Compactor		No. of Coverages	
	Option No. 1	Option No. 2	Option No. 1	Option No. 2
Initial	Static Steel	Vibrating Steel	1	1
Intermediate	Pneumatic Tired	Vibrating Steel	4	2- 4*
Finish	Static Steel	Static Steel	1-3	1-3

* Based on the roller pattern which exhibits the best performance.

The Contractor shall select the option for compaction and, when pneumatic-tired compactors are used will designate the tire pressure. Steel wheel compactors shall not be used in the vibratory mode for courses of one inch or less in thickness nor when the temperature of the asphaltic concrete falls below 180 degree F. Initial and intermediate compaction shall be accomplished before the temperature of the asphaltic concrete falls below 200 degree F.

Compaction will be deemed to be acceptable on the condition that the asphaltic concrete is compacted using the type of compactors specified, ballasted and operated as specified, and with the number of coverages of the compactors as specified.

321.10.5.2 Pavement Greater than 1-1/2 Inches in Nominal Thickness:

Achieving the required compaction is the responsibility of the contractor. The number and types of rollers is the contractor’s responsibility and shall be sufficient to meet these requirements.

Compaction effort is not solely dependent on the type and/or quantity of equipment on the job, but also includes the speed at which such equipment is utilized. It shall be the contractor’s responsibility to prove to the agency that every effort has been made to achieve the greatest possible density on projects that do not have provisions for reworking the base materials to compaction standards set forth in Section 301 for pavements over native subgrade, Section 310 for pavements over aggregate base course (ABC), or Section 321 (overlays).

In-place air voids shall be determined in accordance with AASHTO T-269 utilizing cores taken from the finished pavement. The maximum theoretical density used in the determination of in-place air voids will be the average value from the acceptance samples determined for the Lot as outlined in [321.10.1](#).

The Engineer will designate one random test location for each subplot and the acceptance laboratory will obtain one core from that location. Regardless of subplot quantities or boundaries, a minimum of one core will be obtained per residential street and a minimum of one core per travel lane for collector and arterial streets. The outside one foot of each pass of the pavement course or any unconfined edge will be excluded from testing. The Engineer may exclude areas from the compaction lot that are not accessible by normal compaction equipment.

The Contractor will provide the traffic control to facilitate any coring operations necessary for compaction acceptance.

Cores will be taken per the Asphalt Concrete Coring Method. This method can be found in Section [321.14](#). Acceptance testing results will be furnished to the contractor within five working days of receipt of samples by the acceptance laboratory.

If the pavement density has in-place voids of 8.0% or less, the asphalt concrete will be paid for at the contract unit price. If the pavement density has in-place voids greater than 8.0%, the deficient area will be evaluated within the subplot by coring at maximum intervals of 100 feet from the deficient core(s). If both cores in a subplot are deficient, 3 to 4 additional cores may be necessary to re-evaluate acceptance. The in-place voids of all the original core(s), whether deficient or acceptable, will be averaged with the in-place voids of the cores taken for re-evaluation to determine compliance with the acceptance requirements. If the average of the in-place voids is greater than 8.0% then Table [321-8](#) shall apply to the subplot. Additional cores may be required to define the limits of the deficient area, and shall not be used for re-evaluating acceptance.

TABLE 321-8		
PAVEMENT DENSITY PENALTIES		
Limits of In-place Air Voids for design lift thicknesses 1.5 inches and greater	When the contracting agency is the owner: Payment Reduction (\$ per ton of asphalt concrete)	When the contracting agency is not the owner (i.e. permits): Corrective Action
Below 3.0%	Removal* or EA	Removal* or EA
3.0% to below 4.0%	\$10.00	EA and Type II Surry Seal
4.0% to 8.0%	Full Payment	No Corrective Action
Greater than 8.0% to less than 9.0%	\$6.00	EA
9.0% to 10.0%	\$10.00	EA and Type II Surry Seal
Greater than 10.0%	Removal* or EA	Removal* or EA

NOTES: *The Contractor shall remove and replace the entire subplot that is deficient.
EA = Engineering Analysis per Section [321.10.6](#)
Removal for In-place Air Voids greater than 11.0% is not eligible for Section [321.10.6](#).

[321.10.5.3 Rehabilitation Work](#)

[In-place voids on rehabilitation work should take into consideration the underlying base materials and not be subject to penalties in Table 321-8, other than in place voids shall not exceed 10%. Rehabilitation work shall be considered any mill and overlays or remove and replace projects that do not have provisions for reworking the base materials to compaction standards set forth in Section 301 for pavements over native subgrade, Section 310 for pavements over aggregate base course \(ABC\), or Section 321 \(overlays\).](#)

OR

321.10.5.3 Placement of Pavement on Surfaces with Questionable Support Characteristics: This section shall only apply when any mill and overlay or remove and replace projects **do not** have provisions for reworking the base materials to compaction standards set forth in Section 301 for pavements over native subgrade, Section 310 for pavements over aggregate base course (ABC), or Section 321 (overlays). When pavement is to be placed on a surface suspected by the Contractor of having conditions that may adversely impact compaction, the Contractor at their own expense and prior to paving may demonstrate to the agency that the existing surface has characteristics that may prevent obtaining the standard required density. Unreliable compaction conditions may result from: base materials that provide inadequate support; extremely fractured pavement that moves when subjected to various loading conditions; or milled areas where the pavement thickness was less than anticipated and breaking of the remaining underlying pavement occurs sporadically. When the agency agrees in writing that the surface conditions within a specified area may significantly impact compaction and directs that paving proceed without corrective measures, then the Contractor shall not be subject to air void penalties within the specified area unless the in place air voids exceed 10%.

321.10.6 Engineering Analysis (EA): Within 10 working days after receiving notice that a lot or subplot of asphalt concrete is deficient and is found to fall within the "Removal or EA" band per Table(s) [321-4](#), [321-5](#), and/or [321-8](#) the contractor may submit a written proposal (Engineering Analysis) to accept the material in place at the applicable penalties along with possible remediation(s) listed in the "Removal or EA" category. Engineering Analysis can also be proposed for non-removal categories of "Corrective actions" when the contracting agency is not the owner (i.e. permits).

The Engineering Analysis shall contain an analysis of the anticipated performance of the asphalt concrete if left in place. The Engineering Analysis shall also detail the effect of any proposed corrective action to the material(s) in place as it relates to the in-place material's performance. The Engineering Analysis shall be performed by a professional engineer experienced in asphalt concrete testing and mix designs.

If a lot or subplot is accepted for referee testing and the referee test results still show a deficiency, the contractor shall have ten working days to submit an engineering analysis beginning upon notification of referee test results. When an Engineering Analysis recommends that a specific lot or subplot should not be removed, the Engineering Analysis will recommend that the following penalties (Table [321-9](#)) be paid when the contracting agency is the owner, for the specific criteria being reviewed by the EA.

TABLE 321-9		
ENGINEERING ANALYSIS PENALTIES for REMOVAL* LOTS/SUBLOTS LEFT IN-PLACE		
Acceptance Criteria	Acceptance Limits	Penalty When Contracting Agency is the Owner (\$/Ton)
Asphalt Binder Content	Over 0.2% points from that Permitted	\$9.00
Laboratory Air Voids (Measured at N _{des} or 75 blows as applicable)	Less than 1.5% or Greater Than 8.0%	\$7.50
Limits of In-place Air Voids	Less than 3% or Greater than 10.0%	\$15.00

Within 15 working days, the Engineer will determine whether or not to accept the contractor's proposed Engineering Analysis.

321.11 REFEREE:

If the Contractor has reason to question the validity of any of the acceptance test results, the Contractor may request that the Engineer consider referee test for final acceptance. Any request for referee testing must describe the contractor's reasons for questioning the validity of the original acceptance test results and must clearly describe which set of acceptance tests are in question. The engineer may either accept or reject the request for referee testing. When referee testing is accepted the

725.6 MIX DESIGN PROPORTIONING:

A concrete mix design carrying the producer's designated mix number for each type of concrete being furnished under these specifications shall be submitted to the Engineer at least once each year for approval. Each design shall utilize the proper proportioning of ingredients to produce a concrete mix that is homogeneous and sufficiently workable to provide a consistent and durable concrete product that meets the specified compressive strength and other properties as required by the application.

A concrete mix design submittal shall include the mix identification number and the applicable proportions, weights, and quantities of individual materials incorporated into the mix including the size and source of concrete aggregates, the type and source of cement and fly ash or SCM, and the brand and designation of chemical admixtures or other additives.

In the event there is a modification to the mix design proportions:

(A) Modifications that do not require a new mix design submittal/approval:

- (1) Modifications which do not result in batch target weights for the fine aggregate or combined coarse aggregates changing by more than 510 percent from the original approved mix design.
- (2) Modifications to the percentage of coarse aggregate fractions that do not change the total coarse aggregate volume.
- (3) Modifications to dosages of chemical or air-entraining admixtures, within the manufacturer's recommendations.
- (4) The incorporation or elimination of chemical admixtures which are listed on the mix design to effect a change in the time-of-set (retarders or accelerators).

(B) Modifications that require a new mix design submittal/approval and may require performance verification:

- (1) Modification to the class of concrete per Table 725-1.
- (2) Modification to the type/class/source of cement, fly ash, natural pozzolan, or silica fume.
- (3) Modification to the percentage of fly ash, natural pozzolan, or silica fume.
- (4) Modification to a coarse aggregate size designation.
- (5) Modification of the type of chemical admixture, or the incorporation or elimination, of an air-entraining admixture.
- (6) Modification of coarse or fine aggregate source.



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: January 8, 2016
To: MAG Specifications and Details Committee
From: Robert Herz, MCDOT Representative
Subject: Miscellaneous Corrections

Case 16-01A

PURPOSE: Delete extraneous text.

REVISION: In Section 310 PLACEMENT AND CONSTRUCTION OF AGGREGATE BASE COURSE revise Table 310-1 by deleting “or gradation deficiency” from the Deficiency column for Type IV.

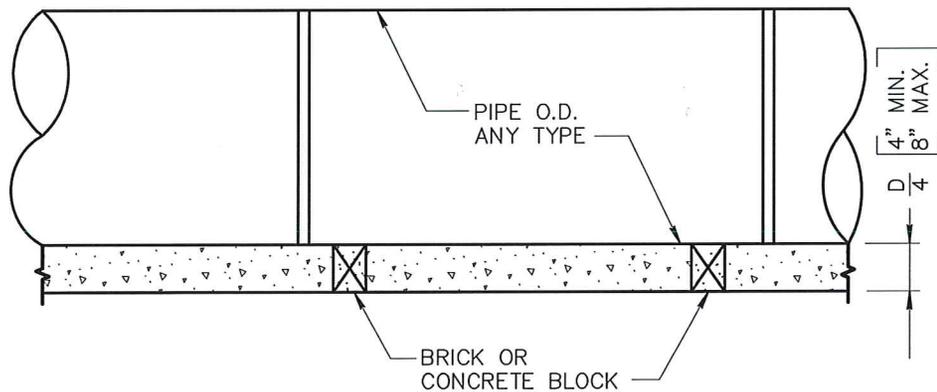
310.4 THICKNESS AND/OR PLASTICITY INDEX DEFICIENCY:

When in the opinion of the Engineer there is reason to believe that a deficiency in thickness, or an excess of plasticity exists, measurements or samples will be taken in the same pattern as that defined in Section 321. If the base has been covered or it is otherwise impractical to correct the deficiency, the corrective measures in Table 310-1 shall be taken by the Contractor at no additional cost to the Contracting Agency.

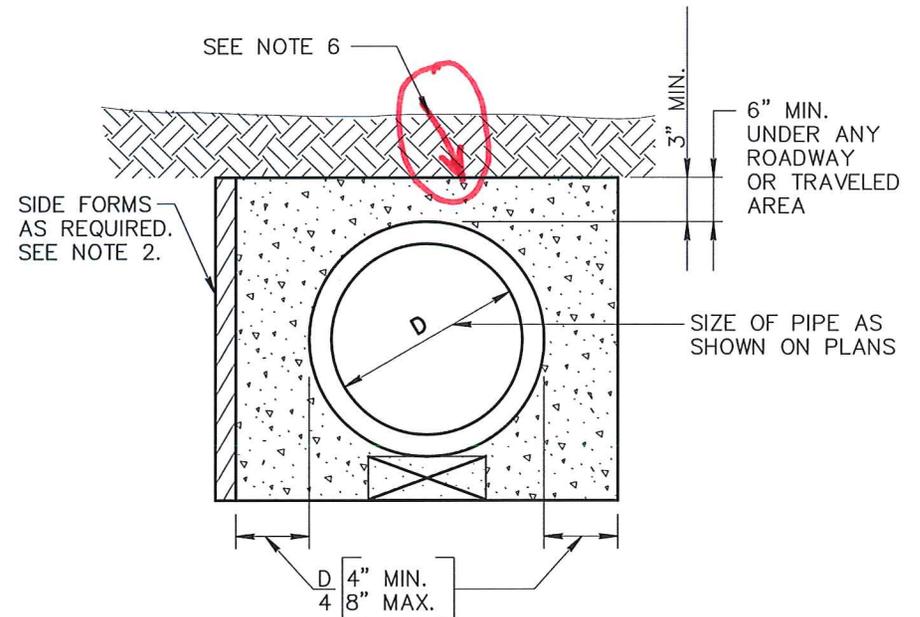
TABLE 310-1		
THICKNESS AND PLASTICITY DEFICIENCY		
Type	Deficiency	Corrective Measure
I	Less than 1/2 inch of the required thickness	No corrective measure required.
II	1/2 inch or more but less than 1 inch of the required thickness	(1) The contractor may choose to add additional material and rework the grade to meet the specification requirements. (2) The contractor may choose to increase the thickness of asphalt concrete by the amount of the aggregate base course thickness deficiency at no additional cost to the Owner. Required grade shall be met.
III	Thickness deficiency by greater than 1 inch	(1) The contractor will remove the aggregate base course and regrade the subgrade to allow the required aggregate base course layer thickness to be constructed. (2) If grades allow, the contractor may propose that the thickness of asphalt concrete be increased by the amount of the aggregate base course deficiency at no additional cost to the Owner.
IV	A plasticity index of 6 to 7 inclusive or gradation deficiency	(1) An Engineering Analysis (EA) that includes R-value testing may be prepared by the contractor to evaluate the expected performance of the aggregate base course layer. The EA may provide mitigation options for the Engineer to consider. If the Engineer accepts the plasticity index as a result of the EA, the material will be accepted at full payment. If the Engineer rejects the EA, the contractor will perform either option 2 or 3 below. (2) The contractor may choose to reprocess or treat the existing material to bring it within specification limits or remove deficient material from affected area and replace with material complying with the specifications. (3) If grades allow, the contractor may increase the thickness of asphalt concrete by 1/2-inch at no additional cost to the Owner.
V	A plasticity index of over 7	(1) The contractor may choose to reprocess or treat the existing material to bring it within specification limits or remove deficient material from affected area and replace with material complying with the specifications.

NOTES:

1. THIS DETAIL SHALL BE REQUIRED WHEN NEW OR EXISTING PIPE INSTALLATIONS WILL BE SUBJECT TO DAMAGE ANYTIME IN THE FUTURE DUE TO LACK OF PROPER COVER, AS DETERMINED BY THE ENGINEER.
2. FOR PIPE OVER 18" I.D. WOOD, METAL OR GYPSUM BOARD FORMS MUST BE USED TO FORM THE SIDES OF THE ENCASEMENT. GYPSUM BOARD FORMS MAY BE LEFT IN THE GROUND BELOW THE TOP OF THE ENCASEMENT. THIS SHALL BE OPTIONAL WITH POURING AGAINST TRENCH WALLS FOR ENCASEMENT OF 18" AND SMALLER PIPE.
3. FOR ALL SITUATIONS WHERE SIDE FORMS ARE USED, TRENCH WALLS SHALL BE OVER-EXCAVATED TO ALLOW SUFFICIENT ROOM TO OPERATE PROPER MECHANICAL COMPACTION EQUIPMENT.
4. CONCRETE WHICH SPILLS BEYOND 12" FROM THE SIDES OF THE PIPE FOR ANY REASON SHALL BE REMOVED BACK TO THE PROPER LINE PRIOR TO BACKFILLING.
5. SEE SECTION 601 FOR TRENCH PREPARATION.
6. CONCRETE TO BE CLASS 'A' PER SECT. 725.
7. COVER TO BE APPROVED BY ENGINEER.



LONGITUDINAL SECTION



END SECTION

DETAIL NO.

507



STANDARD DETAIL
ENGLISH

**ENCASED CONCRETE PIPE
(FOR SHALLOW INSTALLATION)**

REVISED

01-01-1998

DETAIL NO.

507

CASE 16-01 B



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: January 6, 2016

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Add to Section 106.2 the requirements for certificate of compliance and certificate of analysis. **Case 16-02**

PURPOSE: Define the requirements for the certificate of compliance and the certificate of analysis referenced in Section 106.2 and other sections of the MAG specifications. Modify section **717.2.1.2 Crumb Rubber** to delete references to ADOT specifications for certificates of compliance.

REVISIONS: Add section **106.2.1 Certificate of Compliance**, add section **106.2.2 Certificate of Analysis**, and modify section **717.2.1.2 Crumb Rubber**.

SECTION 106 - CONTROL OF MATERIALS

106.2 SAMPLES AND TESTS OF MATERIALS:

All materials to be incorporated in the work may be subject to sampling, testing and approval, and samples furnished shall be representative of the materials to be used. The Engineer may select samples, or may require that samples be delivered by the Contractor to a laboratory designated by the Engineer.

The Contracting Agency will pay for the initial or normal test required by the Engineer to guard against unsuitable materials or defective workmanship. Additional tests, required due to failure of the initial or normal test(s), shall be paid for by the Contractor. The Engineer will designate the laboratory which will accomplish the additional test(s).

The procedures and methods used to sample and test materials will be determined by the Engineer. Unless otherwise specified, samples and tests will be made in accordance with either: the Materials Testing Manual of the Contracting Agency; the standard methods of AASHTO or ASTM, which were in effect and published at the time of advertising for bids.

The laboratory responsible for the test shall furnish at least one copy of the test results to the Contracting Agency or his designated representative, to the Contractor, and to the appropriate material supplier.

With respect to certain manufactured materials, the Engineer may permit the use of some materials prior to sampling and testing provided they are delivered with either a certificate of compliance or analysis or both, stating that the materials comply in all respects with the requirements of the specifications. These certificates shall be furnished in triplicate and clearly identify each delivery of materials to the work area. The certificates shall be signed by a person having legal authority to bind the supplier or manufacturer.

106.2.1 Certificate of Compliance: A Certificate of Compliance shall be submitted on the manufacturer's or supplier's official letterhead, and shall contain the following information:

1. The current name, address, and phone number of the manufacturer or supplier of the material or equipment.
2. A description of the material or equipment supplied.
3. Quantity of material represented by the certificate.
4. Means of material identification, such as label, lot number, or marking.
5. A statement that the material complies in all respects with the requirements of the cited specifications. Certificates shall state the name of the specific cited specifications, such as AASHTO M 320, ASTM C494, or specific table or subsection of the Specifications or Special Provisions.
6. A statement that the individual identified in item seven below has the legal authority to bind the manufacturer or the supplier of the material.
7. The name, title, and signature of the responsible individual. The date of the signature shall also be given.

Each of the first six items specified above shall be completed prior to the signing of the certificate as defined in item seven. No certificate will be accepted that has been altered, added to, or changed in any way after the authorized signature has been affixed to the original certificate. However, notations of a clarifying nature, such as project number, contractor, or quantity shipped are acceptable, provided the basic requirements of the certificate are not affected.

A copy or facsimile reproduction of the original certificate will be acceptable; however, the original certificate shall be made available upon request.

106.2.2 Certificate of Analysis: A Certificate of Analysis shall include all the information required for a Certificate of Compliance and, in addition, shall include the results of all tests required by the specifications.

SECTION 717 - ASPHALT-RUBBER ASPHALT CONCRETE

717.2.1.2 Crumb Rubber: Crumb Rubber shall meet the gradation requirements as shown in Table 717-1 below when tested in accordance with Arizona Test Method 714.

Sieve Size	Percent Passing Type B
2.36 mm (#8)	
2.00 mm (#10)	100
1.18 mm (#16)	65 - 100
600 µm (#30)	20 - 100
300 µm (#50)	0 - 45
75 µm (#200)	0 - 5

The crumb rubber shall have a specific gravity of 1.15 ± 0.05 and shall be free of wire or other contaminating materials, and shall contain not more than 0.5 percent fabric. Calcium carbonate, up to four percent by weight of the crumb rubber, may be added to prevent the particles from sticking together.

Crumb rubber shall be processed at ambient temperature from whole scrap tires or shredded tire materials. Use of crumb rubber granules produced from a cryogenic process is prohibited. The tires from which the crumb rubber is produced shall be from automobiles, trucks, or other equipment owned and operated in the United States.

Certificates of Compliance conforming to Arizona State Department of Transportation Standard Specifications for Road and Bridge Construction Section 106.05 shall be submitted. In addition, the Certificates shall that confirms that the rubber is a crumb rubber, derived from processing at ambient temperature, whole scrap tires or shredded tire materials; and the tires from which the crumb rubber is produced is taken from automobiles, trucks, or other equipment owned and operated in the United States. complies with the gradation, specific gravity, and contaminating materials of this specification. The Certificates shall also verify: that

- The processing does not produce, as a waste product, casings or other round tire material that can hold water when stored or disposed of above the ground.
- The crumb rubber to be used in ARB shall be the type is produced through a process of mechanical grinding at ambient temperature. Use of crumb rubber granules produced from a cryogenic process is prohibited.
- The tires from which the crumb rubber is produced were from automobiles, trucks, or other equipment owned and operated in the United States. (Certificates of Compliance conforming to Arizona State Department of Transportation Standard Specifications for Road and Bridge Construction Section 106.05 shall be submitted.)

REFERENCE INFORMATION:

MAG References to 'Certificates of Compliance':

Lime Stabilization or Modification of Subgrade Section 309.2.3 Lime Slurry

(A certificate of compliance shall be provided to the Engineer for each load of lime applied at the project.)

Microsurfacing Specifications Section 331.2 Materials (Certificates of Compliance)

shall accompany each delivery of emulsion.)

Concrete Structures Section 505.5.4.2 Anchoring Materials

(The Contractor shall submit Certificates of Compliance or Analysis, complete with supporting documentation, to the Engineer for all epoxy materials to be used for anchoring dowels on a specific project, in accordance with the requirements of Section 106.2.)

Section 505.6.3.3 Construction Requirements, paragraph (1) General

(Certificates of Compliance conforming to the requirements of Section 106.2 shall also be submitted by the Contractor.)

Table 711-2, Note 4

(The blend percentages shall be listed on the Certificate of Compliance by the manufacturer.)

Asphalt-Rubber Asphalt Concrete Section 717.2.1.2 Crumb Rubber

(Certificates of Compliance conforming to Arizona State Department of Transportation Standard Specifications for Road and Bridge Construction Section 106.05 shall be submitted.)

Steel Reinforcement Section 727.1 General

(The Contractor shall furnish 3 certified mill test reports or certificates of compliance for each heat or size of steel which can be clearly identified with the lot.)

Geosynthetics Section 796.3 Test and Certification Requirements

(Certificates of compliance shall be submitted to the engineer upon delivery of material for use on a specified project.) and (Testing methods and results shown in the certificate of compliance shall conform to the listed specifications for the proposed geosynthetic use.)

Arizona State Department of Transportation Standard Specifications for Road and Bridge Construction Section 106.05

(106CERT, 09/14/12 the Standard Specifications is revised to read:)

SECTION 106 CONTROL OF MATERIAL:

106.05 Certificates:

(A) General:

The contractor shall submit to the Engineer an original or copy of either a Certificate of Compliance or a Certificate of Analysis, as required, prior to the use of any materials or manufactured assemblies for which the specifications require that such a certificate be furnished.

Certificates shall be specifically identified as either a "Certificate of Compliance" or a "Certificate of Analysis".

The Engineer may permit the use of certain materials or manufactured assemblies prior to, or without, sampling and testing if accompanied by a Certificate of Compliance or Certificate of Analysis, as herein specified. Materials or manufactured assemblies for which a certificate is furnished may be sampled and tested at any time, and, if found not in conformity with the requirements of the plans and the specifications, will be subject to rejection, whether in place or not.

Certificates of Compliance and Certificates of Analysis shall comply with the requirements specified herein, the ADOT Materials Testing Manual, and applicable ADOT Materials Policy and Procedure Directives.

(B) Certificate of Compliance:

A Certificate of Compliance shall be submitted on the manufacturer's or supplier's official letterhead, and shall contain the following information:

- (1) The current name, address, and phone number of the manufacturer or supplier of the material.
- (2) A description of the material supplied.
- (3) Quantity of material represented by the certificate.
- (4) Means of material identification, such as label, lot number, or marking.
- (5) A statement that the material complies in all respects with the requirements of the cited specifications. Certificates shall state compliance with the cited specification, such as AASHTO M 320, ASTM C 494; or specific table or subsection of the Arizona Department of Transportation Standard Specifications or Special Provisions. Certificates may cite both, if applicable.
- (6) A statement that the individual identified in item seven below has the legal authority to bind the manufacturer or the supplier of the material.
- (7) The name, title, and signature of the responsible individual. The date of the signature shall also be given.

Each of the first six items specified above shall be completed prior to the signing of the certificate as defined in item seven. No certificate will be accepted that has been altered, added to, or changed in any way after the authorized signature has been affixed to the original certificate. However, notations of a clarifying nature, such as project number, contractor, or quantity shipped are acceptable, provided the basic requirements of the certificate are not affected.

A copy or facsimile reproduction of the original certificate will be acceptable; however, the original certificate shall be made available upon request.

(C) Certificate of Analysis:

A Certificate of Analysis shall include all the information required for a Certificate of Compliance and, in addition, shall include the results of all tests required by the specifications.



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: January 6, 2016

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

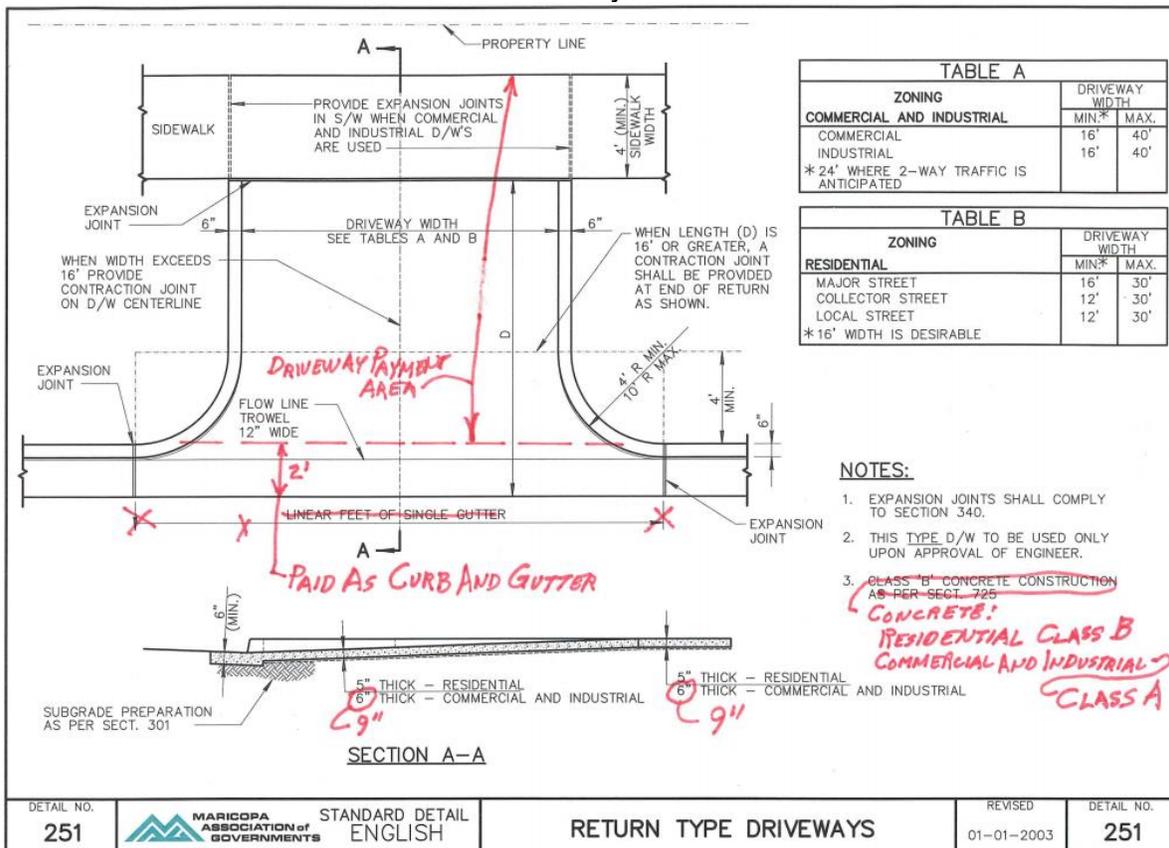
Subject: Revision to Detail 251 RETURN TYPE DRIVEWAYS

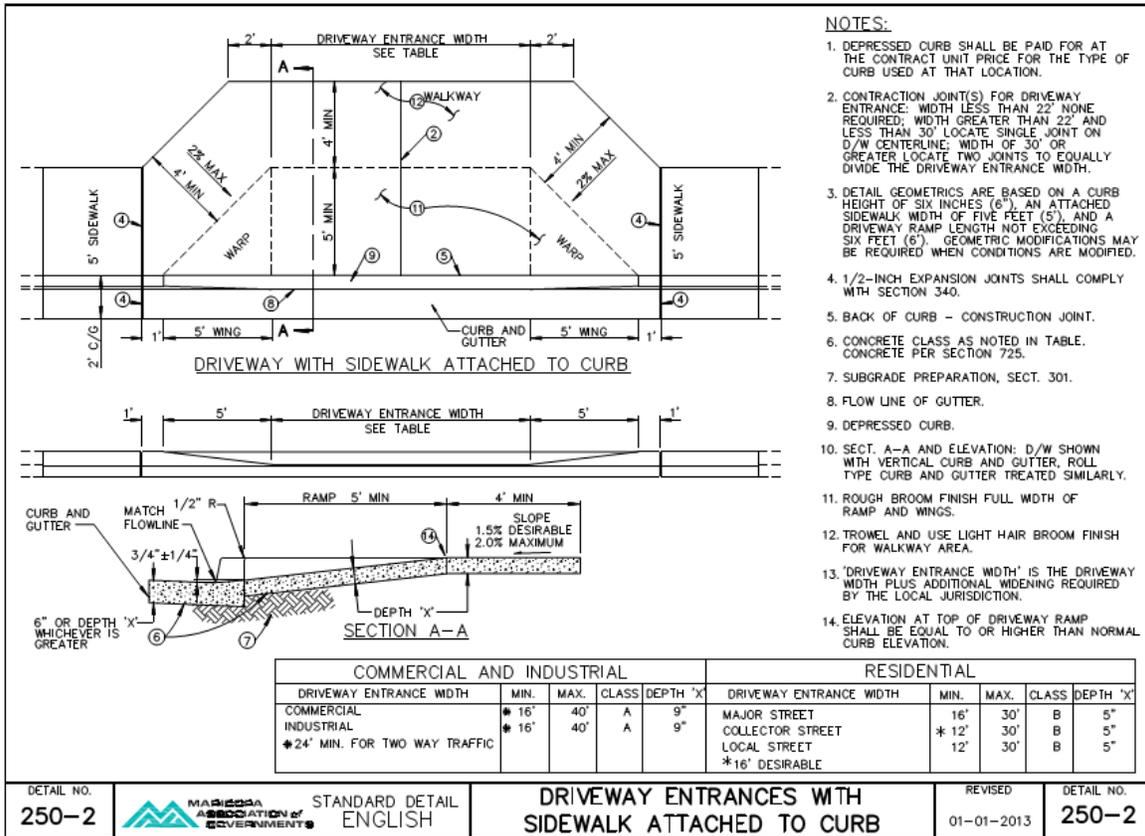
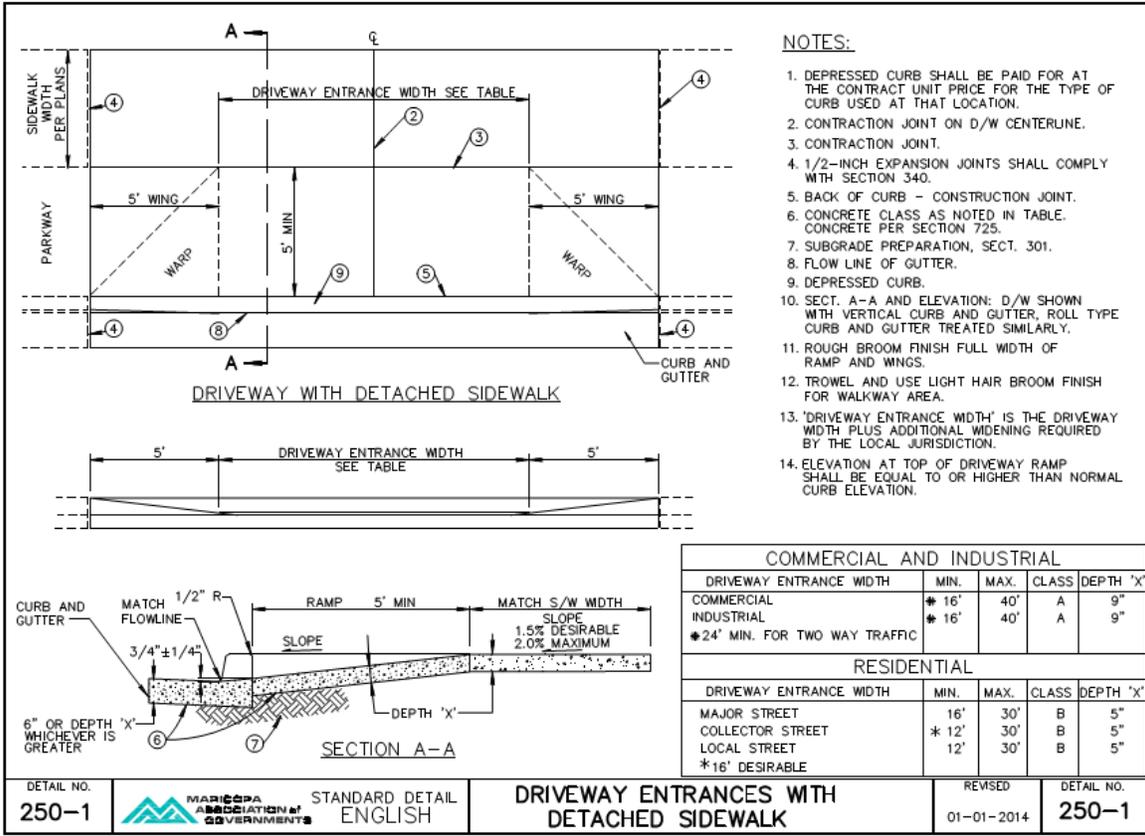
Case 16-03

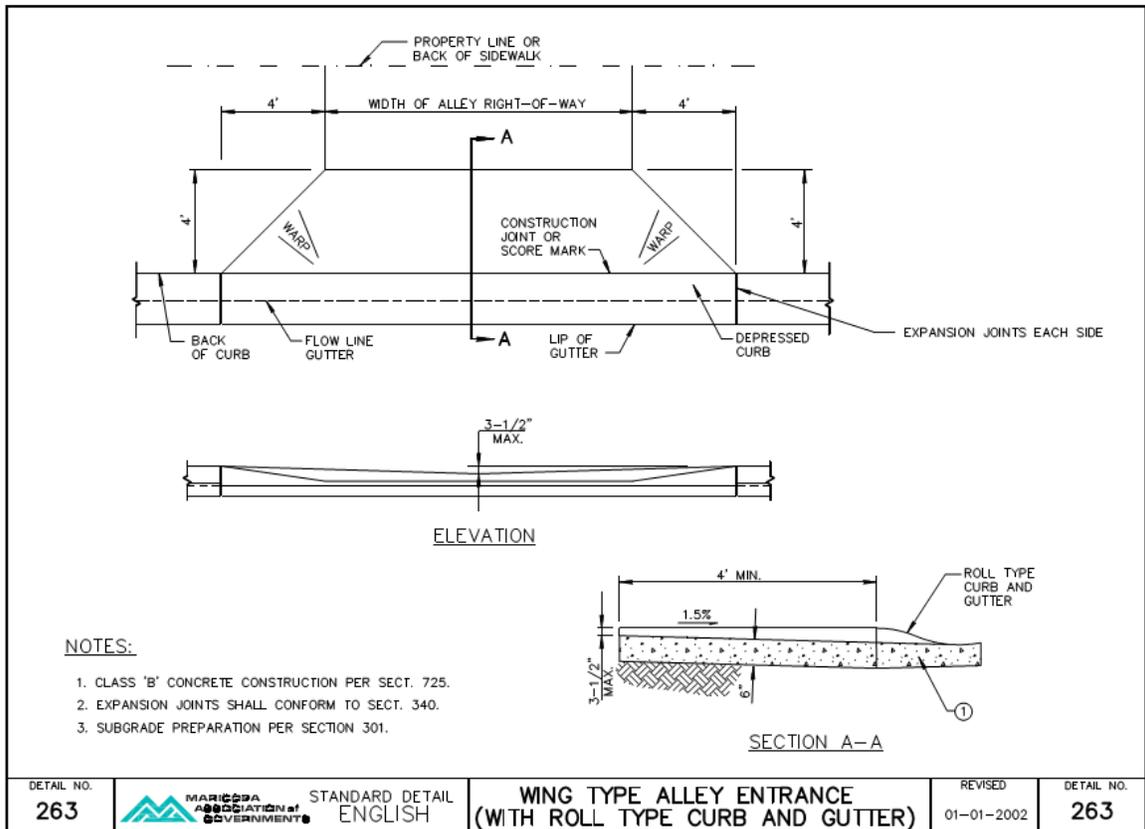
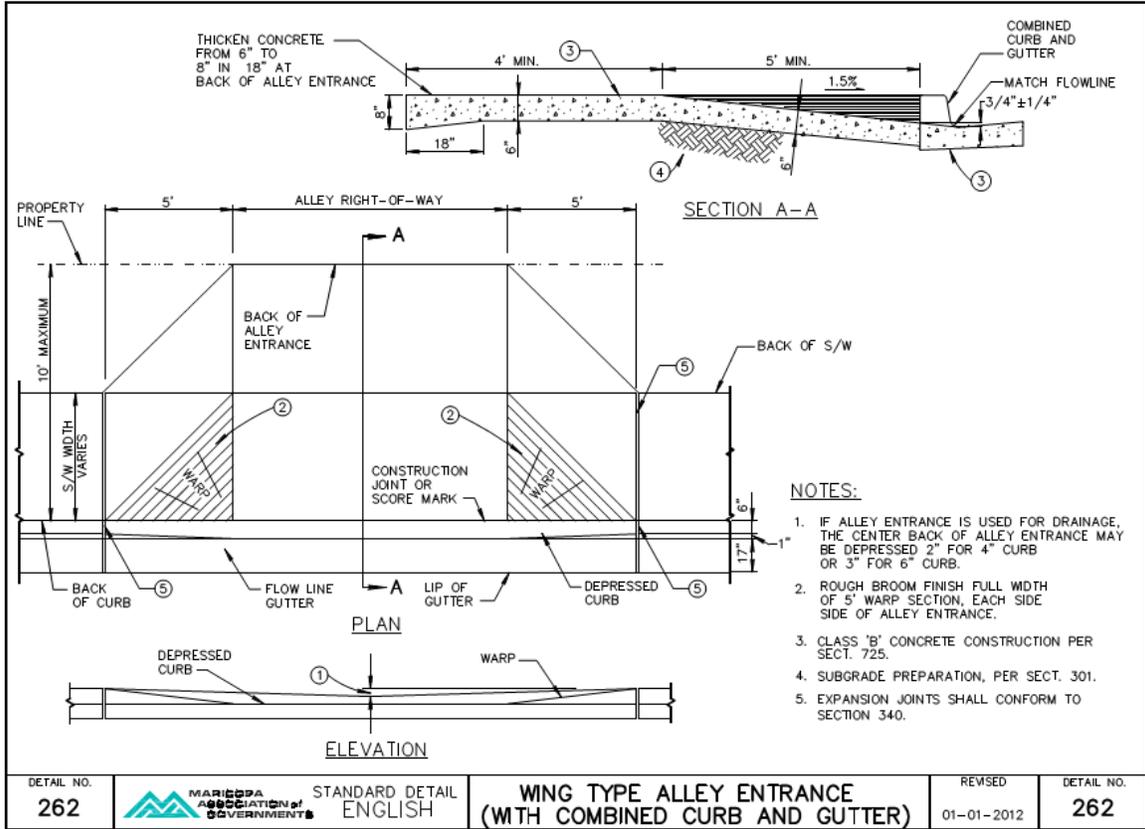
PURPOSE: Adjust concrete thickness and concrete class for commercial and industrial driveways to match requirements shown on Detail 250.

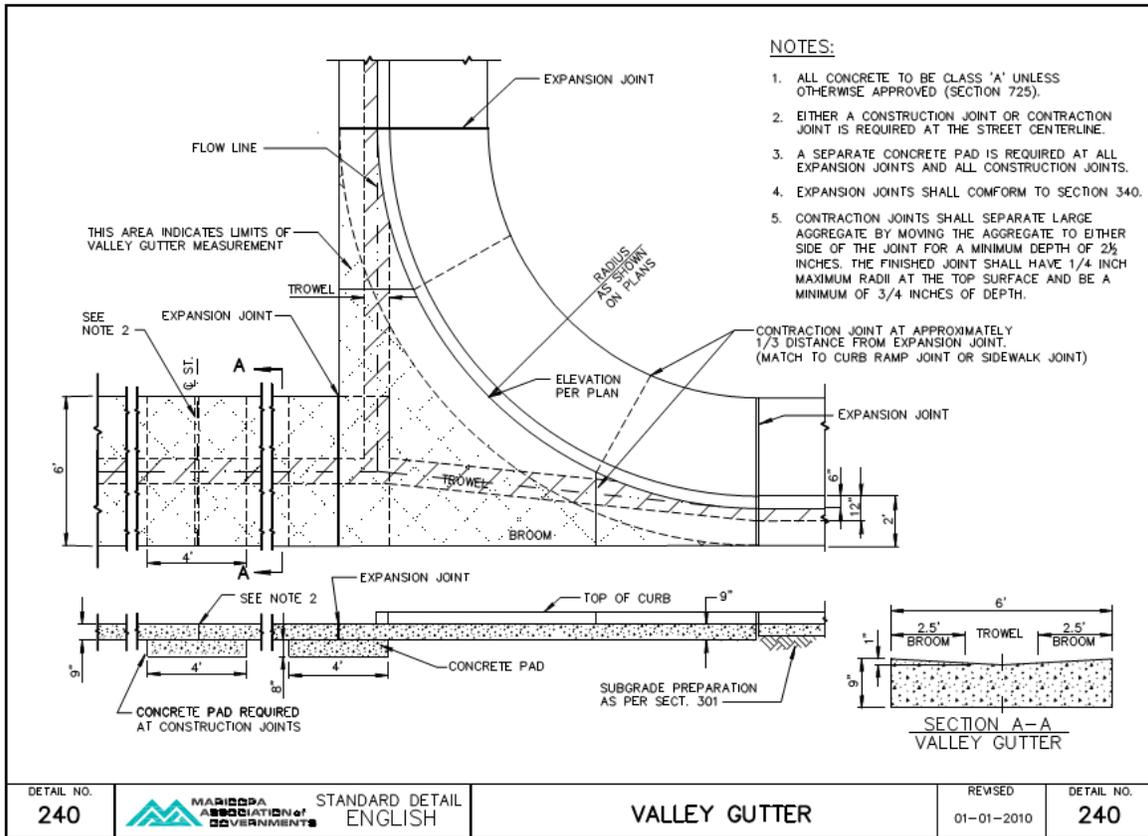
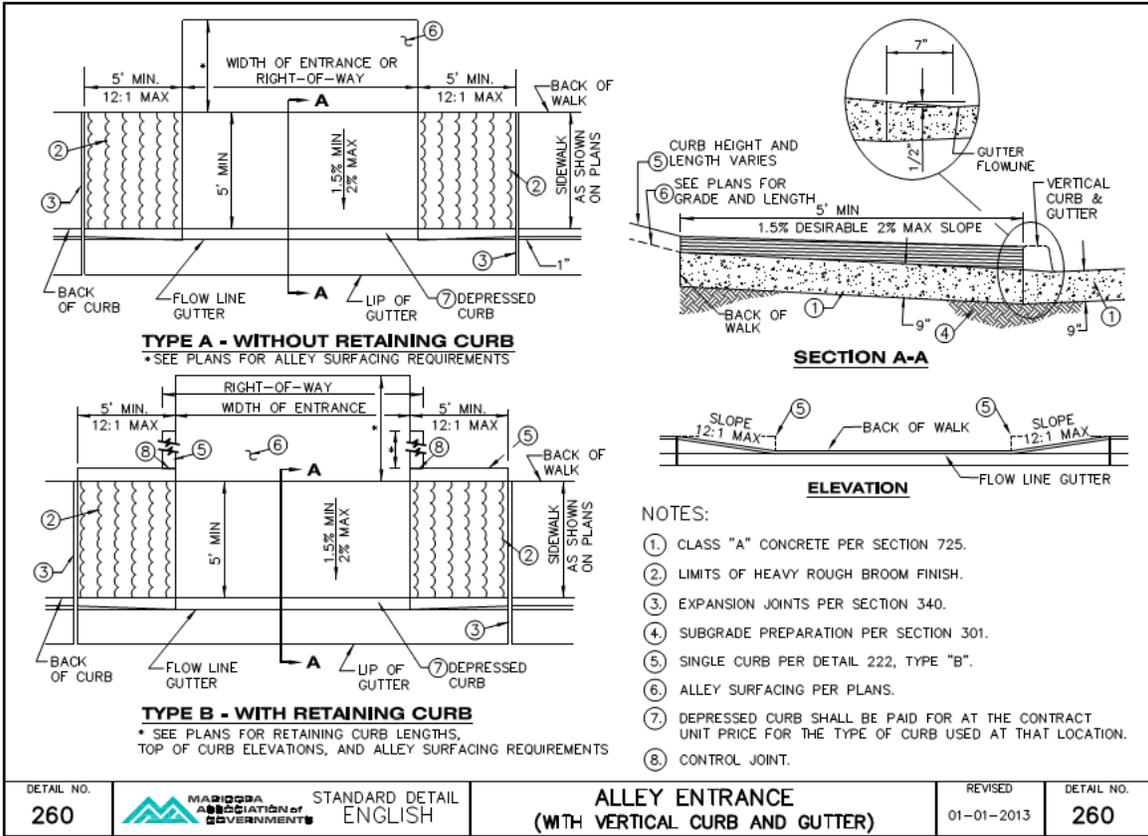
REVISIONS: Change concrete thickness from 6" to 9" for commercial and industrial driveways. Change concrete from Class B to Class A for commercial and industrial driveways. Clarify payment limits for curb & gutter and for the driveway.

QUESTIONS: Should the same changes be made to alley entrances Details 262 and 263? Should residential driveways be deleted from Detail 251?









Water/Sewer Working Group Meeting

Meeting Notes
January 19, 2016

Opening:

A meeting of the Specifications and Details Water/Sewer Working Group was called to order by chair Jim Badowich on January 19, 2016, at 1:30 p.m. in the MAG Cottonwood Room.

1. Introductions/Attendance

Tony Ayala (Avondale), Jim Badowich (Avondale), Jami Erickson (Phoenix), Bob Herz (Maricopa County), Craig Sharp (Buckeye) Gordon Tyus (MAG), Arvid Veidmark (SSC Boring).

2. Case 15-12: Horizontal Drilling Directional Drilling (New Section 608)

Mr. Badowich said the case passed last year. Arvid Veidmark said he hosted a symposium with AZUCA that had 38 attendees and was well received. He walked industry reps through the new spec, and is interested to see how agencies apply it. Jim Badowich said agencies are using HDD for IT work, and mentioned a project the county did on MC-85. Mr. Veidmark said the industry wants a level playing field with out-of-state contractors, and that this new section will help. He said they also appreciated the figure to help illustrate the process.

3. Case 14-12: Detail 200

This case was passed at the last committee meeting. Mr. Badowich said he was glad that the offset joints detail was added since they use it often in Avondale. He expects there will be additional revisions in the future, possibly adding a new detail sheet.

4. Case 15-05: Reclaimed Valve Boxes

Case sponsor Warren White was not in attendance, but he did provide an updated detail at the January committee meeting. Mr. Badowich felt that this case should wrap up this year, and also mentioned the different kinds of non-potable water sources. Bob Herz said the state statutes reference reclaimed water. Arvid Veidmark said he notices agencies are using more of the colored PVC.

5. Case 16-01: Misc. Corrections

Jim Badowich asked if anyone had any related blooper cases to discuss. Craig Sharp said he'll bring one up at the next meeting, but that he didn't have it prepared now. Mr. Badowich asked about possible cases to update ASTM references. Bob Herz said he plans to delete the reference to the friction testing of detectable warnings because it was not found in any of the ADA requirements.

6. Spec Section 611: Water, Sewer and Storm Drain Testing

Mr. Badowich then discussed possible new cases. One area he would like to focus on is the testing procedures in Section 611. He said the air test does match the ASTM method. Tony Ayala said he had to explain to people that the testing sections were reorganized but not really updated. He brought up the problems of using household bleach for chlorination. Jami Erickson said Phoenix is working on a supplement to not allow scented bleach, but said that the current

specs do allow household bleach. Craig Sharp discussed problems with contractors that line the bottom of the pipe with powered bleach, and how it all gets pushed to the end of the pipe.

Jim Badowich discussed the possibility of adding new testing procedures to be more inclusive than exclusive. He gave the example of tests done in Goodyear. Mr. Ayala said he would check with contacts in Goodyear and Peoria for more information.

Mr. Badowich also brought up the issue of flushing, and specifying a minimum orifice size based on the pipe size (with diameters up to 16"). For pipe larger, special requirements would be needed. Bob Herz said they typically flush out of hydrants with 4" outlets, and also commented that the flushing water needed to go where it wouldn't cause erosion problems. Mr. Badowich discussed calculating the velocity needed. Jami Erickson said they typically use hydrants with 4" connections and backflow preventers, and since they have large mains, it typically has enough velocity for flushing. Mr. Badowich discussed the problems of using water trucks for flushing if they previously had used non-potable water.

Pressure testing was also discussed. Mr. Badowich didn't think there was a need for an absorption factor, or make-up water. Ms. Erickson said Phoenix typically does the chlorination and leakage tests at the same time. Mr. Badowich wants to look at the current AWWA requirements for chlorination, and update MAG's specs to meet a performance test- one that allows different options, but does not dictate the method. Mr. Ayala said he would look at flushing requirements, and see what minimum velocity may be needed.

The group briefly discussed the color of fire hydrants. Ms. Erickson said Phoenix uses yellow hydrants, with black caps for Phoenix owned and white caps for private. Jim Badowich commented on how the fire departments use the NFP24 requirements, which states that leaks are checked before the pipe being backfilled, but that this procedure is antiquated, and typically the trench is backfilled before testing. Arvid Veidmark said you can't leave an open trench for more than ¼ mile according to MAG specs, and contractors don't want to leave it open for liability issues. Ms. Erickson said Phoenix typically allows even less for traffic control reasons.

7. MAG Detail 320: Meter Boxes

Tony Ayala said he was approached by a representative from Armorcast who wants to present more info about the concrete/polymer boxes. Craig Sharp said he would send Mr. Ayala the details for the boxes Buckeye has used. Ms. Erickson said Phoenix plans to continue using the concrete boxes, but with polymer lids. Mr. Badowich said MAG may need to allow a range in order for manufacturers with slightly different designs to be allowed. Several members commented that they want the sizes to match with a tolerance of perhaps 1/8" so that covers will fit on existing boxes. The group also would like information on traffic and non-traffic rated boxes. The non-traffic boxes could be made of HDPE. On a related note Mr. Ayala said David Shelter of Mueller wants to update the details for the valve itself, which he says is outdated. Mr. Ayala said he would get more information from him.

8. Other Issues

Jami Erickson said she wants to move some Phoenix supplements into MAG, but she still has work to do on determining what to bring forwards as cases. She said Phoenix currently has

adopted the 2015 MAG specs, along with the 2015 Phoenix supplements that they released last year. She said they do not automatically adopt the MAG revisions every year.

Mr. Ayala discussed problems with rocks interrupting the functioning of valves. He believes the flushing standards should address not only making sure the water is safe to drink, but also that it removes debris that causes maintenance problems.

9. Next Meeting

Jim Badowich said the group would be back on the meeting schedule of the 3rd Tuesday of each month. The next meeting will be February 16th. Bob Herz requested that some draft specifications be ready for review at the next meeting.

10. Adjournment

The meeting was adjourned at 3:00 p.m.

Report to MAG Technical Committee
Meeting January 21, 2016
Asphalt and Materials Working Group meetings
By Chairmen, Greg Groneberg, Brian Gallimore

The meeting was held on noon on January 21, 2016 at the ARPA offices.

Present at the meeting: Greg Groneberg (S.W. Asphalt), Brian Newman (Hanson), Don Cornelison (Speedie & Associates), Robert Herz (MCDOT), Scott Thompson & Bob Kostelny (AMEC F.W.), Brian Gallimore (WSP), Gordon Tyus (MAG), Sam Huddleston (Western Refining), Alex Carter (Vulcan), Jeff Hearne (SRPMG)

Cases / Items Reviewed and discussed:

Case 15-10 Section 321

Compaction over poor base (Rehabilitate work). Multiple conversations with industry has determined that even though the issue exists, the outcomes have not been detrimental. The wording was always going to be a struggle with this case to protect the agency while allowing some leniency to the contractor. Therefore, based on this information this case is to be withdrawn.

Case 16-02 Certificates of Compliance

The discussion began over definition and why this needed to be a case. Bob explained the definition does not exist in MAG and references ADOT but does not list with specificity. The case revision would label these items in MAG and follows the current ADOT criteria. After discussion, it was determined that the “default” would be if accepted by ADOT, it would be acceptable to MAG. Through this route, the listed criteria would need to be made available “upon request”. However, the process would now exist in MAG for those who may not, or choose not, to submit their products to ADOT for approval.

ASTM Revisions

15 ASTM references that need updated were identified and have been delegated for research/review. The expectation is to have these available for discussion at the next working group meeting.

Miscellaneous Items

- 1> Need for the name(s) / product(s) of the green bicycle lane paint(s)
- 2> Eliminate the gyratory MAG LV design
- 3> MAG 710 – Don Cornelison. Says he has an issue that needs review
- 4> Approval list(s) for MCDOT? (JOC's)

Next meeting is February 18th, 2016 at noon in the ARPA offices.

This meeting was adjourned at approximately 1:30PM

Curb Ramp Working Group Meeting

Meeting Notes
January 25, 2016

Opening:

The meeting of the Specifications and Details Curb Ramp Working Group was called to order by Warren White on January 25, 2016, at 1:30 p.m. in the MAG Cottonwood Room.

1. Attendance

Brandon Forrey (Peoria), Bob Herz (MCDOT), Roger Olson (Buckeye), Dan Shaffer (Surprise), Don Songer (Gilbert), Gordon Tyus (MAG), Warren White (Chandler)

2. Curb Ramp Alignment Presentation

Warren White introduced the meeting by stating that he hoped to present a case in March with the goal of committee approval by September. He next presented slides showing different potential arrangements for intersection alignments. These included showing directional and radial ramps for local, collector, and arterial intersections. Options showing alignment changes for streets with turn lanes included moving the placement of the ramps, as well as skewing directional ramps. The presentation is available on the MAG website here:

<https://www.azmag.gov/Events/Event.asp?CMSID=8478>

3. Directional Curb Ramp Draft Details (Detail 237-1)

The group began discussing the directional ramps. Brandon Forrey displayed draft Detail 237-1 on screen and provided handouts. The detail was unchanged since the previous meeting, but several members not at that meeting provided comments. One issue discussed was 4" vs. 6" vertical curb, and roll curb. Mr. Forrey said sometimes contractors will unnecessarily increase from 4" to 6" just to use the current detail. Mr. Herz suggested that moving from a 6" to a 4" curb height would allow smaller ramps to be constructed. Mr. Forrey said Peoria had this as an option. He showed several other options with Peoria details, but thought that it may make sense to start with the standard versions to present to the committee and add other options based on them later. Mr. Olson said that he thought the directional ramp detail should at least have a detached sidewalk option, since most new developments, such as those in Buckeye, use detached sidewalks. Mr. Herz had questions about how the triangular area in front of detectable was sloped. He noted that it may not be possible for the entire concrete section to have a 1-½% slope. The group also made suggestions to improve the section view including adding the curb and gutter in the section view showing the 5% counter slope.

4. Radial Curb Ramp Draft Details (Details 236-1, 236-2)

Warren White provided an updated Detail 236-1 that included a table in the top right corner to help specify the ramp width (A), landing size (B), and distance between ramps (C) based on the curb radius with typical sizes for local, collector and arterial streets. Mr. Songer suggested just using (less than 25') and (25' and greater) as the table options. Mr. Herz noted that the dimension (B) should be drawn perpendicular to the back sidewalk to ensure the minimum pedestrian path width. Members also thought that row (C) might should be eliminated, or have the minimum, or typical value. Mr. White suggested keeping the 2' minimum and possibly

showing different options based on the intersection alignment diagrams. Mr. Songer thought the note referencing Detail 234 on the section view was confusing. Mr. White agreed and said he would adjust the similar note on the plan view and move the arrowhead down slightly. He also plans to adjust the slope arrow on the section view to clarify that it includes the detectable warning area as well.

4. Next Steps

Warren White and Brandon Forrey said they would incorporate comments and feedback to update the draft details. Due to President's Day holiday next meeting is scheduled for Monday, February 22nd in the MAG offices. After that the group will meet on the 3rd Monday of each month.

5. Adjournment

The meeting was adjourned at 3:00 p.m.

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