

July 2, 2012

TO: Members of the MAG Standard Specifications and Details Committee

FROM: Troy Tobiasson, City of Goodyear, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday, July 11, 2012 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 Troy Tobiasson at 623-882-7979 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. Several cases are scheduled for action, so your 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
June 11, 2012

COMMITTEE ACTION REQUESTED

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| 1. <u>Call to Order and Introductions</u> | |
| 2. <u>Call to the Audience</u>
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. | 2. Information. |
| 3. <u>Approval of May 2, 2012, Meeting Minutes</u> | 3. Review and approve minutes of the May 2, 2012 meeting. |
| 4. <u>Membership</u> : Approve Peter Kandararis as an Independent Advisory Member. (Letter attached.) | 4. For information, discussion and action. |

Cases Carried Forward from 2011

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| 5. <u>Case 11-02</u> :
Add an Asphalt Pavement Safety Edge option to Detail 201. | 5. Information and discussion.
Sponsor: Bob Herz, Maricopa County |
| 6. <u>Case 11-03</u> :
Replace cadmium plated bolts referenced in Section 610.13 with zinc plated bolts as described in ASTM-B633. UPDATE | 6. Information and discussion.
Sponsor: Paul Nebeker, Jim Badowich |
| 7. <u>Case 11-12</u> :
Modifications to Regulatory Requirements, MAG Section 107. | 7. Information and discussion.
Sponsor: Peter Kandararis |
| 8. <u>Case 11-14</u> :
Update Fire Hydrant Detail 360-1, and add Wet Barrel Option (360-2) and Details (360-3). UPDATE | 8. Information and discussion.
Sponsor: Scott Zipprich |

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| 9. <u>Case 11-16:</u>
Modify Section 415: Steel Flexible Metal Guardrail. | 9. Information and discussion.
Sponsor: Peter Kandararis |
| 10. <u>Case 11-18:</u>
Update Section 350: Removal of Existing Improvements. | 10. Information and discussion.
Sponsor: Peter Kandararis |
| 11. <u>Case 11-21:</u>
Add new Section 623: Special Bedding for Mainline Storm Drain Pipe. | 11. Information and discussion.
Sponsor: Syd Anderson |

New Cases for 2012

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| 12. <u>Case 12-01 Miscellaneous Corrections:</u>
A. Typographic corrections in Section 108.8
B. Typographic error in Section 108.9
C. Correct references in Detail 160.
D. Correct typo in Section 610.3. | 12. Information and discussion. |
| 13. <u>Case 12-03:</u>
Revisions to Details 260-2: Driveway Entrances. | 13. Information and discussion.
Sponsor: Bob Herz, Maricopa County |
| 14. <u>Case 12-04:</u>
Revisions to Section 317: Asphalt Milling. | 14. Information and discussion.
Sponsor: Jeff Benedict, ARPA |
| 15. <u>Case 12-05:</u>
Modifications to Section 711: Asphalt Paving | 15. Information, discussion and possible action.
Sponsor: Jeff Benedict, ARPA |
| 16. <u>Case 12-06:</u>
Add ADA Compliant Alley Entrance Detail.
UPDATE | 16. Information and discussion.
Sponsor: Warren White, Chandler |
| 17. <u>Case 12-07:</u>
Revisions to Section 332.6 Protection of Uncured Surface. UPDATE | 17. Information and discussion.
Sponsor: Jami Erickson, Phoenix |
| 18. <u>Case 12-08:</u>
Revisions to Section 611: Addition of Refreshing Plans. | 18. Information and discussion.
Sponsor: Jami Erickson, Phoenix |
| 19. <u>Case 12-09:</u>
ASTM Updates - Section 770: Structural Steel | 19. Information, discussion and possible action.
Sponsor: Peter Kandararis, SRP |
| 20. <u>Case 12-10:</u>
Revision to Section 505.7.3 Bridge Deck Joint Assemblies. NEW | 20. Information and discussion.
Sponsor: Bob Herz, Maricopa County |

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| 21. <u>Case 12-11:</u>
Use of Reclaimed/Recycled Materials. Revisions to Sections 701, 702, 710 and 728. NEW | 21. Information and discussion.
Sponsors: Brian Gallimore, Jeff Hearne, Jeff Benedict - Materials, Concrete and Asphalt WGs |
| 22. <u>Other New and Potential Cases for 2012</u>
Discussion about new cases and that could be brought forward in 2012. | 22. Information and discussion. |

General Discussion

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| 23. Information on Detectable Warnings (2010 ADAAG requirements). | 23. Information and discussion. |
| 24. <u>Working Group Reports</u>

A. Water/Sewer Working Group
Report on 6/19/2012 meeting.
B. Asphalt/Materials Working Group
Report on 6/28/2012 meeting.
C. Concrete Working Group
Report on 6/28/2012 meeting. | 24. Information and discussion.

A. Water/Sewer Chair: Jim Badowich, Avondale,

B. Asphalt Chair: Jeff Benedict, AGC;
Materials Chair: Brian Gallimore
C. Concrete Chair: Jeff Hearne, ARPA |
| 25. <u>Request for Future Agenda Items</u>
Topics or issues of interest that the Standard Specifications and Details Committee would like to have considered for discussion at a future meeting will be requested. | |

Adjournment

LIST OF MEMBERS
For
MAG Standard Specifications and Details Committee

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July 2012

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

May 2, 2012

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

AGENCY MEMBERS

Jim Badowich, Avondale	Margie Torres, Peoria (proxy)
Scott Zipprich, Buckeye	Syd Anderson, Phoenix (St. Trans.)
Warren White, Chandler	* Jami Erickson, Phoenix (Water)
* Lance Calvert, El Mirage	* Marc Palichuk, Queen Creek
Greg Crossman, Gilbert	Rodney Ramos, Scottsdale
Mark Ivanich, Glendale	Jason Mahkovtz, Surprise
Troy Tobiasson, Goodyear, Chair	Tom Wilhite, Tempe, Vice Chair
Bob Herz, MCDOT	* Jim Fox, Youngtown
Bob Draper, Mesa	

ADVISORY MEMBERS

Jeff Benedict, ARPA	Jeff Hearne, ARPA
Denny Galvin, NUCA (proxy)	Peter Kandaris, SRP
* Kwigs Bowen, NUCA	Paul R. Nebeker, Independent
Brian Gallimore, AGC	
* Adrian Green, AGC	

MAG ADMINISTRATIVE STAFF

Gordon Tyus

* Members not attending or represented by proxy.

GUESTS/VISITORS

Arturo Chavarria, Hanson Pipe and Precast
Jacob Rodriguez, Salt River Project

1. Call to Order

Chairman Troy Tobiasson called the meeting to order at 1:32 p.m.

2. Call to the Audience

Peter Kandarlis introduced Jacob Rodriguez who will be SRP's representative beginning next month when Mr. Kandarlis retires.

Mr. Kandarlis said he would like to continue to be a member of the committee. Paul Nebeker discussed the procedure the committee used to elect him as an independent member in 2005. It required a nomination and vote by the committee for approval. Tom Wilhite then introduced a motion to nominate Peter Kandarlis as an independent member of the committee. Scott Zipprich seconded the motion. A voice vote of all ayes and no nays was recorded.

3. Approval of Minutes

The members reviewed the April 4, 2012 meeting minutes. Greg Crossman introduced a motion to accept the minutes as written. Warren White seconded the motion. A voice vote of all ayes and no nays was recorded.

Review of 2011 Carry Forward Cases

4. Case 11-02 – Safety Edge Detail

Add an Asphalt Pavement Safety Edge option to Detail 201. Bob Herz handed out a revised detail drawing dated 5/02/2012 for the committee to review. Brian Gallimore asked about the pay item for defective edge payment. Mr. Herz explained that it would be included if greater than 1 foot of the edge had to be removed, and based on price per square yard, otherwise the contractor can lay down the edge on the existing pavement. Brian Gallimore asked about edges that were rolled, and discussed a current project where the safety edge is being constructed. Rod Ramos asked for Mr. Gallimore's recommendation. He said he would know more next month and could bring pictures of the project. He also said they are milling instead of saw cutting some sections. Mr. Herz said on one project the contractor began saw cutting through an existing safety edge. He said he would have more information on the process after seeing the progress of projects underway.

5. Case 11-03 – Replace Cadmium Plated Bolts.

Replace cadmium plated bolts referenced in Section 610.13 with zinc plated bolts as described in ASTM-B633. Jim Badowich said he worked on revising it, and reviewed the ASTM references provided by Javier Setovich's draft. He explained that the section would need to be rewritten to include options for the bolt materials and bolt finishes, for both T-bolts and bolts for flanged connections. Zinc would be the default finish, but options for stainless steel and cadmium could also be included. He also questioned why the bolts would change for larger pipe, since just the number of bolts would increase. Mr. Badowich said

additional research on ASTM standards and feedback from suppliers was needed. He hopes to review an updated case at the next water/sewer working group and provide an updated case for the committee to review in June.

6. Case 11-12 – Modifications to Regulatory Requirements, MAG 107

Add references to Arizona native plant requirements and update references to state statutes. Mr. Kandarlis handed out a revision that updated the text on handling permits as requested by the city of Phoenix. There was some discussion on the costs and procedures agencies use when issuing permits. Tom Wilhite said he wants to do a final review of the section and will get comments back. Mr. Kandarlis called for a vote on the case at the next meeting.

7. Case 11-14: Update Fire Hydrant Details

Update Detail 360-1, and add Wet Barrel Option (360-2) and Details (360-3). Scott Zipprich said he was unable to attend the last water/sewer working group meeting, but the group reviewed the hydrant details, and those comments were incorporated in the new details provided in the packet. Changes included making mechanical joint restraints the default, and ghosting the thrust blocks. He said he needs to clean up a dimension from the steamer, and asked for additional comments. There was discussion about the minimum clearance being 36” from the center of the hydrant. Other agencies, such as Goodyear typically have larger clearances. A clearance for landscaping was also discussed, so hoses wouldn’t be punctured by cactuses, for example. Thrust blocks were discussed, and will remain an option since they are used by Glendale and Phoenix. Mark Ivanich suggested removing the corey type at the bottom of the hydrant. Jim Badowich and other members agreed. Mr. Nebeker said they are rarely used anymore. Mr. Badowich suggested final changes could be presented to the committee next month with a potential vote in July.

8. Case 11-16: Modify Section 415: Steel Flexible Metal Guardrail

Update Section 415 based on the Maricopa County Supplement. Reference New Details. Peter Kandarlis handed out a page that provided examples of language for temporary guard rail end sections from the MUTCD and the Arkansas DOT. He suggested using the Arkansas language, which was straightforward. He said he researched options for that met the standard listed, and it included things such as barrels and collapsible barriers. Mr. Herz asked how difficult they were to install. Mr. Kandarlis responded that it depended on the equipment used. There was discussion about whether this specification could be used for maintenance. Mr. Ramos said he thought it could, but recommended it be a specification intended for new construction.

9. Case 11-18: Update Section 350: Removal of Existing Improvements

Add language in Section 350.2 for utility removal, and payment requirements. Mr. Kandarlis said he did not receive any comments and would like to vote on the case at the June meeting.

10. Case 11-21: Add new Section 623: Special Bedding for Mainline Storm Drain Pipe

Incorporate City of Phoenix supplement 623 into the MAG standards. Syd Anderson said he was not able to attend the last water/sewer meeting, but that he understood there was related discussion. Jim Badowich said ADS provided additional information on the trench widths and installation procedures for HDPE pipe. The trend was to create separate specs for rigid and flexible pipe. Working group members discussed adding a table to the HDPE section for trenches since they are different than MAG's specification. There was also discussion about flexible pipe deflection and testing methods including laser and mandrel tests. Denny Galvin of ADS said but mandrel testing was simple and provided a pass/fail condition, whereas laser profile testing is expensive and open to interpretation. Mr. Kandaris said knowing that the pipe has reached its anticipated deflection is important to know before paving above it. Syd Anderson said if you use slurry on top you don't need to worry about it. Bob Draper agreed, and said different options for different pipe types required more time to review. Bob Herz said at the county pipe under 48" is backfilled with slurry.

New 2012 Cases

11. Case 12-01: Miscellaneous Corrections

Correct Typo in Section 610.3. Gordon Tyus said Warren White identified that the word 'project' in Section 610.3 should be 'product.' This update was added as Case 12-01 D.

12. Case 12-02: Asphalt Concrete Low Traffic Gyration Levels

Modify Section 710 Asphalt Concrete to include low traffic gyration level specifications. Jeff Benedict said there were no changes to the case and thought it was ready for a vote. Bob Herz moved to accept the case as presented. Jim Badowich seconded the motion. A voice vote was taken. The case was approved 11 yes, 0 no, 1 abstained, 4 not present.

13. Case 12-03: Revisions to Detail 250-2 DRIVEWAY ENTRANCES

Update Sidewalk Widths to 4' in Detail 250-2 Driveway Entrances. Bob Herz discussed the revised Detail 250-2 provided in the packet. The detail modified the existing MAG detail to show a 4' sidewalk instead of the current 3' width around the driveway entrance. As discussed, the detail tried to reduce the amount of concrete by keeping the walkway parallel to the driveway warp. Mr. Herz said doing this created a joint that is at a slight angle with approximately an 8" offset front to back. Representatives from Scottsdale and Tempe also submitted sample driveway entrance details that kept the joints square, but had different offsets. Tom Wilhite described Tempe's detail. It included circled notes that Tempe added regarding placement of contraction joints and monolithically pouring the driveway entrance. Bob Draper asked about the sidewalk concrete thickness and suggested it match the driveway near the entrances so that it would not break when cars drive over it. There was also discussion about when and how much of the asphalt street would need to be removed. Tempe's detail showed 2 feet; however, Mr. Badowich said they try not to remove any, but if

they do, it is typically 4 feet. Jason Mahkovtz said the extra 2 feet helps match the cross slope. Brian Gallimore said for new subdivisions, where the asphalt street is new, you should try and avoid replacing the asphalt. Margie Torres said Peoria will mill down to match. Bob Herz said he will evaluate all the suggestions and other details and continue work on revisions.

14. Case 12-04: Revisions to Section 317: Asphalt Milling

Revise Asphalt Milling to address dust control measures on milled surfaces open to traffic. Jeff Benedict said the new version handed out was revised during the asphalt working group meeting. It used language provided by Gilbert, but modified it to clarify that half of the tack is used for dust control. Warren White said Chandler still has some concerns over the word 'shall' because they worry about track-out. Mr. Benedict asked for final comments.

15. Case 12-05: Modifications to Table 711-1

Revise Paving Asphalt Performance Grading System Requirements. Jeff Benedict said there were no comments or changes since the last meeting at proposed to vote on the case during the June meeting.

16. Case 12-06: New Detail 249: Modified Entrance

Create a new entrance detail meeting ADA requirements for straight sidewalks. Warren White provided an updated Alley Entrance updating an older MAG Detail 260. Basically the detail flattened out the driveway and added info for the back right-of-way. Rod Ramos asked if the driveway was poured monolithically. Syd Anderson suggested the concrete be thicker at 8 inches. Tom Wilhite said he would like to see the curb on the backside, and/or the elevation changes behind the entrance. Rod Ramos also discussed the grading in the alley, and said the driveway needed to meet the maximum ADA allowable cross slope. Mark Ivanich noted that the sidewalk could be under water during a storm.

17. Case 12-07: Revisions to Section 332.6: Protection of Uncured Surface

Add language to include a work plan for uncured slurry protection. Jami Erickson was not present to provide an update; however, Jeff Benedict said the asphalt working group reviewed it. He said he thought the case seemed unworkable, and suggested rather there should be specifications on what to do to fix any damage that may occur.

18. Case 12-08: Section 611: Disinfecting Water Mains – Addition of Refreshing Plans

Modify Section 611.17 to include a "Keep Fresh Plan" to assure safe water quality. Case sponsor, Jami Erickson, was not present; however, Jim Badowich said the case was discussed at the water/sewer meeting. He suggested this may be difficult to implement, especially for cities that have limited water availability. Troy Tobiasson said Goodyear does not have the water to do this. Scott Zipprich suggested that final testing would only last an X amount of time or the lines would require retesting before connection. Mr. Badowich and Mr. Tobiasson

said their agencies have severed lines and capped them for unused sections such as abandoned subdivisions. Ms. Torres said Peoria has flushed abandoned lines, retested and found them to be okay for connection.

19. Case 12-09: ASTM Updates

A. *Update ASTM references to steel standards in Section 770.* Peter Kandarlis said he did not have any new ASTM updates, or any changes to the current case. Chair Tobiasson suggested a vote during the June meeting.

20. Other New and Potential Cases

None were introduced.

21. Plan for Reviewing MAG Specifications and Details

Troy Tobiasson introduced discussion on the topic of setting up a procedure for the periodic review of MAG specs and details based on a standard schedule. The idea would be to ensure the complete book is reviewed more proactively. Tom Wilhite suggested the committee look at a five year plan that systematically reviews the book. Jeff Hearne discussed how ASTM typically reviews each section on a regular schedule and reports it was reviewed, even if no changes were made. Peter Kandarlis produced a spreadsheet last year to highlight what working groups could review different sections. He said he could provide this info. Troy Tobiasson said additional working groups may be needed to review sections currently not looked at by existing groups, such as an administrative group and/or one for miscellaneous specs and details that the outside working group previously worked on. Gordon Tyus said the Table of Contents in the MAG book has the date each section or detail was last reviewed. Tom Wilhite said he would work on developing a protocol and report back.

22. Discussion on Managing Agency Supplements

Chair Tobiasson introduced the issue of incorporating agency supplements in MAG. He said when agencies add a supplement; they should bring it to the committee to possibly update MAG. He warned about the proliferation of supplements, and said that when he started in Goodyear, the public works department had many supplements identical to MAG requirements. Mark Ivanich said their supplement is approved by the city council, and is not frequently updated. The last approved version for Glendale was in 2002. Mr. Tobiasson said it has been four years since their supplement was approved. Peter Kandarlis said that when the MAG book is updated, agencies should remove any supplements no longer necessary. Mr. Wilhite admitted that revising their supplements got shoved down the list of priorities. Rod Ramos said Scottsdale's development department creates new standards and details, and he thinks development and design should not be creating construction specifications. Mr. Tobiasson commended cities that have recently reviewed their supplements such as Chandler and Gilbert, and encouraged other agencies to do the same, and to share information and best practices.

23. Working Group Reports

Chair Tobiasson asked for reports from the working groups.

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

Jim Badowich said most of what the group discussed had been related earlier in the meeting when covering specific cases. He said the next meeting is scheduled for May 15th at 1:30 p.m. at the MAG office, and encouraged more turn out.

b. **Specifications and Details Outside the Right-of-Way Working Group**

Peter Kandaris said he would like to return to the group's original intent on reviewing specs outside the right-of-way. The next meeting is scheduled for May 22nd at 1:30 p.m. the MAG office.

c. **Asphalt Working Group**

Jeff Herne said the next meeting was scheduled for May 24th at noon at the ARPA office on 9th Avenue and Adams Street in Phoenix.

d. **Materials Working Group**

Brian Gallimore said the materials group would be part of the asphalt working group meeting since most of the participants are the same.

e. **Concrete Working Group**

Jeff Hearne said they discussed and provided feedback to Section 340 that Peter Kandaris had worked on. Brandon Forrey of Peoria presented ADA compliant dual sidewalk ramps developed in Peoria. Old Castle presented information on block pavers and construction. Mr. Herne said he would continue to work with contacts at Old Castle to update related specifications and details for pavers. The next meeting will follow the May 24th asphalt working group at 1:30 p.m. at the ARPA office.

24. Open General Discussion

No general discussion items were introduced.

25. Adjournment:

Mr. Tobiasson adjourned the meeting at 4:02 p.m.

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

June 6, 2012

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

AGENCY MEMBERS

- | | |
|---------------------------------|--------------------------------------|
| Jim Badowich, Avondale | * Javier Setovich, Peoria |
| Scott Zipprich, Buckeye | * Syd Anderson, Phoenix (St. Trans.) |
| * Warren White, Chandler | Jami Erickson, Phoenix (Water) |
| * Lance Calvert, El Mirage | * Marc Palichuk, Queen Creek |
| * Greg Crossman, Gilbert | * Rodney Ramos, Scottsdale |
| Mark Ivanich, Glendale | Jason Mahkovtz, Surprise |
| Troy Tobiasson, Goodyear, Chair | Tom Wilhite, Tempe, Vice Chair |
| Karl Rockwell, MCDOT (proxy) | * Jim Fox, Youngtown |
| * Bob Draper, Mesa | |

ADVISORY MEMBERS

- | | |
|------------------------------|------------------------------|
| Jeff Benedict, ARPA | Jeff Hearne, ARPA |
| Bill Davis, NUCA (proxy) | Peter Kandaris, Independent |
| * Kwigs Bowen, NUCA | Paul R. Nebeker, Independent |
| Amanda McGennis, AGC (proxy) | Jacob Rodriguez, SRP |
| * Adrian Green, AGC | |

MAG ADMINISTRATIVE STAFF

Gordon Tyus

- * Members not attending or represented by proxy.

GUESTS/VISITORS

Mike Hook, ACPA
John Kanzleamar, Contech Engineering Solutions
Kelly Kokesh, ADS
Adrian Lear, Contech Engineering Solutions
Tom Struve, City of Avondale

1. Call to Order

Chairman Troy Tobiasson announced to those gathered that after waiting fifteen minutes for members to arrive, the meeting would have to be canceled due to a lack of a quorum of agency representatives. He apologized for the inconvenience and said he would be personally contacting committee representatives from agencies with poor attendance.

2012 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

(Updated information can be found on the website: <http://www.azmag.gov/Committees/Committee.asp?CMSID=1055>)

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE	
	CARRY FORWARD CASES FROM 2011						
11-02	Case 11-02: Add an Asphalt Pavement Safety Edge option to Detail 201.	MCDOT	Bob Herz	01/05/2011 05/02/2012		0 0 0	Yes No Abstain
11-03	Case 11-03: Replace cadmium plated bolts referenced in Section 610.13 with zinc plated bolts as described in ASTM-B633.	Peoria	Paul Nebeker/ Jim Badowich	02/02/2011 07/13/2011		0 0 0	Yes No Abstain
11-12	Case 11-12: Modifications to Regulatory Requirements, MAG 107.	OROW WG/ SRP	Peter Kandaris	05/04/2011 05/25/2012		0 0 0	Yes No Abstain
11-14	Case 11-14: Update Fire Hydrant Detail 360-1, and add Wet Barrel Option (360-2) and Details (360-3).	Water/Sewer WG/ Buckeye	Scott Zipprich	07/13/2011 07/02/2012		0 0 0	Yes No Abstain
11-16	Case 11-16: Modify Section 415: Steel Flexible Metal Guardrail.	OROW WG/ SRP	Peter Kandaris	07/13/2011 05/02/2012		0 0 0	Yes No Abstain
11-18	Case 11-18: Update Section 350: Removal of Existing Improvements.	OROW WG/ SRP	Peter Kandaris	07/13/2011 05/25/2012		0 0 0	Yes No Abstain
11-21	Case 11-21: Add new Section 623: Special Bedding for Mainline Storm Drain Pipe.	Phoenix	Syd Anderson	07/13/2011 01/04/2012		0 0 0	Yes No Abstain
11-30	Case 11-30: Update Section 702: Base Material. Moved all ABC material to Section 310. Revise Section 310: Untreated Base Course. Revise for current standards. Update all references to Section 702. (Combined with previous Case 11-35.)	AGC/ Materials WG	Brian Gallimore	07/13/2011 03/07/2012	03/07/2012	12 0 0	Yes No Abstain

2012 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

(Updated information can be found on the website: <http://www.azmag.gov/Committees/Committee.asp?CMSID=1055>)

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE	
	NEW CASES FOR 2012						
12-01	Case 12-01: Miscellaneous Corrections A. Section 108 typographic errors B. Remove space in Section 108.9 C. Correct references in Detail 160 D. Correct typo in Section 610.3	Goodyear/ Mesa	Troy Tobaisson/ Bob Draper/ Warren White	02/01/2012 05/02/2012		0 0 0	Yes No Abstain
12-02	Case 12-02: Modify Section 710 Asphalt Concrete to include low traffic gyration levels.	ARPA/ Asphalt WG	Jeff Benedict	02/01/2012 03/12/2012	05/02/2012	11 0 1	Yes No Abstain
12-03	Case 12-03: Revisions to Details 260-2: Driveway Entrances	MCDOT	Bob Herz	02/01/2012 05/02/2012		0 0 0	Yes No Abstain
12-04	Case 12-04: Revisions to Section 317: Asphalt Milling	ARPA/ Asphalt WG	Jeff Benedict	02/28/2012 05/02/2012		0 0 0	Yes No Abstain
12-05	Case 12-05: Revisions to Section 711: Asphalt Paving (Table 711-1)	ARPA/ Asphalt WG	Jeff Benedict	04/04/2012 04/09/2012	07/11/2012	0 0 0	Yes No Abstain
12-06	Case 12-06: New Detail: Modified ADA Compliant Alley Entrance	Chandler	Warren White	04/04/2012 06/06/2012		0 0 0	Yes No Abstain
12-07	Case 12-07: Revisions to Section 332.6: Protection of Uncured Surface	Phoenix	Jami Erikson	04/04/2012 07/02/2012		0 0 0	Yes No Abstain
12-08	Case 12-08: Revisions to Section 611: Disinfecting Water Mains – Addition of Refreshing Plans	Phoenix	Jami Erikson	04/04/2012		0 0 0	Yes No Abstain
12-09	Case 12-09: ASTM Updates A. Section 770: Structural Steel	OROW WG/ SRP	Peter Kandararis	04/04/2012	07/11/2012	0 0 0	Yes No Abstain

2012 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

(Updated information can be found on the website: <http://www.azmag.gov/Committees/Committee.asp?CMSID=1055>)

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE
12-10	Case 12-10: Proposed revision to Section 505.6.3 Bridge Deck Joint Assemblies.	MCDOT	Bob Herz	06/06/2012		0 Yes 0 No 0 Abstain
12-11	Case 12-11: Use of Reclaimed and/or Recycled Materials for use as Base Materials	Materials, Asphalt & Concrete WG	Brian Gallimore	07/02/2012		0 Yes 0 No 0 Abstain
12-12						0 Yes 0 No 0 Abstain
12-13						0 Yes 0 No 0 Abstain
12-14						0 Yes 0 No 0 Abstain
12-15						0 Yes 0 No 0 Abstain

May 22, 2012

Maricopa Association of Governments
Standard Specifications and Details Committee
302 N. 1st Street, Suite 300
Phoenix, AZ 85003

Attention: Troy Tobiasson, Chairman

Subject: Advisory Membership

Dear Mr. Tobiasson:

I would like to apply for Advisory Membership with the MAG Standard Specifications and Details Committee as an independent industry advisor. Having served as the SRP utility advisor for the past 17 years has given me a unique perspective on the interaction of utilities and agencies in Maricopa County. My new position as Manager of DGA Consulting, PLLC, allows me to further offer my services to the committee as our primary focus is serving the regional southwest utility industry in all civil engineering aspects of the work. I will commit to attending the meetings and participating in the committee's working groups that have been so valuable in updating the standards.

Thank you for your consideration with this request.

Sincerely,



Peter Kandararis, P.E.
Manager, DGA Consulting, PLLC

Approved on June 1, 2005 with a vote of 8 yes, no, 2 abstentions and 2 absent members.

Recommended changes to the by-laws:

Advisor Members and Guests:

Advisor Members to the committee must be affiliated with an industry or utility that has a direct interest in public works construction within Maricopa County, Arizona. The industry or utility must have an operational office (no P.O. boxes) in the State of Arizona for the past five years. Admittance as an Advisor will require 1) a letter from the affiliation's officer or director requesting admittance with the name of the representative and alternate, if available, 2) sponsorship by an Agency Member and 3) a two-thirds vote from the attending Agency Members. Any changes in the Advisor or the alternate will require a letter from the affiliation officer or director. A person without an affiliation may become an Advisor providing: the person must demonstrate years of industry experience, 2) a letter of request from the person, 3) sponsorship by two Agency Members and 4) a two-thirds vote from the attending Agency Members. The effective date of the membership will be the following meeting.

The Advisory Members will be allowed to submit cases to the Committee for consideration and action however; the voting rights will remain with the Agency Members. The cases will follow the rules for processing and voting.

The Advisor Membership can be terminated on a majority vote by the attending Agency Members or if the Advisor Member and/or the alternate fails to attend two-thirds of the annual meetings. The vote for termination becomes effective at the time of the vote. At the final meeting of each year, the Committee Chairperson will review the attendance of each Advisor Member/Alternate and announce the terminated members. Re-admittance of terminated Industry/Utility members will follow the same steps as establishment of a new membership.

All other interested parties will be guests of the Committee.

With the voting of this amendment into the by-laws, the current associations/utilities and their appointed representatives will become Advisory and/or Alternate Members. The associations and their representatives are as follows:

<u>ASSOCIATIONS:</u>	<u>Advisor Member</u>	<u>Alternate Member</u>
Arizona Cement Association	John F. Ashley	
Arizona Rock Products Association	Don Green	Don Cornelison
Associated General Contractors	Brian Gallimore,	Jeff Benedict
Independent	Paul R. Nebeker	

PUBLIC UTILITIES:

Salt River Project	Peter Kandarlis
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Section 610.13 COUPLINGS, JOINTS, GASKETS AND FLANGES
Proposed Revision; Case 11-03 – June 6, 2012
Originally Submitted by City of Peoria

[Current]

Section 610.13 COUPLINGS, JOINTS, GASKETS AND FLANGES

- MAG 610

610.13 COUPLINGS, JOINTS, GASKETS AND FLANGES:

C) Bolts and Nuts:

- (1) For pipe 12 inches and smaller: Bolts and nuts for use in field connections or for connecting fittings shall be carbon steel equivalent to ASTM A307, Grade B, with cadmium plating in accordance with ASTM B-766, except that the minimum thickness of the plating shall be .00020 inches. Cadmium plated bolts shall have Class 2A threads and the nuts used with them shall have Class 2B threads. All bolt diameters shall normally be 1/8 inch smaller than the bolt hole diameter. High strength, heat treated cast iron tee-head bolts with hexagon nuts, all in accordance with the strength requirements of AWWA C-111, may be used in lieu of the cadmium plated bolts and nuts for jointing mechanical joint cast iron or ductile iron pipe and fittings only.
- (2) For pipes 16 inches and larger, all bolts and nuts on flanges for valves and flexible couplings shall be carbon steel equivalent to ASTM A307, Grade B. Bolt diameters shall normally be 1/8 inch smaller than the bolt hole diameters.

[REVISED, DRAFT]

Section 610.13 COUPLINGS, JOINTS, GASKETS AND FLANGES

- MAG 610

610.13 COUPLINGS, JOINTS, GASKETS AND FLANGES:

(C) Bolts and Nuts:

- (1) The minimum requirement for hexagon bolts, studs, and nuts to be used in underground field flanged connections or for connecting fittings shall be of the exact same material consisting of a carbon steel equivalent to ASTM A307, Grade A in accordance with the applicable requirements of AWWA C111. Bolts and studs shall have Class 2A threads with the corresponding nuts having Class 2B threads. Hexagon bolts, studs and nuts shall have a zinc plating in accordance with ASTM 2329. All bolt diameters shall normally be 1/8 inch smaller than the bolt hole diameter. Exceptions to zinc plating, if specified by the Engineer, may be 316 stainless steel per ASTM XXXX or cadmium plating per ASTM B766.
- (2) The minimum requirement for underground mechanical joint connections using T-head bolts shall meet the applicable requirements of AWWA C111 using a high strength low alloy steel per ASTM A242; also referred to the industry standard name of "Cor-ten".



P.O. Box 52025
Phoenix, AZ 85072-2025
(602) 236-5900

Case 11-12

DATE: March 4, 2012

TO: MAG Specifications and Details Committee Members

FROM: Peter Kandaris, SRP Representative
Outside of Right-of-Way Working Group

RE: **Modifications to Regulatory Requirements, MAG 107**

Purpose: Section 107.1 selects arbitrary state statutes to highlight and has not kept up with changes to state statute changes. Delete specific ARS references and keep the general requirements. This section is typically covered by agency T & C, but should be kept to act as a generic default.

Revisions: (1) Delete all paragraphs after the first in MAG 107.1. Modify the language to include materials. Simplify the indemnification language as there is a separate section for indemnification (Section 103.6.2). Provide language to allow the agency the option to request information verifying contractor compliance.

(2) Modify Subsection 107.2 to require the contractor to insure that permits are maintained and closed.

Note: Subsections 107.3 through 107.14 are not modified by this case.

SECTION 107

LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

107.1 COMPLIANCE WITH LAWS TO BE OBSERVED:

The Contractor shall keep fully informed of, observe and comply with all Federal and State laws, County and City ordinances, regulations, codes and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any way affect the conduct of the work. ~~He shall at all times observe and comply~~ The Contractor warrants that all items supplied and work performed under the contract have been sold, produced, delivered and furnished in strict compliance with all such laws, ordinances, regulations, codes, orders and decrees; ~~and to which the items, work and Contractor are subject. Upon request, Contractor shall execute and deliver to the Agency such documents as may be required by the Agency to evidence compliance with such laws, ordinances, regulations, codes, orders and decrees.~~

~~shall protect and indemnify~~ Because the Contractor will be acting as an independent contractor, the Contracting Agency and its representatives against any claim or liability arising from or based on the violation of such, whether by himself or his employees assumes no responsibility for the Contractor's acts.

~~The attention of the Contractors is directed to the provisions of the following sections, Arizona Revised Statutes:~~

~~(A) Arizona Revised Statutes 23-373. Contracts negotiated between public Contractors and public employers shall contain the following contractual provisions:~~

~~In connection with the performance of work under this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provision of the nondiscrimination clause.~~

~~The Contractor further agrees to insert the foregoing provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials.~~

~~(B) When Federal aid funds are used on a project, the prevailing basic hourly wage rates and fringe benefit payments, as determined by the Secretary of Labor pursuant to the provisions of the Davis Bacon Act, shall be the minimum wages paid to the described classes of laborers and mechanics employed to perform the contract.~~

~~(C) Arizona Revised Statutes 40-360.22 Excavations: determining location of underground facilities; providing information. This statute requires that no person shall begin excavating before the location and marking are complete or the excavator is notified that marking is unnecessary and requires that upon notification, the owner of the facility shall respond as promptly as practical, but in no event later than two working days. The "Blue Stake Center" (263-1100) was formed to provide a more efficient method of compliance with this statute.~~

~~This section is not applicable to an excavation made during an emergency which involves danger to life, health or property if reasonable precautions are taken to protect underground facilities.~~

~~(D) Arizona Revised Statutes 40-360.23. Making excavations in careful, prudent manner: liability for negligence. This statute states that obtaining information as required does not excuse any person making any excavation from doing so in a careful and prudent manner nor shall it excuse such persons from liability for any damage or injury resulting from his negligence.~~

~~(E) Arizona Revised Statutes 40-360.28 Civil penalty; liability. If the owner or operator fails to locate, or incorrectly locates the underground facility, pursuant to this article, the owner or operator becomes liable for resulting damages, costs and expenses to the injured party.~~

~~(F) Arizona Revised Statutes 32-2313. Business license; business name; branch office registration; renewal. No person, partnership, corporation or association shall engage in the business of general pest or weed control without being duly licensed/certified by the Structural Pest Control Board.~~

107.2 PERMITS:

Permits, bonding and insurance requirements shall be as required by the Contracting Agency's statutes, codes, ordinances or regulations.

The Public Agency, when acting as the Contracting Agency, will attempt to obtain the required permits, but it is the duty of the Contractor to determine that all necessary permits have been obtained, maintained and closed. The Contractor shall, at his own expense, obtain all the required permits which have not been furnished.

If the permits not included in the proposal pamphlet materially affect any condition, specification, quantity, etc. contained in the proposal pamphlet, the Contracting Agency shall issue an appropriate change order pursuant to Subsection 109.4.

In all cases, the Contractor or the person supervising the authorized work shall notify the appropriate permit agency so as to insure proper inspection by the agency concerned.

SECTION 107**LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC****107.1 COMPLIANCE WITH LAWS TO BE OBSERVED:**

The Contractor shall keep fully informed of, observe and comply with all Federal and State laws, County and City ordinances, regulations, codes and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any way affect the conduct of the work. He shall at all times observe and comply. The Contractor warrants that all items supplied and work performed under the contract have been sold, produced, delivered and furnished in strict compliance with all such laws, ordinances, regulations, codes, orders and decrees and to which the items, work and Contractor are subject. Upon request, Contractor shall execute and deliver to the Agency such documents as may be required by the Agency to evidence compliance with such laws, ordinances, regulations, codes, orders and decrees.

The Contractor shall protect and indemnify. Because The Contractor will be acting as an independent contractor, the Contracting Agency and its representatives against any claim or liability arising from or based on the violation of such, whether by himself, the Contractor or his, the Contractor's employees assumes no responsibility for the Contractor's acts.

The attention of the Contractors is directed to the provisions of the following sections, Arizona Revised Statutes:

(A) Arizona Revised Statutes 23-373. Contracts negotiated between public Contractors and public employers shall contain the following contractual provisions:

In connection with the performance of work under this contract, the Contractor agrees not to discriminate against any employee or applicant for employment because of race, religion, color or national origin. The aforesaid provision shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the contracting officer setting forth the provision of the nondiscrimination clause.

The Contractor further agrees to insert the foregoing provision in all subcontracts, except subcontracts for standard commercial supplies or raw materials.

(B) When Federal aid funds are used on a project, the prevailing basic hourly wage rates and fringe benefit payments, as determined by the Secretary of Labor pursuant to the provisions of the Davis Bacon Act, shall be the minimum wages paid to the described classes of laborers and mechanics employed to perform the contract.

(C) Arizona Revised Statutes 40-360.22 Excavations: determining location of underground facilities; providing information. This statute requires that no person shall begin excavating before the location and marking are complete or the excavator is notified that marking is unnecessary andC) Arizona Revised Statutes 40-360.22 Excavations: determining location of underground facilities; providing information. This statute requires that no person shall begin excavating before the location and marking are complete or the excavator is notified that marking is unnecessary and requires that upon notification, the owner of the facility shall respond as promptly as practical, but in no event later than two working days. The "Blue Stake Center" (263-1100) was formed to provide a more efficient method of compliance with this statute.

This section is not applicable to an excavation made during an emergency which involves danger to life, health or property if reasonable precautions are taken to protect underground facilities.

~~(D) Arizona Revised Statutes 40-360.23 Making excavations in careful, prudent manner; liability for negligence. This statute states that obtaining information as required does not excuse any person making any excavation from doing so in a careful and prudent manner nor shall it excuse such persons from liability for any damage or injury resulting from his negligence.~~

~~(E) Arizona Revised Statutes 40-360.28 Civil penalty; liability. If the owner or operator fails to locate, or incorrectly locates the underground facility, pursuant to this article, the owner or operator becomes liable for resulting damages, costs and expenses to the injured party.~~

~~(F) Arizona Revised Statutes 32-2313 Business license; business name; branch office registration; renewal. No person, partnership, corporation or association shall engage in the business of general pest or weed control without being duly licensed/certified by the Structural Pest Control Board.~~

107.2 PERMITS:

Permits, bonding and insurance requirements shall be as required by ~~the Contracting Agency's~~ statutes, codes, ordinances or regulations.

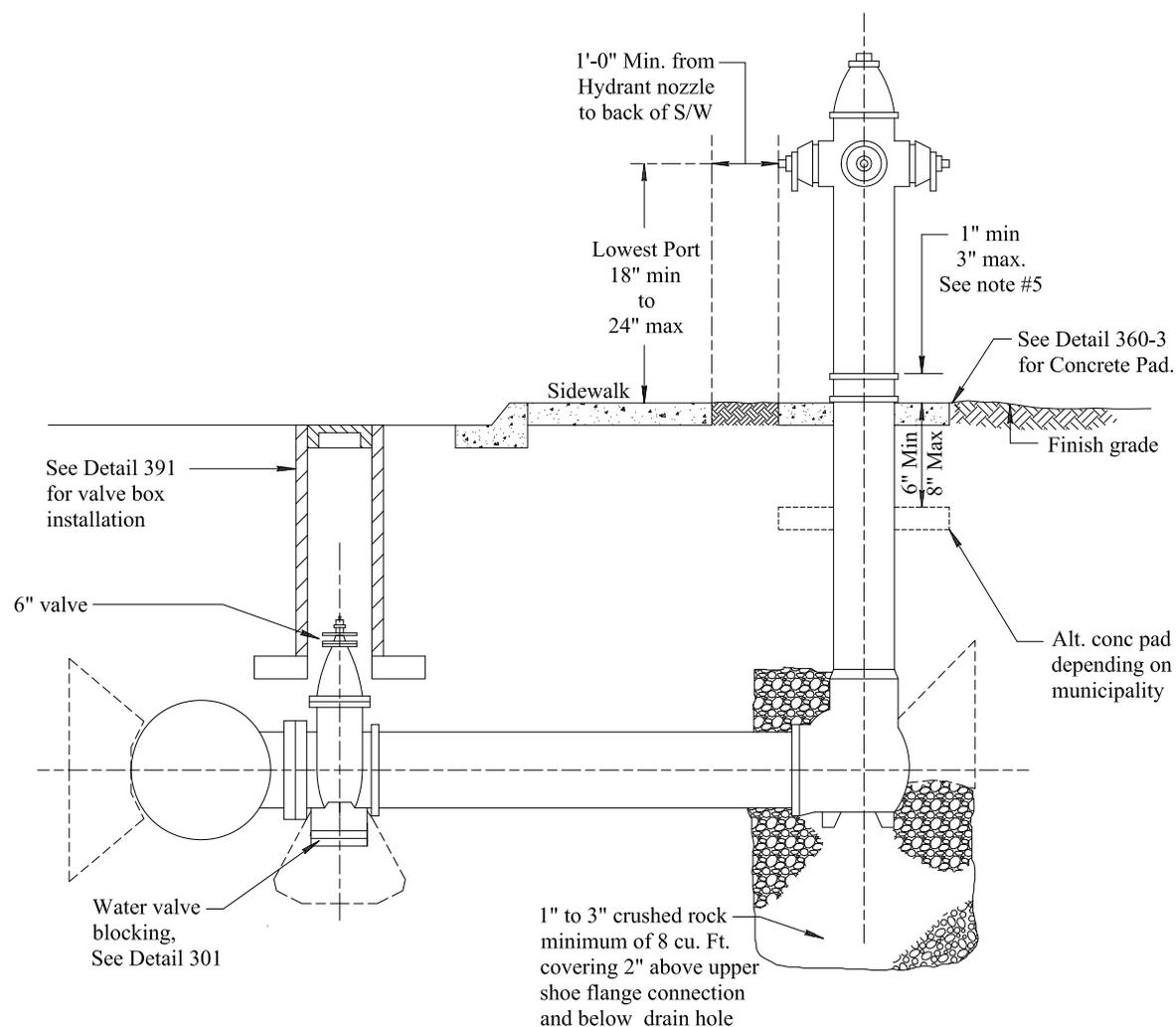
The Public Agency, when acting as the Contracting Agency, ~~will attempt to~~ may obtain some of the required permits, ~~but~~ it is the duty of the Contractor to determine that all necessary permits have been obtained, ~~maintained and closed~~. The Contractor shall, at his own expense, obtain all the required permits which have not been furnished.

If the permits not included in the proposal pamphlet materially ~~affect~~ change any condition, specification, quantity, etc. contained in the proposal pamphlet, the Contracting Agency shall issue an appropriate change order pursuant to Subsection 109.4.

In all cases, the Contractor or the person supervising the authorized work shall notify the appropriate permit agency so as to insure proper inspection by the agency concerned.

General Notes:

1. Joints between the valve and the main shall be flanged type.
Joints between the valve and hydrant shall be restraint or mechanical type.
2. Restraints shall be mechanical restraint or thrust block per MAG Std Dtl 380.
3. A flange joint by mechanical joint valve shall be used as the transition between the joint types.
4. Piping between water valve and hydrant shall be ductile iron.
5. See Detail 362 for location of hydrant.
6. Pumper connection shall face the street.
7. No valves are to be in curb.
8. National standard threads required on all connections unless otherwise directed.
9. See Detail 360-3 for Concrete Pad.
10. Fire Hydrant shall be freshly painted prior to final.
11. See MAG Std. Spec. 756 for hydrant Material.



DETAIL NO.

360-1

STANDARD DETAIL
ENGLISH

DRY BARREL FIRE HYDRANT INSTALLATION

REVISED

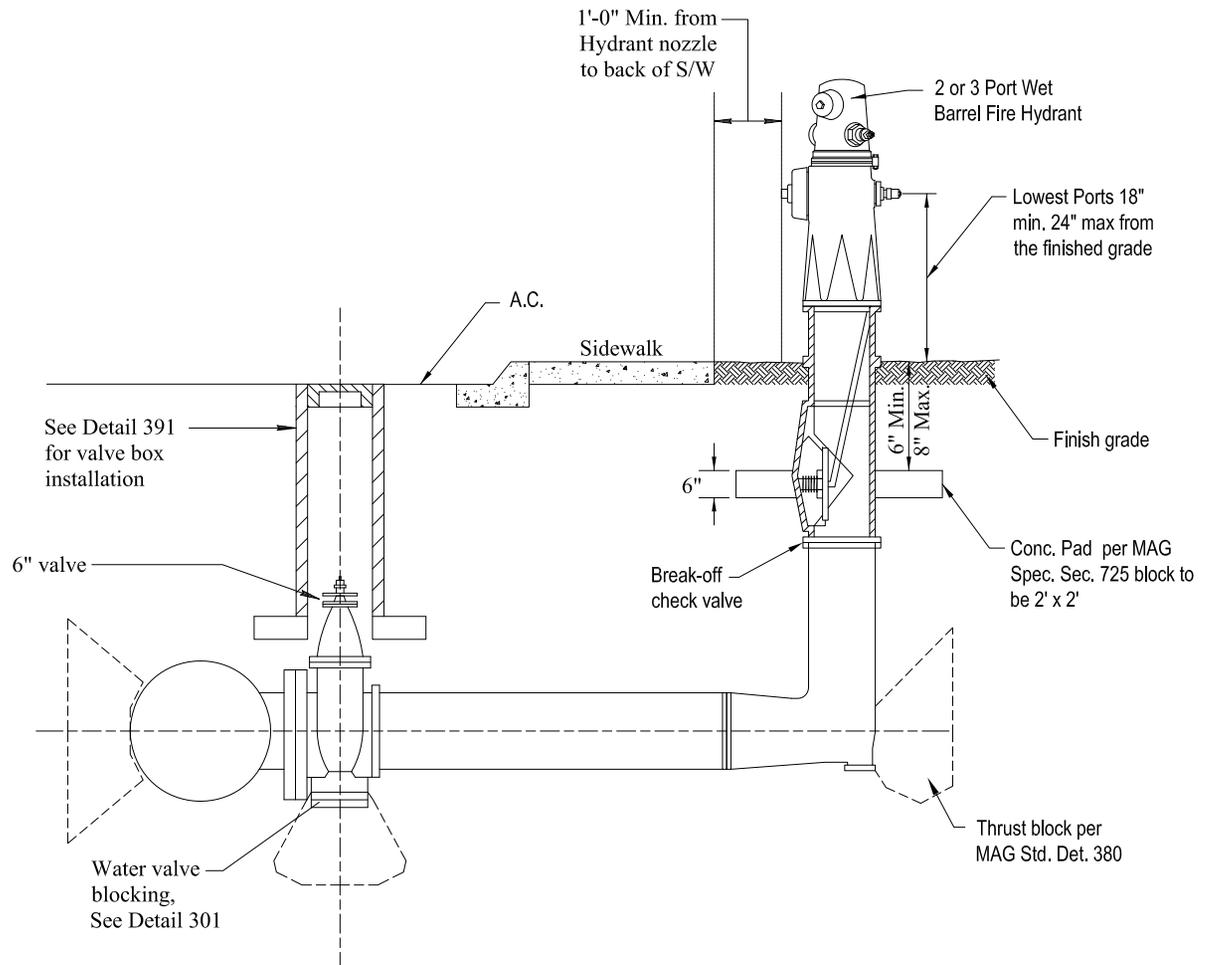
04-27-2011

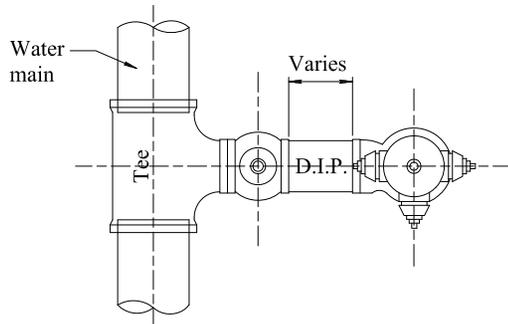
DETAIL NO.

360-1

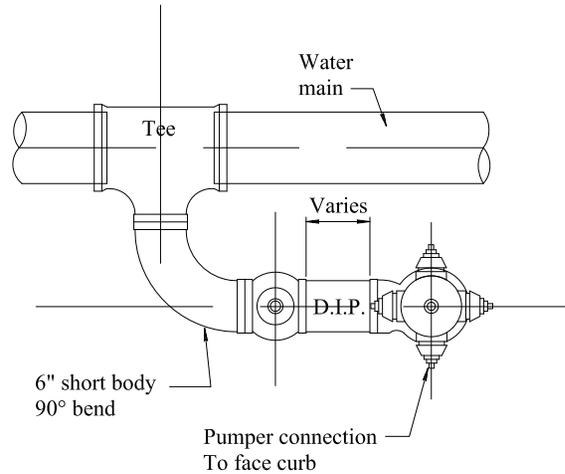
General Notes:

1. Joints between the valve and the main shall be flanged type. Joints between the valve and hydrant shall be mechanical restraint mechanical type.
2. Restraints shall be mechanical restraint or thrust block per MAG Std. Det. 380.
3. A flange joint by mechanical joint valve shall be used as the transition between the joint types.
4. Piping between water valve and hydrant shall be ductile iron.
5. See Detail 362 for location of hydrant.
6. Pumper connection shall face the street.
7. No valves are to be in curb.
8. National standard threads required on all connections unless otherwise directed.
9. See Detail 360-3 for Concrete Pad.
10. Fire Hydrant shall be freshly painted prior to final.
11. The hydrant shall have 2- 2½" port and 1- 4½" port (industrial or commercial).
12. The hydrant shall have 1- 2½" port and 1- 4½" port (residential).



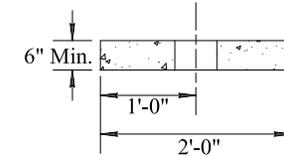
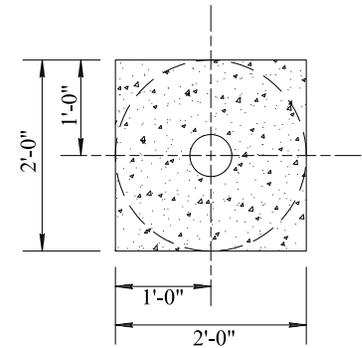


**TYP MAIN CONNECTION
(PREFERRED)**

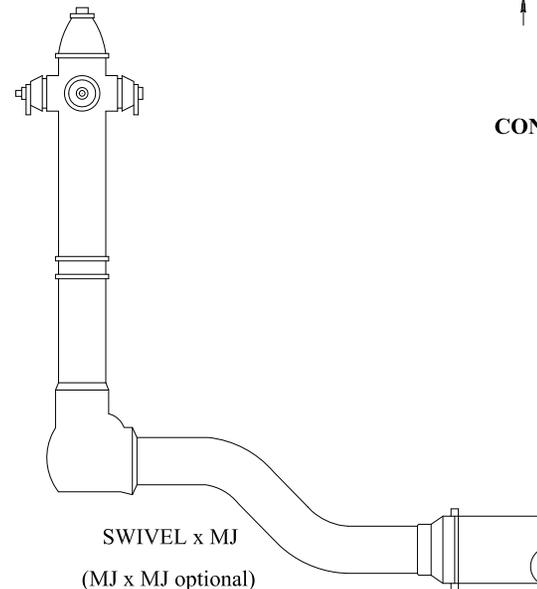


ALT MAIN CONNECTION

Square or round is acceptable
If Round: 24" diameter min. required



CONCRETE PAD DETAIL



SWIVEL x MJ
(MJ x MJ optional)
OFFSET FITTINGS

General Notes:

1. Concrete for pad shall be Class "A".
2. Score line shall bisect concrete pad at mid point of all sides.
3. Concrete color shall match adjacent concrete. The finished concrete surface shall have a rough broom finish (surface only).
4. Multiple offset fittings shall not be allowed.
5. Minimum clearance per NFPA-24.
6. Minimum 36" clearance around fire hydrant.
7. 1/2" bituminous expansion shall be placed around the barrel of the Fire Hydrant at the concrete pad.

DETAIL NO.
360-3



STANDARD DETAIL
ENGLISH

FIRE HYDRANT INSTALLATION DETAIL

REVISED
04-27-2011

DETAIL NO.
360-3



P.O. Box 52025
Phoenix, AZ 85072-2025
(602) 236-5900

Case 11-18

DATE: February 23, 2012

TO: MAG Specifications and Details Committee Members

FROM: Peter Kandarlis, SRP Representative
Outside of Right-of-Way Working Group

RE: **Section 350: Removal of Existing Improvements**

Purpose: Section 350 needs updating to include detailed information on handling utilities when renovations occur within the right-of-way and backfill of voids left from removals where structures are to be installed (manholes, vaults, etc.). Additionally, payment for removals should delineate specific removal items to insure that the scope is understood during the bid process.

Revisions:

- a) Add new language in Section 350.2.1 for utility locating, abandonment and removal.
- b) Make the paragraph referencing Section 336 more generic to include all requirements, not just pavement cuts.
- c) Include language in Section 350.2.3 to define backfill and compaction requirements for voids left from removals. Present language only provides for trench backfill and compaction.
- d) Identify payment for removals for each item.

SECTION 350

REMOVAL OF EXISTING IMPROVEMENTS

350.1 DESCRIPTION:

This work shall consist of removal and disposal of various existing improvements, such as pavements, structures, pipes, conduits, curbs and gutters, and other items necessary for the accomplishment of the improvement.

350.2 CONSTRUCTION METHODS:

350.2.1 Utilities

The removal of existing improvements shall be conducted in such a manner as not to injure active utilities or any portion of the improvement that is to remain in place. ~~See Section 107.~~

Removal work shall comply with the requirements of Arizona Revised Statutes-40-360.21 through 40-360.29 (one call system, Blue Stake) in notification to the interested utility owners prior to start of work. The Contractor shall resolve all problems with the utility owners concerned.

Utilities shall not be abandoned in place below new structures that are part of the work. In all other cases, any in-place utility abandonment shall be allowed if abandonment is noted on the plans. Otherwise, abandoned utilities shall be removed.

Utilities to be removed shall be disconnected and taken out in accordance with the requirements of the utility owner to the limits shown on the plans. Utility removal shall not be performed until a release has been obtained from the utility stating that their respective service connection and appurtenant equipment have been disconnected, removed or sealed and plugged in a safe manner.

The Engineer shall be contacted if utilities are encountered during the work that are not shown on the plans. These previously unknown utilities shall be marked on the installation record drawings.

350.2.2 Others

Sidewalks shall be removed to a distance required to maintain a maximum slope for the replaced portion of sidewalk, for one inch per foot and all driveways shall be removed to a distance as required by standard details.

Existing concrete driveway curbs and gutters shall be removed to the right-of-way line and the new end of curb faced.

Portland cement concrete pavements, curbs and gutters and sidewalks designated on the plans for removal shall be saw-cut at match lines, in accordance with Section 601 and removed.

Asphalt concrete pavements designated on the plans for removal shall be ~~cut in accordance with~~ meet the requirements of Section 336.

Removal of trees, stumps, roots, rubbish, and other objectionable materials in the right-of-way shall be done in accordance with Section 201.

350.2.3 Backfill and Disposal

Backfill of all excavated areas below structures shall be in accordance with Section 206.4. Backfill and compaction of all other excavated areas shall be compacted to the densities as prescribed in Section 601 (trenches) or Section 211 (holes, pits or other depressions).

All surplus materials shall be immediately hauled from the jobsite and disposed of in accordance with Section 205.6.

350.3 MISCELLANEOUS REMOVAL AND OTHER WORK:

This work shall include, but not be limited to the following, where called for on the plans:

- (A) Relocate existing fence and gate.
- (B) Remove and reset mail boxes.
- (C) Remove signs and bases in right-of-way.
- (D) Remove planter boxes, block walls, concrete walls, footings, headwalls, irrigation structures, and storm water inlets.
- (E) Install plugs for pipes and remove existing plugs as necessary for new construction.
- (F) Remove wooden and concrete bridges.
- (G) Remove median island slabs.
- (H) Remove pavements and aggregate base where called for outside the roadway prism.

350.4 PAYMENT:

Payment for removals will be made at the unit ~~bid-proposal~~ prices ~~bid in the applicable proposal~~ pay for each removal items, which price shall be full compensation for the item complete, as described herein or on the plans.

SECTION 350

REMOVAL OF EXISTING IMPROVEMENTS

350.1 DESCRIPTION:

This work shall consist of removal and disposal of various existing improvements, such as pavements, structures, pipes, conduits, curbs and gutters, and other items necessary for the accomplishment of the improvement.

350.2 CONSTRUCTION METHODS:

350.2.1 Utilities

The removal of existing improvements shall be conducted in such a manner as not to injure active utilities or any portion of the improvement that is to remain in place. See Sections 105.6 and 107.11

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~~Removal work shall comply with the requirements of Arizona Revised Statutes 40-360.21 through 40-360.29 (one call system, Blue Stake) in notification to the interested utility owners prior to start of work. The Contractor shall resolve all problems with the utility owners concerned.~~

Comment [rth1]: The information in this paragraph is in Section 105.6. Do not duplicate existing requirements.

~~Utilities shall not be abandoned in place below new structures that are part of the work. In all other cases, any in-place utility abandonment shall be allowed if abandonment is noted on the plans. Otherwise, abandoned utilities shall be removed.~~

~~Utilities to be removed shall be disconnected and taken out in accordance with the requirements of the utility owner to the limits shown on the plans. Utility removal shall not be performed until a release has been obtained from the utility stating that their respective service connection and appurtenant equipment have been disconnected, removed or sealed and plugged in a safe manner.~~

Comment [rth2]: Consider locating this paragraph to Section 105.6 or Section 107.11.

The Engineer shall be contacted if notified when utilities are encountered during the work that are not shown on the plans. These previously unknown utilities shall be marked on the installation record drawings.

350.2.2 Others

Sidewalks shall be removed to a distance required to maintain a maximum slope for the replaced portion of sidewalk, for one inch per foot and all driveways shall be removed to a distance as required by standard details.

Existing concrete driveway curbs and gutters shall be removed to the right-of-way line and the new end of curb faced.

Portland cement concrete pavements, curbs and gutters and sidewalks designated on the plans for removal shall be saw-cut at match lines, in accordance with Section 601 and removed.

Asphalt concrete pavements designated on the plans for removal shall be ~~cut in accordance with~~ meet the requirements of Section 336.

Removal of trees, stumps, roots, rubbish, and other objectionable materials in the right-of-way shall be done in accordance with Section 201.

350.2.3 Backfill and Disposal

Backfill of all excavated areas below structures shall be in accordance with Section 206.4. Backfill and compaction of all other excavated areas shall be compacted to the densities as prescribed in Section 601 (trenches) or Section 211 (holes, pits or other depressions).

All surplus materials shall be immediately hauled from the jobsite and disposed of in accordance with Section 205.6.

350.3 MISCELLANEOUS REMOVAL AND OTHER WORK:

This work shall include, but not be limited to the following, where called for on the plans:

- (A) Relocate existing fence and gate.
- (B) Remove and reset mail boxes.
- (C) Remove signs and bases in right-of-way.
- (D) Remove planter boxes, block walls, concrete walls, footings, headwalls, irrigation structures, and storm water inlets.
- (E) Install plugs for pipes and remove existing plugs as necessary for new construction.
- (F) Remove wooden and concrete bridges.
- (G) Remove median island slabs.
- (H) Remove pavements and aggregate base where called for outside the roadway prism.

350.4 PAYMENT:

Payment for removals will be made at the unit ~~bid proposal~~ price ~~bid in the applicable proposal pay~~ for each removal items, which price shall be full compensation for the item complete, as described herein or on the plans.

Case 12-05

Modifications to MAG 711-1 table

We still showed a typo in the math nomenclature on the original binder section. I have added PG64-16 that is used extensively as a both regular binder and asphalt base for asphalt rubber. I deleted the PG82 grade. This has never been used and is not recommended for use.

The PG76-16 is included because ADOT uses it in desert climates. This product is not expected to be used regularly. It is expensive and is usually a special order product. I have changed all of the AASHTO tests to ASTM this also eliminates the temporary test methods that were indicated before.

I have also taken the direct tension test out. The test is still used for modified asphalts but the standard Bending Beam Rheometer is used to determine low temperature qualities in neat paving asphalt. The direct tension can be specified for modified asphalt tests.

PAVING ASPHALT

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711.1 GENERAL:

The asphalt shall be produced from crude asphalt petroleum or a mixture of refined liquid asphalt and refined solid asphalt. It shall be free from admixture with any residues obtained by the artificial distillation of coal, coal tar, or paraffin oil and shall be homogeneous and free from water.

Asphalt shall not be heated during the process of its manufacture, storage, or during construction so as to cause injury as evidenced by the formation of carbonized particles.

711.2 TESTING REQUIREMENTS:

Paving asphalt shall be classified by the Performance Grading System and shall conform to the requirements set forth in Table 711-1 and ~~AASHTO M-320~~ ASTM D6376 with the PAV temperature changes noted herein in this table.

TABLE 711-1				
PERFORMANCE GRADING SYSTEM				
	PG 58-22	1064-16 PG 70-10	1070-10 PG 76-10	1076-16 PG 82-16
Original Asphalt				
Viscosity, ASTM D4402 (Note 1) Max. 3 Pa-s, Test Temp, °C	135	135	135	135
Dynamic Shear TP5 <u>ASTM D7175</u> (Note 2) G*/Sin δ, Min., 1.0 kPa Test Temp. @ 10 rad/s, °C	58	7064	7670	8276
Rolling Thin Film Oven Residue (AASHTO T-240 <u>ASTM D2872</u>)				
Mass Loss, Maximum % Dynamic Shear TP5 <u>ASTM D7175</u> G*/Sin δ, Min., 2.20 kPa Test Temp. @ 10 rad/s, °C	1.0 58	1.0 7064	1.0 7670	1.0 8276
Pressure Aging Vessel Residue (AASHTO R-28 <u>ASTM D6521</u>)				
PAV Aging Temperature, °C	100	100	110	110
Dynamic Shear TP5 <u>ASTM D7175</u> G*/Sin δ, Max., 5000 kPa Test Temp. @ 10 rad/s, °C	22	28	3734	3434
Creep Stiffness, TP1 <u>ASTM D6648</u> (Note 3) S, Maximum, 300.0 Mpa m-value, Minimum, 0.300 Test Temp. @ 60s, °C	-12	-6	0	-6
Direct Tension, TP3 <u>ASTM D6723</u> (Note 3) Failure Strain, Minimum 1.0% Test Temp. @ 1.0 mm/min. °C	-12	-6	0	-6

Comment [JB2]: Work horse grade for all of Maricopa County agencies

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Comment [JB1]: This is used in desert climates as the base asphalt for rubber projects

Comment [JB3]: A very stiff and expensive binder that is used occasionally. A typical ADOT grade.

Comment [JB4]: This should be same as the RTFO: G*/Sin δ, Min

Revised 2012

Comment [JB5]: This test is only used for modified asphalts. The table is restored.

On all Grades Flash Point Temperature ~~T48~~ASTM D92: Minimum 230 °C and Mass Loss, Maximum 1.00 percent.

NOTES:

- (1) This requirement may be waived at the discretion of the specifying agency if the supplier warrants that the asphalt binder can be adequately pumped and mixed at temperatures that meet all applicable safety standards.

(2) For quality control of unmodified asphalt cement production, measurement of the viscosity of the original asphalt cement may be substituted for dynamic shear measurements of $G^*/\sin(d)$ at test temperatures when the asphalt is a Newtonian fluid. Any suitable standard means of viscosity measurement may be used, including capillary or rotational viscometry (~~T210 or T202~~ASTM D4402).

(3) If the Creep Stiffness is below 300 MPa, the direct tension test is not required. If the Creep Stiffness is between 300 and 600 MPa, the direct tension failure strain requirement can be used in lieu of the Creep Stiffness requirement. Direct tension test is recommended for polymer modified asphalt binders. The m-value requirement must be satisfied in all cases.

Comment [JB6]: This language is inserted for clarity.

PAVING ASPHALT

711.1 GENERAL:

The asphalt shall be produced from crude asphalt petroleum or a mixture of refined liquid asphalt and refined solid asphalt. It shall be free from admixture with any residues obtained by the artificial distillation of coal, coal tar, or paraffin oil and shall be homogeneous and free from water.

Asphalt shall not be heated during the process of its manufacture, storage, or during construction so as to cause injury as evidenced by the formation of carbonized particles.

711.2 TESTING REQUIREMENTS:

Paving asphalt shall be classified by the Performance Grading System and shall conform to the requirements set forth in Table 711-1 and ASTM D6376 with the PAV temperature changes noted herein in this table.

TABLE 711-1				
PERFORMANCE GRADING SYSTEM				
	PG 58-22	PG 64-16	PG-70-10	PG 76-16
Original Asphalt				
Viscosity, ASTM D4402 (Note 1) Max. 3 Pa-s, Test Temp, °C	135	135	135	135
Dynamic Shear ASTM D7175 (Note 2) G*/Sin δ, Min., 1.0 kPa Test Temp. @ 10 rad/s, °C	58	64	70	76
Rolling Thin Film Oven Residue (ASTM D2872)				
Mass Loss, Maximum % Dynamic Shear ASTM D7175 G*/Sin δ, Min., 2.20 kPa Test Temp. @ 10 rad/s, °C	1.0	1.0	1.0	1.0
Pressure Aging Vessel Residue (ASTM D6521)				
PAV Aging Temperature, °C	100	100	110	110
Dynamic Shear ASTM D7175 G**Sin δ, Max., 5000 kPa Test Temp. @ 10 rad/s, °C	22	28	34	34
Creep Stiffness, ASTM D6648 (Note 3) S, Maximum, 300.0 Mpa m-value, Minimum, 0.300 Test Temp. @ 60s, °C	-12	-6	0	-6
Direct Tension, ASTM D6723 (Note 3) Failure Strain, Minimum 1.0% Test Temp. @ 1.0 mm/min. °C	-12	-6	0	-6

On all Grades Flash Point Temperature ASTM D92: Minimum 230 °C and Mass Loss, Maximum 1.00 percent.

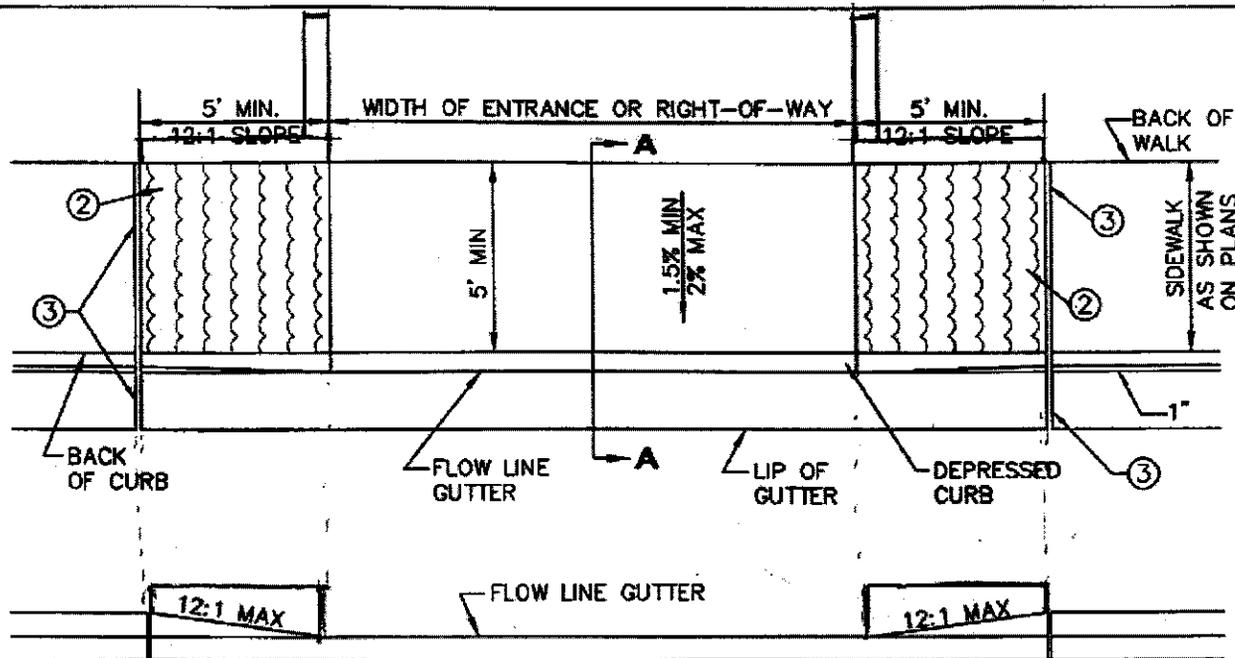
Revised 2012

NOTES:

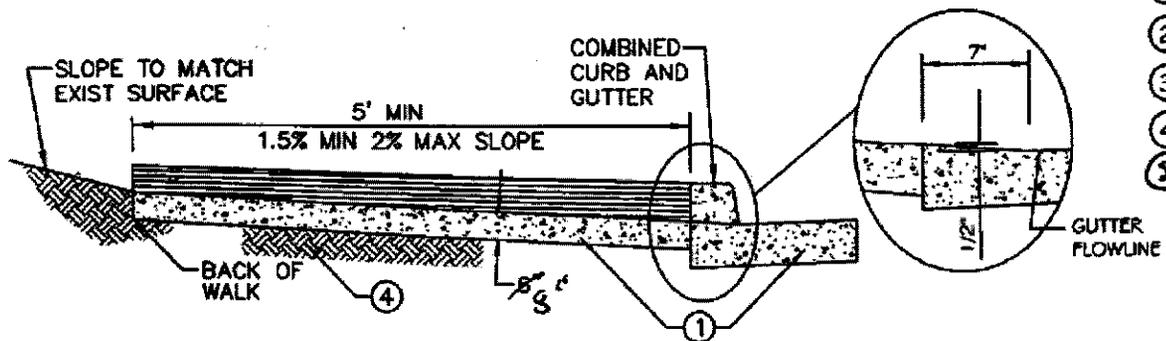
- (1) This requirement may be waived at the discretion of the specifying agency if the supplier warrants that the asphalt binder can be adequately pumped and mixed at temperatures that meet all applicable safety standards.

(2) For quality control of unmodified asphalt cement production, measurement of the viscosity of the original asphalt cement may be substituted for dynamic shear measurements of $G^*/\sin(d)$ at test temperatures when the asphalt is a Newtonian fluid. Any suitable standard means of viscosity measurement may be used, including capillary or rotational viscometer (ASTM D4402).

(3) If the Creep Stiffness is below 300 MPa, the direct tension test is not required. If the Creep Stiffness is between 300 and 600 MPa, the direct tension failure strain requirement can be used in lieu of the Creep Stiffness requirement. Direct tension test is recommended for polymer modified asphalt binders. The m-value requirement must be satisfied in all cases.



ELEVATION



SECTION A-A

NOTES:

- ① CLASS "B" CONCRETE PER MAG SECTION 725.
- ② LIMITS OF HEAVY ROUGH BROOM FINISH.
- ③ EXPANSION JOINTS PER MAG SECTION 390.
- ④ SUBGRADE PREPARATION PER MAG SECTION 301.
- ⑤ 6" SINGLE CURB PER MAG DTL. 222, TYPE 'B'.

DETAIL NO. 260	 MARICOPA ASSOCIATION OF GOVERNMENTS STANDARD DETAIL ENGLISH	ALLEY ENTRANCE (WITH COMBINED CURB AND GUTTER)	REVISED 05/02/2012 DRAFT	DETAIL NO. 260
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SECTION 332 (Case 12-07 – Asphalt Working Group Proposed Revision)

PLACEMENT AND CONSTRUCTION OF ASPHALT EMULSION SLURRY SEAL COAT

332.1 DESCRIPTION:

The work covered by this specification consists of furnishing all labor, equipment, and materials necessary to perform all operations required for the application of an asphalt emulsion slurry surface.

NOTE: THESE SPECIFICATIONS DO NOT COVER THE APPLICATION OF COAL TAR SLURRY SEALS.

332.2 MATERIALS:

The asphalt emulsion material, mineral aggregate and mineral filler shall be as specified in Section [715](#).

332.3 EQUIPMENT:

332.3.1 General: When requested by the Engineer, descriptive information on the slurry seal mixing and applications equipment to be used will be submitted for approval no less than 7 days before the work starts.

332.3.2 Self Contained Slurry Machine: The mixing machine will be a continuous flow type. It will be capable of accurately delivering a predetermined proportion of pre-wetted aggregate, mineral filler, water and asphalt emulsion to the mixing chamber and discharging the thoroughly blended mixture on a continuous basis. The mixing machine will be equipped with a mineral filler feeder. The feeder will have an accurate metering device or method to introduce a predetermined proportion into the mixer. The filler will be introduced into the mixing chamber at the same time and location as the aggregate.

The mixing machine will be equipped with a water pressure system and fog-type spray bar, adequate for complete water fogging of the surface to be sealed.

The mixing machine will be mounted on a truck or other vehicle capable of producing evenly controlled low rates of speed throughout the operation to ensure the slurry is spread evenly and all cracks are filled.

332.3.3 Slurry Spreading Equipment: Attached to the mixer machine shall be a mechanical type squeegee spreader equipped with flexible material in contact with the surface to prevent loss of slurry from the distributor. It shall be maintained to prevent loss of slurry on varying grades and crown by adjustments to assure uniform spread. There shall be a steering device and a flexible strike-off. The spreader box shall have an adjustable width. The box shall be kept clean. Build-up of asphalt and aggregate on the box shall not be permitted. The use of burlap drags or other drags shall be approved by the Engineer.

332.3.4 Rollers: Rollers shall be approved by the Engineer.

332.3.5 Cleaning Equipment: Power brooms, pick-up brooms, air compressors, water flushing equipment, and hand brooms shall be suitable for cleaning the surface and cracks of the old surface.

332.3.6 Auxiliary Equipment: Hand squeegees, shovels, and other equipment shall be provided as necessary to perform the work.

332.4 PREPARATION OF THE SURFACE:

332.4.1 Immediately before applying the slurry, the area to be surfaced shall be cleaned of dirt, loose material, and other objectionable material. In urban areas, the surface shall be cleaned with a self-propelled pick-up sweeper. In rural areas, power brooms may be used. When necessary, cleaning shall be supplemented by hand brooms. Water flushing will not be permitted in areas where cracks are present in the pavement surface.

The slurry shall not be applied until an inspection of the surface has been made by the Engineer and he has determined that it is suitable.

SECTION 332 (Case 12-07 – Asphalt Working Group Proposed Revision)

332.4.2 Tack Coat: When specified, a tack coat shall be applied in accordance with Section [329](#) using the same type and grade of asphalt emulsion as specified for the slurry seal.

332.4.3 Water Fogging: When required by local conditions, the surface, directly ahead of the slurry box, shall be pre-wetted by fogging. The fogging shall be accomplished in such a manner that the entire surface is damp with no apparent flowing water or puddles.

332.5 WEATHER LIMITATIONS:

The slurry seal shall not be applied unless the pavement temperature is at least 45°F. and rising. The mixture shall not be applied during unsuitable weather.

332.6 PROTECTION OF UNCURED SURFACE:

~~Adequate methods such as barricades, flagmen, pilot cars, etc., shall be used to protect the uncured slurry surface from all types of traffic. Adequate means shall be provided by the Contractor to protect the uncured product. Any damage done to the product shall be repaired at the Contractor's expense.~~

332.7 MIXING AND APPLICATION:

The mixing time shall not exceed four minutes. Excessive mixing will not be allowed. The resulting mixture shall have the desired consistency, when placed on the surface. If breaking, hardening, segregation, balling or lumping occurs during the mixing process, the batch will be discarded.

A sufficient amount of slurry shall be carried in all parts of the spreader at all times so that a complete coverage is obtained.

No streaks caused by oversized aggregate shall be left in the finished surface. Build-up on longitudinal and transverse joints will be kept to a minimum. Approved squeegees shall be used to spread slurry in areas nonaccessible to the slurry mixer.

332.8 ROLLING:

As soon as the asphalt slurry has been set sufficiently to prevent any material from being picked up, it shall be rolled until all ridges have been ironed out and a uniform surface is obtained.

332.9 MEASUREMENT:

Quantities and materials for this work will be paid for at the contract price per unit of measurement for each of the following pay items as indicated in the proposal.

- | | |
|---------------------------------------|-------------------|
| (A) Bituminous tack coat if specified | Ton (Diluted) |
| (B) Emulsified asphalt for slurry | Ton (Undiluted) |
| (C) Aggregate for slurry | Ton (Surface Dry) |

- End of Section -



P.O. Box 52025
Phoenix, AZ 85072-2025
(602) 236-5900

Case 12-09

DATE: April 3, 2012

TO: MAG Specifications and Details Committee Members

FROM: Peter Kandarlis, SRP Representative
Outside of Right-of-Way Working Group

RE: **Section 770: ASTM Updates for Structural Steel**

Purpose: Section 770.2 references various ASTM steel standards that have been removed or replaced. Update and simplify this subsection to be more consistent with general steel standards. This is a default specification and does not need to cover all types of steel for all types of uses.

Revisions:

- a) High-Strength, Low-Alloy Structural Steel: Federal guidelines standards recommend three types of high-strength, low-alloy structural steels; (1) ASTM A572 is the most common and available in Grades 42, 50, 55, 60 and 65 ksi; (2) ASTM A 992 for W shapes (rolled wide flange shapes); and (3) ASTM A 709 structural shapes, plates, and bars and quenched and tempered alloy steel for structural plates intended for use in bridges. Delete reference to A242, A606, A607 (withdrawn) and A653 (this material is typically used with galvanized chain link fence construction, not structural steel).
- b) Standard Structural Steel: Change the title to be more generic since the copper content is useful for non-marine corrosion protection, but not the primary reason for use of the standard. ASTM A36 is a general purpose structural grade steel with a minimum yield strength of 36 ksi. Delete reference to A 570 (withdrawn), A611 (withdrawn) and A653 (see above).

SECTION 770**STRUCTURAL AND RIVET STEEL, RIVETS, BOLTS, PINS, AND ANCHOR BOLTS****770.2 STRUCTURAL STEEL:**

Stock Materials: The Contractor shall select the material he wishes to use from stock. The Contractor shall furnish 3 certified mill reports for each of the heat numbers. Two samples shall be taken by a representative of the Engineer from each heat number, one for the tension test and one for the coldbend test. If the heat numbers cannot be identified, the representative of the Engineer shall select random test specimens from the unidentifiable heats. The number of such test specimens shall be at the discretion of the Engineer. The cost of all tests on stock material shall be borne by the Contractor.

High Strength Low-Alloy Structural Steel: The material shall conform to the requirements of ASTM ~~A242, A572, A709 or A992/A572M, A606, A607 or A653 Grades C, D, or E~~ as specified in the special provisions.

~~Copper Bearing General Purpose~~ Structural Steel: ~~Copper bearing s~~Structural steel shall conform to the requirements of ASTM A36 with a minimum of 0.2 percent copper., ~~A570, A611, or A653 as specified in the special provisions.~~



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: May 15, 2012
To: MAG Specifications and Details Committee
From: Robert Herz, MCDOT Representative
Subject: Proposed revision to Section **505.6.3 Bridge Deck Joint Assemblies.** **Case 12-10**

PURPOSE: Eliminate the MCDOT supplement to this section by incorporating the requirement into the MAG specification.

REVISION: Add to 505.6.3.3 Construction Requirements a subsection: (7) Welding. The proposed changes are show below using track changes.

505.6.3 Bridge Deck Joint Assemblies:

505.6.3.1 Description: This work shall consist of furnishing and installing expansion devices including the seals, anchorage system, and hardware in accordance with the project plans and these specifications.

505.6.3.2 Materials: Elastomer Seals shall be of the Compression Seal or Strip Seal type, and shall conform to the requirements of the Arizona Department of Transportation Standard Specifications for Road and Bridge Construction Section 1011-5.

Steel shapes and plates shall conform to the requirements of ASTM A36, or ASTM A588.

505.6.3.3 Construction Requirements:

(1) General: Deck joint assemblies shall consist of elastomer and steel assemblies which are anchored to the concrete at the deck joint. The seal armor shall be cast in the concrete. The completed assembly shall be properly installed in the planned position, shall satisfactorily resist the intrusion of foreign material and water, and shall provide bump-free passage of traffic. For each size of seal on a project, one piece of the seal material supplied shall be at least 18 inches longer than required by the project Plans. The additional length will be removed by the Engineer and used for materials testing. Certificates of Compliance conforming to the requirements of Section 106.2 shall also be submitted by the Contractor.

(2) Shop Drawings: Prior to fabrication, the Contractor shall submit shop drawings to the Engineer for approval, in accordance with the requirements of Section 105.2. The shop drawings shall show complete details of the method of installation to be followed, including a temperature correction chart for adjusting the dimensions of the joint according to the ambient temperature, and any additions or rearrangements of the reinforcing steel from that shown on the project plans.

~~Deck joint assemblies for pretensioned and post-tensioned prestressed concrete superstructures shall be installed at the narrowest joint opening possible to allow for long-term superstructure shortening.~~

(3) Elastomer Seals: Seals shall conform to the requirements specified.

(4) Armor: All steel ~~forecast~~for cast-in-place deck joint assemblies shall conform to the requirements specified.

(5) Galvanizing: All steel parts of strip seal assemblies shall be galvanized after fabrication, in accordance with the requirements of ASTM A123 and A153, unless ASTM A588 steel is used. Bolts shall be high strength, conforming to the requirements of ASTM A325M, with a protective coating of cadmium or zinc, followed by a chromate and baked organic coating conforming to the requirements of ASTM F1135, Grade 3, 5, 6, 7, or 8 and Color Code A.

Steel parts of compression seal assemblies do not require galvanizing, plating, or painting.

(6) Joint Preparation and Installation: At all joint locations, the Contractor shall cast the bridge decks and abutment backwalls with a formed blockout, sized to accommodate the pre-assembled joint assembly. The joint assembly will be anchored in the concrete to be placed with the secondary pour in the blockout. Prior to the secondary pour, the surface of the existing concrete in the blockout shall be coated with an approved adhesive specifically formulated for bonding new concrete to old concrete.

~~Deck joint assemblies for pretensioned and post-tensioned prestressed concrete superstructures shall be installed at the narrowest joint opening possible to allow for long-term superstructure shortening.~~

~~(7) Welding: All welding and inspection of welding for structural steel shall be performed in accordance with the requirements of the latest revision of the AASHTO/AWS D1.5M/D1.5 Bridge Welding Code. The use of electro-slag welding process on structural steel will not be permitted.~~

Installed armor assemblies shall be covered or otherwise protected at all times prior to installing the elastomer portion of the joint assembly. The elastomer shall be installed at such time and in such manner that it will not be damaged by construction operations.

~~The seal element shall be installed subject to these specifications and approval of the Engineer.~~ Immediately prior to the installation of the seal element, the steel contact surfaces of the joint armor shall be clean, dry, and free of oil, rust, paint, or foreign material. Any perforation or tearing of the seal element due to installation procedures or construction activities will be cause for rejection of the installed seal element.

During the installation of all proprietary deck joint assemblies, the manufacturer's representative shall be present. As a minimum, the representative shall be present during the placement of the joint assembly in the deck blockout, prior to the secondary concrete pour, and shall also be present during the installation of the seal element.

DATE: June 28, 2012

TO: MAG Specification and Details Committee Members

FROM: Brian Gallimore, Materials Working Group/AGC
Jeff Benedict, Asphalt Working Group/ARPA
Jeff Hearne, Concrete Working Group/ARPA

RE: Reclaimed, Recycled Materials

PURPOSE: Addresses the use of reclaimed and or recycled materials along with proper reference adjustments to their respective corresponding sections

REVISIONS:

Section 701

- 1) Added section 701.4 and correctly adjusted sequential numbering, 701.4 "RECLAMINED CONCRETE MATERIAL (RCM); a definition and general statement to describe the product – with reference to AASHTO M 319.
- 2) Added section 701.5 and correctly adjusted sequential numbering, 701.5 "RECLAMINED ASPHALT PAVEMENT (RAP); a definition and general statement to describe the product.
- 3) Re-numbered section 701.4 to 701.6

Section 702

- 1) Added additional material descriptions to include salvaged / recycled / reclaimed materials to Section 702.1 "GENERAL.
- 2) Added additional commentary to Table 702-1 as NOTE 1

Section 710

- 1) Added additional commentary to Section 710.2 "MATERIAL" – 710.2.3 Reclaimed Asphalt Pavement (RAP). This is a small statement that references

this materials use shall conform to Section 701.7.1. – This addresses the material constituent.

- 2) Corrected spelling error adding an “r” to the word traffic in the third paragraph of Section 710.3.2.2

Section 728

- 1) Added reclaimed, recycled concrete to Section 728.2 Materials.

SECTION 701 – REVISED 6-12-12

AGGREGATE

701.1 GENERAL:

Coarse and fine aggregates are defined in accordance with ASTM D-2487. Material property requirements for specific uses are provided in applicable MAG sections.

701.2 COARSE AGGREGATE:

Rock and gravel shall be clean, hard, sound, durable, uniform in quality, and free of any detrimental quantity of soft, friable, thin elongated, or laminated pieces, disintegrated material, organic matter, oil, alkali, or other deleterious substance. Aggregate sources shall include, but not be limited to alluvial deposits, terrace aggregates, quarry stone, or other suitable sources including recycled products that meet all material test requirements as approved by the Engineer. Aggregate classification shall be made by size as noted herein.

Apparent specific gravity shall be at least 2.50, when tested in accordance with ASTM C-127.

701.2.1 Boulders: Particles of rock that will not pass a 12-inch square opening.

701.2.2 Cobbles: Particles of rock that will pass a 12-inch square opening, but are retained on a 3-inch square opening.

701.2.3 Coarse Gravel: Particles of rock that will pass a 3-inch U.S. standard sieve, but are retained on a 3/4-inch U.S. standard sieve.

701.2.4 Fine Gravel: Particles of rock that will pass a 3/4-inch U.S. standard sieve, but are retained on a No. 4 U.S. standard sieve

701.3 FINE AGGREGATE (SAND):

Fine aggregate (sand) shall be fine granular material produced by the crushing of rock or gravel or naturally produced by disintegration of rock and shall be sufficiently free of organic material, mica, loam, clay, and other deleterious substances to be thoroughly suitable for the purpose for which it is intended. Fine aggregates particles shall pass a No. 4 U.S. standard sieve, but are retained on a No. 200 U.S. standard sieve.

701.4 RECLAIMED CONCRETE MATERIAL (RCM)

Reclaimed, recycled concrete material (RCM) is defined as a manufactured aggregate material that is derived from the crushing, processing and classification of Portland cement concrete construction materials recovered from roadways, sidewalks, buildings, bridges, and other sources.

In accordance with Section 7 of AASHTO M319, RCM shall not contain more than five percent by mass of brick or concrete block and shall be substantially free of wood, metal, plaster, and gypsum board. RCM shall be free of all materials that fall under the category of solid waste or hazardous materials as defined by the state or local jurisdiction. With the prior approval of the Engineer, these respective quantities may be adjusted if the performance of the RCM is not adversely impacted. RCM may be blended with other approved aggregate materials to obtain the applicable performance criteria.

701.5 RECLAIMED ASPHALT PAVEMENT (RAP):

Reclaimed, recycled asphalt pavement (RAP) is defined as all asphalt road waste, large chunks or milled material, that has been size-reduced, crushed and or screened appropriately, making it reusable as part of a new asphalt mixture. This material shall be of a consistent and relatively clean manner as to not adversely affect the final material usage.

SECTION 701 – REVISED 6-12-12

701.4 6 SAMPLING:

Sampling of aggregates shall be performed in accordance with ASTM D-75.

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SECTION 702 – REVISED 6-12-12

BASE MATERIALS

702.1 GENERAL:

Base materials shall be as defined in Section 701, consisting of appropriately sized coarse and fine aggregates, recycled, reclaimed concrete material (RCM) or recycled, reclaimed asphalt pavement (RAP), other inert materials, and/or aggregates that have been treated for plasticity index mitigation, as approved by the Engineer. These materials, whether virgin, recycled, reclaimed, salvaged, or a blend of both shall conform to the end result quality requirements of this section.

When base material without further qualification is specified, the Contractor shall supply Aggregate Base Course as defined in Table 702-1. When a particular classification of base material is specified, the Contractor may substitute Aggregate Base Course for Select material when approved by the Engineer.

The Contractor shall provide the Engineer, in writing, material information and the source location at least 10 business days prior to use of the material unless the material is currently accepted for use, as determined by the Engineer.

702.1.1 Aggregate Base Course shall be used primarily in roadway applications or where otherwise specified by project plans or special provisions.

702.1.2 Select Material shall be primarily used, but not limited to applicable structure and pipe backfill installations, shoulders, turnouts, driveways, and tapers or where otherwise specified by project special provisions.

702.2 PHYSICAL PROPERTIES:

702.2.1 Base material shall meet the physical properties listed in Table 702-1.

Table 702-1			
Sieve Analysis			
Test Methods AASHTO T-27, T-11			
Sieve Size	Accumulative Percentage Passing Sieve, by Weight		
	Select Material		Aggregate Base Course
	Type A	Type B	
3 in.	100	--	--
1-1/2 in.	--	100	100
1 in.	--	--	90 – 100
No. 4	30 - 75	30 - 70	38 - 65
No. 8	20 - 60	20 - 60	25 – 60
No. 30	10 - 40	10 - 40	10 – 40
No. 200	0 - 12	0 - 12	3 – 12
Plasticity Index			
Test Methods AASHTO T-89 Method A, T-90, T146 Method A. (see Note 1)			
Maximum allowable value	5	5	5
Fractured Face, One Face			
Test Method ARIZ 212, Percent by Weight of the Material Retained on a #4 Sieve. (see Note 1)			
Minimum required value	50	50	50
Resistance to Degradation and Abrasion by the Los Angeles Abrasion Machine			
Test Method AASHTO T-96, Percent Loss by Weight (see Note 1)			
Maximum allowable value at 100 revolutions	10	10	10
Maximum allowable value at 500 revolutions	40	40	40

SECTION 702 – REVISED 6-12-12

Note 1 – When reclaimed, recycled, or salvaged materials are used in or blended with virgin materials into a final product, the Plasticity Index, Fractured Face, and Los Angeles Abrasion requirements shall be on the virgin aggregate used in the blend.

702.2.2: When tested for acceptance, Base material that does not meet Table 702-1 properties for gradation or PI may be approved at the Engineer's discretion if the R-Value is at least 70 when determined by test method AASHTO T-190 (see Table 310-1).

End of Section

DRAFT

ASPHALT CONCRETE**710.1 GENERAL:**

Asphalt concrete shall be a mixture of asphalt cement and mineral aggregates. Mineral admixture shall be included in the mixture when required by the mix design or by the Engineer. Asphalt concrete shall be produced in accordance with Section [321](#).

The designation for asphalt concrete mixes shall be based on the nominal maximum aggregate size of the mix. The applicable mix designations are 3/8 inch, 1/2 inch, 3/4 inch and Base (1") mix.

Each mix shall be designed using Marshall or Gyratory compaction methods. Either Gyratory or Marshall Mixes may be used for low or high traffic conditions, as determined by the agency. Low traffic conditions are conditions where the asphalt mix will be subject to low volume and low weight vehicle usage. Examples of this condition are residential streets, most parking lots and residential minor collector streets. High traffic conditions are conditions where the asphalt mix will be subject to high volume and/or heavy weight vehicle usage as found on major collector, arterial and commercial streets. Street classifications (i.e. minor collector and major collector) shall be determined by the specifying agency.

The following table (Table [710-1](#)) displays the recommended lift thickness for various asphalt concrete mix designations found within Section [710](#). Please note that these recommended lift thicknesses are minimums based on each mix designation's "Nominal Aggregate Size" and the relative coarseness of its gradation. The compacted thickness of layers placed shall not exceed 150% of the Minimum Lift Thickness of Table [710-1](#) except as otherwise provided in the plans and specifications, or if approved in writing by the Engineer.

RECOMMENDED MINIMUM LIFT THICKNESS'S for ASPHALT CONCRETE MIXES		
Asphalt Concrete Mix Designation (inches)	Minimum Lift Thickness Marshall Mixes	Minimum Lift Thickness Gyratory Mixes
3/8"	1.0 inches	1.5 inches
1/2"	1.5 inches	2.0 inches
3/4"	2.5 inches	3.0 inches
Base	3.0 inches	n/a

710.2 MATERIAL:

710.2.1 Asphalt Binder: The asphalt binder specified in this section has been developed for use in desert climate conditions. Should it be utilized in other climates, consideration should be given to adjustments in the asphalt binder selection. The asphalt binder shall be Performance Grade Asphalt conforming to the requirements of Section [711](#) for PG 70-10, unless otherwise approved by the Engineer or specified differently in the plans or special provisions.

710.2.2 Aggregate: Coarse and Fine aggregates shall conform to the applicable requirements of this section. Coarse mineral aggregate shall consist of crushed gravel, crushed rock, or other approved inert material with similar characteristics, or a combination thereof, conforming to the requirements of these specifications.

Coarse aggregate for hot mix asphalt is material retained on or above the No. 4 sieve and Fine aggregate is material passing the No. 4 sieve. Aggregates shall be relatively free of deleterious materials, clay balls, and adhering films or other material that prevent coating with the asphalt binder. Coarse and Fine aggregates shall conform to the following requirements when tested in accordance with the applicable test methods.

TABLE 710-2			
COARSE/FINE AGGREGATE REQUIREMENTS			
Characteristics	Test Method	Low Traffic	High Traffic
Fractured Faces, % (Coarse Aggregate Only)	Arizona 212	75, 1 or more	85, 1 or more 80, 2 or more
Uncompacted Voids, % Min.	AASHTO T-304, Method A	42	45
Flat & Elongated Pieces, % 5:1 Ratio	ASTM D 4791	10.0 Max.	10.0 Max.
Sand Equivalent, %	AASHTO T-176	50 Min.	50 Min.
Plasticity Index	AASHTO T-90	Non-plastic	Non-plastic
L.A. Abrasion, %Loss	AASHTO T-96	9 max. @ 100 Rev. 40 max. @ 500 Rev.	9 max. @ 100 Rev. 40 max. @ 500 Rev.
Combined Bulk Specific Gravity	AI MS-2/SP-2	2.35 – 2.85	2.35 – 2.85
Combined Water Absorption	AI MS-2/SP-2	0 – 2.5%	0 – 2.5%

Tests on aggregates used in asphalt concrete outlined above, shall be performed on materials furnished for mix design purposes and composited to the mix design gradation.

Blend sand (naturally occurring or crushed fines) shall be clean, hard and sound material which will readily accept asphalt binder coating. The blend sand grading shall be such that, when it is mixed with the other mineral aggregates, the combined product shall meet the requirements of Table [710-2](#).

The natural sand shall not exceed 20 percent for the Marshall mixes and 15 percent for the Gyratory mixes by weight of the total aggregate for a mix.

710.2.3 Reclaimed Asphalt Pavement (RAP): Recycled or reclaimed materials used in paving mixture or mix design of hot mix asphalt shall conform to MAG Section 701.7.1

710.2.34 Mineral Admixture: Mineral admixture when used as an anti-stripping agent in asphalt concrete shall conform to the requirements of AASHTO M-17. Mineral admixture used in asphalt concrete shall be dry hydrated lime, conforming to the requirements of ASTM C1097 or Portland cement conforming to ASTM C150 Type II or ASTM C595 Type IP. The amount of hydrated lime or Portland cement used shall be determined by the mix design. The minimum Mineral admixture content within a mix will be 1.00 percent, by weight of total aggregate.

710.3 MIX DESIGN REQUIREMENTS:

710.3.1 General: The mix design for asphalt concrete shall be prepared by a laboratory that is accredited through the AASHTO Accreditation Program (AAP) in Hot Mix Asphalt Aggregates and Hot Mix Asphalt. The laboratory shall be under the direct supervision of a Civil Engineer, registered by the State of Arizona, and who is listed by ADOT as a “Qualified Asphaltic Concrete Mix Design Engineer” within ADOT’s latest list of approved laboratories. The latest list of approved laboratories is available on ADOT’s web page www.azdot.gov. The date of the design shall not be older than one year from the date of submittal, unless supportive documentation is provided and approved by the Engineer.

The mix design report shall include the following elements as a minimum.

SECTION 728 – REVISED 6-12-12

CONTROLLED LOW STRENGTH MATERIAL

728.1 GENERAL:

Controlled Low Strength Material (CLSM) is a mixture of cementitious materials, aggregates, admixtures\additives, and water that, as the cementitious materials hydrate, forms a soil replacement. CLSM is a self-compacting, flowable, cementitious material primarily used as a backfill, structural fill, or a replacement for compacted fill or unsuitable native material. Placement and usage of each type of CLSM is described in Section 604,

728.2 MATERIALS:

Cementitious materials shall conform to Section 725.2.

Coarse aggregate shall conform to ASTM C-33 grading size No. 57. The size and gradation of fine aggregates (sand) shall conform to ASTM C-33. Alternate materials meeting the applicable requirements of Section 701 or 702 such as combinations of other aggregates or Aggregate Base Course (ABC) or Reclaimed, recycled concrete material (RCM) may be used to replace the required coarse and fine aggregate as long as the approved mix design meets the requirements of Table 728-1.

Water shall conform to Section 725.4.

728.3 PROPORTIONING OF MIXTURES AND PRODUCTION TOLERANCES:

Proportioning of the mixture shall comply with Section 725.6 and Table 728-1. The CLSM shall have consistency, workability, plasticity, and flow characteristics such that the material when placed is self-compacting. A minimum of 40% coarse aggregate shall be used. A mix design shall be submitted for the Engineer's approval prior to the excavation for which the material is intended for use. Sampling shall be in accordance with ASTM D-5971. The flow consistency shall be tested in accordance with ASTM D-6103. Unit weight (when applicable) shall be obtained by ASTM D-6023. Compressive strength shall be tested in accordance with ASTM D-4832.

TABLE 728-1	
CONTROLLED LOW STRENGTH MATERIAL REQUIREMENTS	
Portland Cement Content, Sack/cu yd	Flow, inches
1/2 Sack	9±2
1 Sack	9±2
1 1/2 Sack	9±2

Note for Table 728-1:

- 1) CLSM mixes meeting the table requirements will not generally be placeable by means of a concrete pump or may not provide the needed workability for certain conditions. When pumpable mixes or increased workability are required, the addition of fly ash or a natural pozzolan in excess of the required Portland Cement Content may be used.
- 2) Ready-mixed concrete shall not be used in lieu of CLSM without prior approval from the Engineer and shall be subject to rejection.

728.4 MIXING:

CLSM mixing shall comply with Section 725.7. Mixing shall continue until the cementitious material and water are thoroughly dispersed throughout the material. Mixes shall be homogenous, readily placeable and uniformly workable.

Water/Sewer Working Group Meeting

Meeting Notes

June 19, 2012

Opening:

A meeting of the Specifications and Details Water/Sewer Working Group was called to order by chair Jim Badowich on June 19, 2012, at 1:35 p.m. in the MAG Cholla Room.

1. Participants

Jim Badowich (Avondale), Arturo Chavarria (Hanson Pipe), Bill Davis (ADS), Mike Hook (ACPA), John Kanzleamar (Contech), Adrian Leon (Contech), Paul Nebeker (Pipe Right Now), Matt Savage (Ferguson), Craig Sharp (Buckeye), Gordon Tyus (MAG), Mike Weinberg (Contech).

2. Cadmium Plated Bolts (Case 11-03)

Jim Badowich referenced a handout showing his revisions to Section 610.3. He said he still needed to find the correct ASTM for stainless steel. He said he removed different specifications for different bolt sizes, and noted that ASTM 242 was the correct spec for corrosive resistant steel. Mr. Badowich said he would update the ASTM for stainless steel, try to get feedback from Javier Setovich, and submit the revised version to the main committee for review.

3. Wet Barrel Fire Hydrant Spec and Detail Update (Case 11-14)

The latest version of the hydrant details were handed out and discussed. Paul Nebeker questioned whether note 5 should be included on 360-3 because fittings are very often under pavement, especially in retrofitting type of applications where offset fittings are often used. Members also agreed to remove note 9 (expansion joints) from 360-1 and 360-2 and clarify it on 360-3. Mr. Nebeker also questioned showing the concrete pad below grade shown on the dry barrel drawing. Mr. Sharp said he would review his notes to see which agency had it below grade. Mr. Badowich said the concrete pad on 360-2 should be dimensioned. Mr. Sharp said he would make updates to the details as discussed.

4. Manhole Details and Pre-Cast Manhole Bases

Jim Badowich said he planned to use the specifications Buckeye developed for the pre-cast manhole bases. He asked if he could get help modifying the manhole details. Craig Sharp said he had a drafter available to make changes to the details, and asked for Mr. Badowich to send him the revisions.

5. Special Bedding for Mainline Storm Drain Pipe (Case 11-21)

Mr. Badowich provided an overview of the case proposed by Phoenix which provides an option for using slurry in storm drain installation. Mr. Tyus said discussions evolved in the working group to include updated installation specifications depending on the type of the pipe. ASTM standards for HDPE and concrete pipe installations were provided. Bill Davis said table 601 in MAG does not match the ASTM standards for HDPE trench width, so they were developing a new table. Mr. Badowich said the current MAG standard does require granular backfill for HDPE pipe. Members from Contech discussed their proposed specification for steel reinforced plastic pipe based on the existing HDPE material specification. Mr. Badowich said he wanted

all flexible pipe installation standards to have the same minimum requirements rather than having new sections for all variations of materials. There was also discussion on testing procedures and the use of laser testing. Mr. Nebeker expected that it would be used more in the future, much like how video is used today.

6. Disinfecting Water Lines (Case 12-08)

Jim Badowich said he thought Phoenix planned to withdraw the case on disinfecting water lines. Mr. Nebeker said dealing with the issue now makes sense, with all the abandoned subdivisions that may begin development again. Mr. Badowich also said flushing issues can be addressed in the future.

7. Next Meeting Date

Members agreed to tentatively schedule the next meeting of the Water/Sewer working group on Tuesday, July 17, 2012 at 1:30 p.m. at the MAG office.

MAG Asphalt Working Group Meeting

Jeff Benedict (Valero) chaired the meeting. It was convened at noon on Thursday June 28th at the ARPA meeting room. Present were Brian Galimore (WSP), Syd Anderson (C.O.P.), Don Cornelison (Speedie), Jeff Hearn (Salt River Materials Group) and Gordon Tyus (MAG)

Topics discussed were as follows:

MAG 317 (milling) section was reviewed. This version has been before the whole MAG group and will be pushed to call for a vote in the July meeting for an August vote.

A discussion on recycled products as “aggregates” took place and it was decided that recycled asphalt could go into 701 as one case. The case will have modifications to other sections. It can be used as base and as aggregate for hot mix. Recycled concrete will be put into section 702 “Base materials” as it will only be used there for now.

MAG 701 (Recycled asphalt in hot mix **and** used as base) was reviewed and discussed. Work on the main wording was discussed. ADOT's documents were discussed and decided that they were too burdensome and too long (50 Pages).

Case 12-09

The asphalt subcommittee discussed the Jamie Erickson's (PHX) case (12-09) that adds “teeth” to protect wet slurry surfaces from traffic. A recommendation for this was passed out and agreed to. The wording in the “Micro surfacing” section was copied and inserted in the slurry section. After discussion the Micro language was agreed upon.

It was discussed and recommended that rather than add language to the barricade portion to look at expanding the repair of any traffic induces flaws language to motivate the contractor to do more to prevent damage by passing traffic.

“**Warm Mix**” This topic was discussed and it was agreed to push this case this for a later date, possibly next year.

The City of Phoenix new supplements were discussed. Brian Galimore will call for a meeting of Industry to discuss only the Phoenix supplements. Syd thought this was a good idea. This will happen in the next two weeks.

It was decided that the next sub-committee meeting will be August 23rd at noon at ARPA.

The meeting was adjourned at 1:25 the concrete sub-committee meeting followed this meeting.

MAG Materials Working Group

Meeting Notes

Thursday, June 28, 2012, 1:00pm at the ARPA Offices

Present:

Brian Gallimore (WSP), Jeff Benedict (Valero), Jeff Hearne (SRM), Gordon Tyus (MAG), Syd Anderson (COP), Don Cornelison (Speedys), Bob Erdman (Cutler)

Discussion:

- 1) We discussed the criteria of a native “granular soil” vs the criteria of “granular material” that needs to be better defined.
- 2) It was asked by the working group to look at the revised section 309 to see if we need to break into two sections, one for lime stabilizing and one for soil stabilizing.

Date for Next Meeting:

The next meeting is scheduled for **Thursday, August 23rd at 1:00pm** in the ARPA office in conjunction with the Asphalt Working Group and before the Concrete Working Group.

MAG Concrete Working Group

Meeting Notes

Thursday, June 28, 2012, 1:30 pm at the ARPA Offices

Present:

See attached attendance sheet.

Discussion:

Minutes from the last meeting on 5-24-12 were handed out for review and approval.

- 1) MAG Section 340 Draft Revision by Peter Kandaris – no discussion or action
- 2) Directional Sidewalk Ramp Details by Brandon Forrey from the City of Peoria – no discussion or action
- 3) A review and discussion relating to the handouts of Sections 701, 702, 710, and 728 relating to reclaimed concrete and asphalt materials - sent out by email. It was decided to keep the sections together for presentation to the Committee – incorporating any needed changes to other Sections that refer to each material. Jeff Benedict will transmit the current revision of Section 710 to Jeff Hearne to include with the other Sections and the cover sheet. These will be transmitted to Gordon Tyus for inclusion in the next Committee packet for formal Case submittal to the Committee at the next meeting on July 11th.

Date for Next Meeting:

The next meeting is scheduled for **Thursday, August 23th at 1:30 PM** in the ARPA offices. Any and all participants are welcome and encouraged to be involved.

Attendance
Initials

MAG Concrete Working Group

Thursday, June 28, 2012

GT	Gordon Tyus	MAG	Maricopa Association of Governments	602-254-6300	GTyus@azmag.gov
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	Joe Mueller	Municipality	City of Mesa	480-644-6937	joe.mueller@mesaaz.gov
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