

January 29, 2013

TO: Members of the MAG Standard Specifications and Details Committee

FROM: Tom Wilhite, City of Tempe, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday, February 6, 2013 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 Tom Wilhite at 480-350-2921 or Gordon Tyus, MAG staff at 602-254-6300.

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

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

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

MAG Standard Specifications and Details Committee
TENTATIVE AGENDA
February 6, 2013

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 January 2, 2013, Meeting Minutes</u> | 3. Review and approve minutes of the January 2, 2013 meeting. |
| 4. <u>ASTM Website Presentation</u> (2:00 p.m.) | 4. Information and discussion. |

Cases Carried Forward from 2012

- | | |
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| 5. <u>Case 12-12:</u>
New Section 789: Steel Reinforced Polyethylene Pipe (SRPE) | 5. Information and discussion.
Sponsor: Rod Ramos, Scottsdale |
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New Cases for 2013

- | | |
|---|--|
| 6. <u>Case 13-01 Miscellaneous Corrections:</u>
A. Revise title of Section 324
B. Section 505.6.3.3 (4) Typing error correction
C. Section 735.4 (D) Delete reference to AASHTO M-315
D. Correction to Detail 501-5 | 6. Information and discussion.
Sponsor: Bob Herz, Maricopa County |
| 7. <u>Case 13-02:</u>
Revision to Section 337 CRACK SEALING to obtain compatibility with Maricopa County Requirements | 7. Information and discussion.
Sponsor: Bob Herz, Maricopa County |

8. Case 13-03:
Revision to Section 321.8.6 Asphalt Concrete
Overlay to obtain uniformity with Maricopa
County requirements

8. Information and discussion.
Sponsor: Bob Herz, Maricopa County

9. New and Potential Cases for 2013:

9. Information and discussion.

General Discussion

10. Working Group Reports

10. Information and discussion.

Water/Sewer Chair: Jim Badowich, Avondale
Asphalt Chair: Jeff Benedict
Materials Chair: Brian Gallimore
Concrete Chair: Jeff Hearne
Outside ROW: Peter Kandarlis

11. General Discussion

11. Information and discussion.

12. Request for Future Agenda Items

12. Information and discussion.

Adjournment

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

January 2, 2013

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

AGENCY MEMBERS

Jim Badowich, Avondale	* Javier Setovich, Peoria
Craig Sharp, Buckeye (proxy)	Syd Anderson, Phoenix (St. Trans.)
* Warren White, Chandler	Jami Erickson, Phoenix (Water)
Tom Condit, Gilbert	Rodney Ramos, Scottsdale
Mark Ivanich, Glendale	* Jason Mahkovtz, Surprise
Troy Tobiasson, Goodyear	Tom Wilhite, Tempe, Chair
Karl Rockwell, MCDOT (proxy)	* Jim Fox, Youngtown
Bob Draper, Mesa	

ADVISORY MEMBERS

Jeff Benedict, ARPA	Jeff Hearne, ARPA
Tony Braun, NUCA	Peter Kandaris, Independent
Slade Ottney, NUCA	Paul R. Nebeker, Independent
Brian Gallimore, AGC	Jacob Rodriguez, SRP
Adrian Green, AGC	

MAG ADMINISTRATIVE STAFF

Gordon Tyus

* Members not attending or represented by proxy.

GUESTS/VISITORS

Bill Davis, ADS
Kelly Kokesh, ADS

1. Call to Order

Chairman Thomas Wilhite called the meeting to order at 1:32 p.m.

2. Call to the Audience

Audience members introduced themselves. No members of the audience requested to speak.

3. Outgoing Chair Recognition

Chairman Tom Wilhite presented previous chair Troy Tobiasson a certificate of recognition for his service as chair from 2011-2012.

4. Approval of Minutes

The members reviewed the September 5, 2012 meeting minutes. Bob Draper introduced a motion to accept the minutes as written. Troy Tobiasson seconded the motion. A voice vote of all ayes and no nays was recorded.

5. 2013 Revision to the MAG Specifications and Details Document

Gordon Tyus said the 2013 update packets have been printed and committee members should have received a copy. He also gave the prices for the update packet as \$10, new books including the 2013 update for \$25 and the binders for \$10. To order, please call MAG and ask for Judy Tadlock. The updated documents have also been posted to the MAG website, including the AutoCAD drawings updated in 2012.

http://www.azmag.gov/communications/Specs_and_Details/default.asp

Review of 2012 Carry Forward Cases

6. Case 12-12: Steel Reinforced Polyethylene Pipe

Add new Section 739 for Steel Reinforced Polyethylene (SRPE) Pipe. Sponsor Rod Ramos said he had not made any changes to the case, but did mention that the water/sewer working group has been working on it. Jim Badowich summarized how the case had initiated a larger look at the installation specifications for both flexible and rigid pipe. He said the working group is looking at Sections 601, 610 and 615 and was determining such things as trench widths, fill requirements and terminology. The goal would be to separate installation and material specifications, so new pipe materials could be added without having a new installation procedure for each. Kelly Kokesh, who is on the working group agreed.

New 2012 Cases

7. Case 13-01 A-C: Miscellaneous Corrections

Maricopa County introduced three correction cases.

- A) Revise title of Section 324 by removing the word “Street”
- B) Correct a typographic error in Section 505.6.3.3 (4)
- C) Delete obsolete reference of AASHTO M315 in Section 735.4 (D)

Jeff Hearne mentioned that the concrete working group may want to revise Section 324 more fully since it was one of the sections on their list to review.

8. Case 13-02: Revisions to Section 337 CRACK SEALING

Obtain compatibility with Maricopa County requirements. Karl Rockwell, who was filling in for Bob Herz of Maricopa County presented a new case to update Section 337 to include Maricopa County supplements. He said a list of the changes was included on the cover page. Jeff Benedict said he had about an hour to review the case and said he agreed with many of the material specifications proposed to be updated. He said this case would be added to the asphalt working group agenda for the January 24 meeting.

Jim Badowich said a more generalized specification may allow other manufacturers to offer the crack sealing products. He said Avondale was looking for other manufacturers due to the high price. Jeff Benedict said that Maricopa County has unique specifications due to the climate, such as softening requirements and a different range of temperatures that require more polymers. This could make the product more expensive. Rod Ramos questioned extending the allowable width of cracks covered by the specification to 1 ½ inches. He said in Scottsdale they use a different method with an epoxy grout fill, treating it as though it were rigid pavement. Jim Badowich said Avondale was experimenting with chip seals. Other members also described different methods used.

9. Potential Cases for 2013

Chairman Wilhite asked the members to report on potential cases for 2013.

Bill Davis of APS said that Warren White of Chandler couldn't be at the meeting, but is planning to introduce a case in February for a new high performance thermal plastic pipe that uses polypropylene. It is a stiffer pipe somewhere between HDPE and PVC that holds line and grade well and has a double gasket in the bell that allows it to be used for sanitary sewer trunk lines in addition to storm drains. He expected that the material spec would be a new section similar to Case 12-12, and that they would continue discussion at the next water/sewer working group meeting.

Tom Wilhite said he wanted to look at updating the liquidated damages (Table 108-1) since it hasn't been updated in at least fifteen years.

Mr. Wilhite then asked the chairs of the working groups to preview the cases they are working on. Jeff Benedict said the asphalt working group would be reviewing the penalty table in Section 321 as well as the new crack seal case just introduced. In addition, they would be reviewing warm mix specifications, and issues with the use of rubber and rubberized asphalt.

Jeff Hearne said the concrete working group would look at Section 324: Portland Cement Concrete Pavement (PCCP) as well as other items on their list. One thing he mentioned was work done by the City of Peoria on ADA compliant sidewalk ramps, and the need to have the details modified to match MAG standards. Peter Kandarlis said he was still working on the curb and gutter specifications.

Mr. Kandarlis said he wanted the outside right-of-way working group to get back to its original focus of updating and adding new specifications for the area between the right-of-way and the building. He said there were still some outstanding miscellaneous items, such as fencing, etc. that could be reviewed by another working group.

Brian Gallimore said the materials working group could take on these items. Tom Wilhite preferred this to starting another working group. Mr. Gallimore said he was also reviewing the grade adjustments detail.

Jim Badowich said the water/sewer working group was going to be focusing on updating the manhole details and specifications, including adding the option for precast bases. They also would be continuing to work on revising the pipe installation specifications and incorporating new pipe materials. This work would include getting the trench widths to match ASTM standards and updating terminology. Brian Gallimore noted that the City of Phoenix updated their supplement and included the term “foundation” to mean just the material under the pipe. This may require updates to MAG specs and details to be consistent. Jami Erickson said Phoenix would be looking at the more general water/sewer updates as possible cases for MAG. Troy Tobiasson said the flushing and testing requirements are an area he would like to see updated.

10. Working Group Reports

Chairman Wilhite asked for reports from the working groups. He also suggested the working groups provide him a paragraph on the topics of the working group meetings, so he could formulate an email notice that could be forwarded to interested parties in the MAG agencies.

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

Jim Badowich said the group met September 18th at 1:30 at the MAG office. (Notes included in packet.) He said he reviewed much of what the group discussed previously in the meeting. The next meeting is scheduled for January 22, 2013 at 1:30 p.m. at the MAG offices. He asked for additional participation at the working group meetings by agency members.

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

Jeff Benedict said the next meeting of the three groups is scheduled for January 24, 2013 at the ARPA office. The asphalt group would meet first at 12:00 p.m. followed by the materials and concrete working groups.

Adrian Green said one thing they wanted to discuss with the use of bonuses in contracts similar to what ADOT does to reward high performing construction. Both Jim Badowich and Troy Tobiasson said their cities' contracts were not designed to allow bonuses, but were for a set amount, and some municipalities or city councils may not allow them. Bob Draper advised against using the term bonus at all. Brian Gallimore said contracts could be set up to allow addition compensation based on performance similar to how there are set-asides for project escalations.

c. **Outside Right-of-Way Working Group**

Peter Kandarlis said he would like to schedule the next meeting for January 29, 2013 to avoid conflicts with existing working group meetings.

11. General Discussion

Tom Wilhite brought up the idea of creating a framework to allow for the continuous update and review of the specifications and details over a set period, such as five years. The idea would be to determine a certain number of specifications to be reviewed each year, verify if the spec is current, and if not, make the necessary minor updates or introduce a new major case.

Jeff Hearne said ASTM has standing committees that are assigned certain specifications to review and revise on a six-year cycle. Even if a specification is not revised, it is reviewed and reapproved. He noted that ASTM does have many standing committees for this purpose.

Tom Wilhite suggested doing something similar by dividing up MAG specification among the working groups and/or agencies. Jeff Benedict said that the members may not have the expertise for some specifications. Peter Kandarlis gave the example of landscaping requirements. He also noted that the details drawings still needed review. Troy Tobiasson liked the method used by the outside ROW group to decide if a specification should be added, deleted, moved or revised, and if revised determine if it was a major or minor revision.

Mr. Tyus said the discussion probably should also include when new editions should be published, how often, and how updates to the specification should be made available to avoid too many update packets to the printed materials. He also asked if MAG should continue to print updates in the future.

Jim Badowich brought up the issue of moving to more general requirements since new materials are constantly coming on the market. He gave the example of joint restraints. With

several different types now available, the specifications currently don't cover them all, so they have to use the submittal process for all water and sewer line construction.

Jeff Benedict provided a handout for the Asphalt Paving Alliance national lunch meeting on February 14, 2013 at the AGC office and invited all members to attend.

12. Future Agenda Items

Mr. Wilhite noted two potential future agenda items. One was a request for a presentation on wildlife crossing structures and policies. He asked the committee if they were interested in a short presentation from the group during the February meeting.

He also noted that the ASTM web portal software was undergoing changes, and a representative from ASTM was available to give a presentation on its new features. Several members commented on how useful the access was. Mr. Tyus encouraged member use to justify continued funding of the project, and said he would check to see how the ASTM site update would affect current users.

13. Adjournment:

The chair adjourned the meeting at 2:58 p.m.

2013 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 2012						
12-12	Case 12-12: New Section 789 – Steel Reinforced Polyethylene Pipe (SRPE)	Scottsdale	Rod Ramos	07/11/2012 08/09/2012		0 0 0	Yes No Abstain
	NEW CASES FOR 2013						
13-01	Case 13-01: Miscellaneous Corrections A. Revise title of Section 324 B. Section 505.6.3.3 (4) Typing error correction C. Section 735.4 (D) Delete obsolete reference to AASHTO M-315	MCDOT	Bob Herz	01/02/2012		0 0 0	Yes No Abstain
13-02	Case 13-02: Revision to Section 337 CRACK SEALING to obtain compatibility with Maricopa County requirements.	MCDOT	Bob Herz	01/02/2012		0 0 0	Yes No Abstain
13-03	Case 13-03: Revision to Section 321.8.6 Asphalt Concrete Overlay to obtain uniformity with Maricopa County requirements	MCDOT	Bob Herz	02/06/2012		0 0 0	Yes No Abstain



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: December 27, 2012
To: MAG Specifications and Details Committee
From: Robert Herz, MCDOT Representative
Subject: Revise title of Section 324

Case 13-01 A

PURPOSE: Rigid pavement is commonly referred to as portland cement concrete pavement or PCCP. Although PCCP is a commonly used acronym, MAG specifications do not clearly identify a specification for PCCP. Revising the title of section 324 will clearly identify the specification as being for portland cement concrete pavement (PCCP).

REVISION:
Change section title from *PORTLAND CEMENT CONCRETE STREET PAVEMENT* to *PORTLAND CEMENT CONCRETE PAVEMENT (PCCP)*.



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: December 27, 2012

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Miscellaneous Corrections

Case 13-01 B and C

PURPOSE: Correct minor errors.

REVISION:

B. Section 505.6.3.3 (4) Typing error correction

Change "Armor: All steel ~~for~~cast-in-place deck joint ..." to "Armor: All steel **for** cast-in-place deck joint ..."

C. Section 735.4 (D) Delete obsolete reference as noted:

(D) Rubber gaskets shall be in accordance with ASTM C443 ~~or~~ **AASHTO M 315**.



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

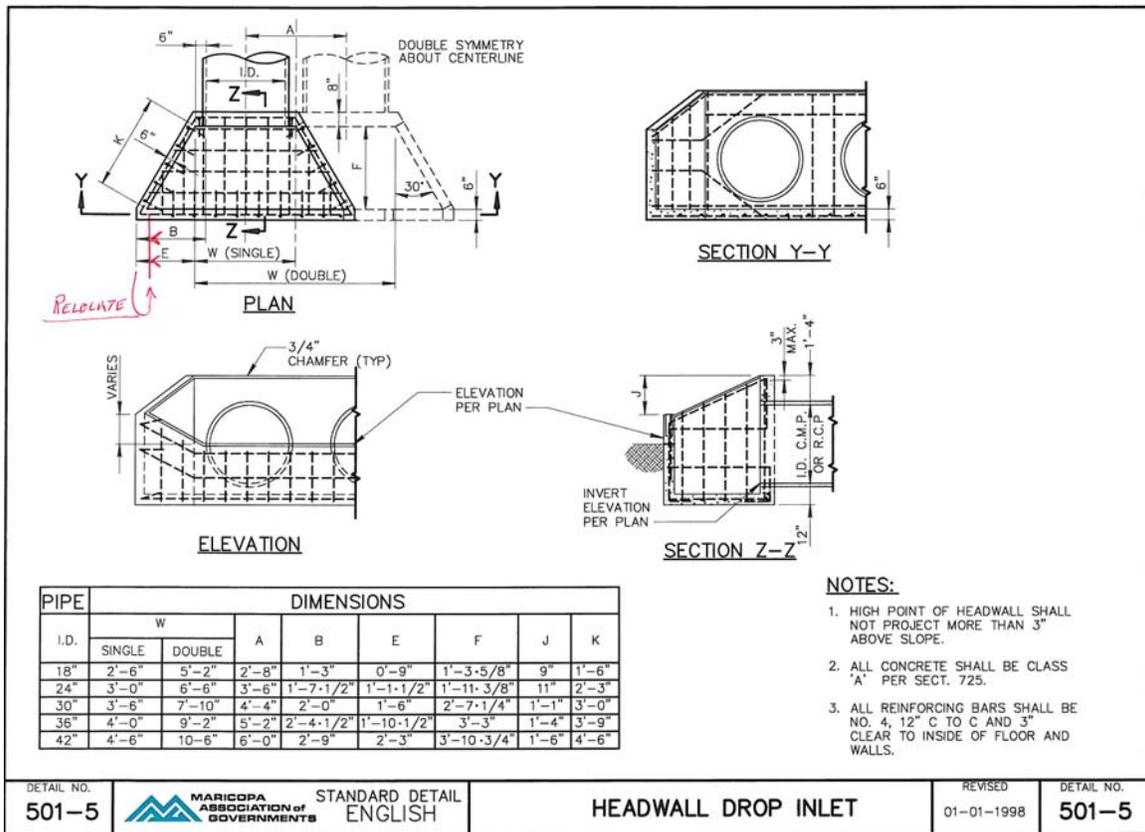
Date: January 15, 2013
To: MAG Specifications and Details Committee
From: Robert Herz, MCDOT Representative
Subject: Correction to Detail 501-5

Case 13-01 D

PURPOSE: Correct depicted distance B and E shown on PLAN view of Detail 501-5.

REVISION:

Variable distance B and E shown on the PLAN view are presently shown to the outside edge of the inlet basin wall, they should be shown to the inside edge of the inlet basin wall.
 (Distances E and F are the legs of a right triangle with hypotenuse K.)





MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: December 26, 2012

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Revision to Section 337 CRACK SEALING

Case 13-02

PURPOSE: Obtain compatibility with Maricopa County requirements.

REVISIONS:

- Removed sealant material type from the general description.
- Range of crack sizes to be sealed: current 1/4"-1"; proposed 1/8" - 1 1/2".
- Material Requirements
 - Revised Brookfield Viscosity
 - Added: Flash Point (ASTM D92) - 450°F Minimum.
- Revised sequence of subsections to correspond with the sequence of occurrence during construction. Moved the CLEANING AND PREPARING CRACKS AND JOINTS section ahead of the APPLICATION section. Moved PAVEMENT TEMPERATURES requirements into the APPLICATION section.
- Removed design related content from the section on CLEANING AND PREPARING CRACKS AND JOINTS.
- Removed metric units from the EQUIPMENT, ROUTING and VACUUMING subsections.
- APPLICATION section:
 - Restructured into new subsections: Weather, Temperature, Placement of Sealant, Unacceptable Work, and Reporting Requirements.
 - Added new requirements concerning weather.
 - Added new section to address unacceptable work.
 - Added new reporting requirement.
- MEASUREMENT and PAYMENT changed from pounds of sealant used to the roadway surface area sealed. This discourages waste and over use of sealant.

SECTION 337

CRACK SEALING

337.1 DESCRIPTION:

This work consists of furnishing and placing sealant material in Contractor prepared cracks and joints of asphalt concrete or Portland cement concrete pavements. All cracks and joints, including the space between a asphalt concrete pavement and the curb and gutter, which have an average clear opening of one-eighth inch ($\frac{1}{8}$ " or greater, shall be sealed for the entire length of the visible crack including portions of the crack smaller than one-eighth inch ($\frac{1}{8}$ "). The maximum crack width to be sealed shall be one and one-half inches ($1\frac{1}{2}$ ") wide. All cracks that have an average clear opening greater than $1\frac{1}{2}$ inches shall not be sealed unless directed to do so by the Engineer.

337.2 MATERIALS:

Sealant materials shall be a pre-mixed, single component mixture of asphalt cement, aromatic extender oils, polymers, and granulated rubber in a closely controlled manufacturing process. Materials shall conform to the following specifications when heated in accordance with ASTM D5078 and the manufacturer's maximum safe heating temperature.

TEST	REQUIREMENT
Cone Penetration (ASTM D5329)	20-40
Resilience (ASTM D5329)	30% Minimum
Softening Point (ASTM D113)	210°F (99°C) Minimum
Ductility, 77°F (25°C) (ASTM D113)	30 cm Minimum
Flexibility (ASTM D3111 *Modified)	Pass at 30°F (-1°C)
Flow 140°F (60°C) (ASTM D5329)	3 mm Maximum
Brookfield Viscosity, 380°F (193°C) (ASTM D2669)	40-90 Poise
Asphalt Compatibility (ASTM D5329)	Pass
Bitumen Content (ASTM D4)	60% Minimum
Tensile Adhesion (ASTM D5329)	400% Minimum
Maximum Heating Temperature	400°F (204°C)
Minimum Heating Temperature	380°F (193°C)
Flash Point (ASTM D92)	450°F Minimum

*Specimen bent 90° over a 1-inch mandrel within 10 seconds.

337.2.1 Certification and Quality Assurance: Prior to application, the Contractor shall submit certification of compliance to the Engineer for all materials to be used in the work.

337.3 EQUIPMENT:

The melter applicator unit shall be a self-contained double boiler device with the transmittal of heat through heat transfer oil. It must be equipped with an on board automatic heat controlling device to permit the attainment of a predetermined temperature, and then maintain that temperature as long as required. The unit shall also have a means to vigorously and continuously agitate the sealant to meet the requirements of Appendix X1.1 of ASTM D6690. The sealant shall be applied to the pavement under pressure supplied by a gear pump with a hose and wand and direct connecting applicator tip. The pump shall have sufficient pressure to apply designated sealant at a rate of at least three (3) gallons (11.4 L) per minute. Melter applicators shall be approved for use by the sealant manufacturer.

337.4 CLEANING AND PREPARING CRACKS AND JOINTS:

Immediately prior to application of sealant, all cracks and joints shall be cleaned of debris and dust. Cracks and joints shall be vacuumed during final cleaning.

337.4.1 Routing: Routing, when specified, shall create a sealant reservoir. Cutting should remove at least $\frac{1}{8}$ " from each side and produce vertical, intact surfaces with no loosely bonded aggregate. Routing of joints and cracks shall produce a reservoir having a nominal size of $\frac{3}{4}$ " wide x $\frac{3}{4}$ " deep. Variations from the nominal size are subject to acceptance or rejection at the engineer's discretion.

337.4.2 Vacuuming: Final cleaning shall thoroughly clean cracks and joints to a minimum depth of 1". The vacuum unit shall use high pressure 90 psi minimum, dry oil free compressed air to remove remaining dust. The high pressure tool shall be integral with a vacuum unit to collect the dust and residue. Both sides of the crack or joint shall be cleaned. Surfaces will be inspected to assure adequate cleanliness and dryness.

337.5 APPLICATION:

337.5.1 Weather: In no case shall sealant be placed during damp roadway conditions such as wet roadway surfaces or damp material inside the cracks. Operations stopped by the Engineer, due to weather, shall be at no additional cost to the contracting Agency. If installing at night, ensure that dew is not forming on the pavement surface.

Sealant material shall only be applied when pavement temperature exceeds 40°F (4°C). If pavement temperature is lower than 40°F (4°C), it may be warmed using a heat lance that puts no direct flame on the pavement.

337.5.2 Temperature: Sealant temperatures should be maintained at the maximum heating temperature recommended by the manufacture.

337.5.3 Placement of Sealant: The sealant shall be applied in cracks, joints, and sealant reservoirs uniformly from bottom to top and shall be filled without formation of entrapped air or voids.

Cracks and joints shall be slightly overfilled then leveled with a 3" sealing disk or v-shaped squeegee to create a neat band extending approximately 1" on each side of the crack or joint for surface waterproofing. The band shall be as thin as possible and shall not extend more than $\frac{1}{8}$ inch above the pavement surface.

If the pavement is to be overlaid with Hot Mix Asphalt within six months of sealant application, cracks shall be routed, and sealant placement shall be recessed $\frac{1}{4}$ " in the crack or joint reservoir with no over band. If routing is not used, the sealant over band thickness and width should be kept as narrow and thin as possible.

During and after placement of the sealant, the Contractor shall protect against harm to persons or animals that may be exposed to the hot material.

337.5.4 Unacceptable Work: The Contractor, at no additional cost to the contracting Agency, shall correct unacceptable work. Unacceptable work shall include, but not be limited to, unsealed cracks, material wastage on the sides of the roadway, and excess quantities of material on the roadway that adversely affects driving.

Correction of unacceptable work shall be accomplished within five working days after notification from the Engineer of the unacceptable work. The Contractor shall not progress to a new area until the unacceptable work is corrected to the satisfaction of the Engineer.

337.5.5 Reporting Requirements: The Contractor shall meet with the Engineer or the Engineer's designated representative on a daily basis and supply a signed daily report indicating the amount of crack sealant material applied for the day in total pounds and total square yards of pavement sealed. In addition, the Contractor shall supply the Engineer with the dates of completion of each road segment.

337.6 OPENING TO TRAFFIC:

Sealant material shall not be exposed to traffic until fully cured. If the sealed area must be open to traffic, blotter material shall be applied to the surface of all uncured sealant material.

All sealed cracks that have an average clear opening of $1\frac{1}{2}$ inches or greater shall have blotter material applied prior to opening to traffic.

337.6.1 Blotter: On two lane roads or where traffic may come in contact with the hot sealant before it cures, a blotter or specialized bond breaking material shall be used to prevent asphalt bleeding and/or pickup of sealant by vehicular traffic. Blotter material shall be compatible with the crack sealant and any surface treatment being used.

337.7 MEASUREMENT:

Pavement crack sealing shall be measured by the square yards of pavement surface area sealed and accepted.

337.8 PAYMENT:

Payment for pavement crack sealing at the contract unit price shall be full compensation for all labor, materials, equipment, tools, and incidentals used for surface preparation, placement of crack sealant and blotter materials, and cleanup.

- End of Section -

SECTION 337

CRACK SEALING

337.1 GENERAL DESCRIPTION:

This work shall consist of furnishing and placing sealant material in Contractor prepared cracks and joints of an application of hot applied, single component polymer modified asphalt rubber, supplied in solid form used to seal cracks or joints in asphalt concrete or Portland cement concrete pavements. All cracks or joints, including the space between asphalt concrete pavement and the curb and gutter, which have an average clear opening that of one-eighth inch (1/8") or greater, shall be sealed for the entire length of the visible crack including portions of the crack smaller than one-eighth inch (1/8"). The maximum crack width to be sealed shall be one and one-half inches (1 1/2") wide will be sealed shall be a minimum of 1/4 inch wide at time of work, and have a maximum width of 1 inch. All cracks that have an average clear opening greater than 1 1/2 inches shall not be sealed unless directed to do so by the Engineer.

~~The work involves furnishing and placing all materials on existing pavement surfaces in accordance with this specification.~~

337.2 MATERIALS:

Sealant materials shall be a premixed, single component mixture of asphalt cement, aromatic extender oils, polymers, and granulated rubber in a closely controlled manufacturing process. Materials will shall conform to the following specifications when heated in accordance with ASTM D5078 and the manufacturer's maximum safe heating temperatures.

TEST	REQUIREMENT Specification
Cone Penetration (ASTM D5329)	20-40
Resilience (ASTM D5329)	30% Minimum
Softening Point (ASTM D113)	210°F (99°C) Minimum
Ductility, 77°F (25°C) (ASTM D113)	30 cm Minimum
Flexibility (ASTM D3111 *Modified)	Pass at 30°F (-1°C)
Flow 140°F (60°C) (ASTM D5329)	3 mm Maximum
Brookfield Viscosity, 400 380°F (204 193°C) (ASTM D2669)	100 40-90 Poise Maximum
Asphalt Compatibility (ASTM D5329)	Pass
Bitumen Content (ASTM D4)	60% Minimum
Tensile Adhesion (ASTM D5329)	400% Minimum
Maximum Heating Temperature	400°F (204°C)
Minimum Heating Temperature	380°F (193°C)
Flash Point (ASTM D92)	450°F Minimum

*Specimen bent 90° over a 1-inch mandrel within 10 seconds.

337.2.1 Certification and Quality Assurance: Prior to a application, the Contractor shall submit certification of compliance to the Engineer for all materials to be used in the work.

337.3 EQUIPMENT:

The melter applicator unit shall be a self-contained double boiler device with the transmittal of heat through heat transfer oil. It must be equipped with an on board automatic heat controlling device to permit the attainment of a predetermined temperature, and then maintain that temperature as long as required. The unit shall also have a means to vigorously and continuously agitate the sealant to meet the requirements of Appendix X 1.1 of ASTM D6690. The sealant shall be applied to the pavement under pressure supplied by a gear pump with a hose and wand and direct connecting applicator tip. The pump shall have sufficient pressure to apply designated sealant at a rate of at least three (3) gallons (11.4 L) per minute. Melter applicators shall be a approved for use by the sealant manufacturer.

337.54 CLEANING AND PREPARING CRACKS OR JOINTS:

~~Immediately prior to application of polymer-modified asphalt rubber sealant, all cracks or joints shall be cleaned out of any debris and dust. As directed by the Engineer, final cleaning of the cracks or joints shall be vacuumed. Cracks and joints shall be vacuumed during final cleaning. Routing cracks and joints will extend crack sealant life and performance. Most cracks in Maricopa County have less than 1/8" movement over the course of a year. On cracks that have spacing which creates more than 1/8" movement it is recommended that cracks be routed.~~

Comment [rth1]: Deleted since it addresses design issues not contractor requirements.

337.54.1 Routing:

~~Routing, when specified, is incidental work and is included in the project cost. Routing the cracks should be used to shall create a sealant reservoir. Cutting should remove at least 1/4" (3 mm) from each side and produce vertical, intact surfaces with no loosely bonded aggregate. Routing of joints and cracks should shall produce a reservoir having a nominal size of be routed to a 3/4" (19mm) W wide x 3/4" (19mm) D deep. Variations from the nominal size are subject to acceptance or rejection at the engineer's discretion. configuration for a typical application.~~

337.54.2 Vacuuming:

~~Final cleaning shall thoroughly clean cracks and joints to a minimum depth of 1". The vacuum unit shall use high pressure -90 psi minimum (620 kPa) minimum, dry, oil free compressed air to remove any remaining dust. The high pressure tool shall be directly attached to integral with a vacuum unit to collect the dust and residue. Both sides of the crack or joint shall be cleaned. Surfaces will be inspected to assure adequate cleanliness and dryness.~~

337.45 APPLICATION:

337.5.1 Weather: In no case shall sealant be placed during damp roadway conditions such as wet roadway surfaces or damp material inside the cracks. Operations stopped by the Engineer, due to weather, shall be at no additional cost to the contracting Agency. If installing at night, ensure that dew is not forming on the pavement surface.

~~Polymer-modified asphalt rubber Sealant material shall only be applied when pavement temperature exceeds 40°F (4°C). Lower temperatures may result in reduced adhesion due to the presence of moisture or ice. If pavement temperature is lower than 40°F (4°C), it may be warmed using a heat lance that puts no direct flame on the pavement.~~

337.5.2 Temperature: ~~If installing at lower pavement temperatures than 40°F (4°C), extreme care should be used to insure that cracks or joints are dry and free from ice and other contaminants. Product Sealant temperatures should be maintained at the maximum heating temperature recommended by the manufacture. If installing at night, ensure that dew is not forming on the pavement surface. Applied product should be checked by qualified personnel to ensure that adhesion is adequate.~~

337.5.3 Placement of Sealant: The sealant shall be applied in ~~the cracks, or joints, and sealant~~ reservoirs uniformly from bottom to top and shall be filled without formation of entrapped air or voids.

~~The Cracks and or joints shall be slightly overfilled then leveled with a 3" sealing disk or v-shaped squeegee to create a neat band and extending ~~to approximately 1"~~ on each side of the crack or joint for surface strength and waterproofing. The band ~~and shall be as thin as possible and shall not be extend~~ more than 1/8 - 1/8 inch ~~in thickness~~ above the pavement surface.~~

If the pavement ~~being sealed will~~ is to be overlaid with Hot Mix Asphalt within six months of sealant application, cracks shall be routed, and sealant placement shall be recessed 1/4" (6 mm) in the crack or joint reservoir with no over band. If routing is not used, the sealant over band thickness and width should be kept as narrow and thin as possible.

337.5 CLEANING AND PREPARING CRACKS OR JOINTS:

~~Prior to application of polymer modified asphalt rubber, all cracks or joints shall be cleaned out of any debris and dust. As directed by the Engineer, final cleaning of the cracks or joints shall be vacuumed. Routing cracks and joints will extend crack sealant life and performance. Most cracks in Maricopa County have less than 1/8" movement over the course of a year. On cracks that have spacing which creates more than 1/8" movement it is recommended that cracks be routed.~~

~~337.5.1 Routing:~~

~~Routing, when specified, is incidental work and is included the project cost. Routing the cracks should be used to create a sealant reservoir. Cutting should remove at least 1/8" (3 mm) from each side and produce vertical, intact surfaces with no loosely bonded aggregate. Joints and cracks should be routed to a 3/4" (19mm) W x 3/4" (19mm) D configuration for a typical application.~~

~~337.5.2 Vacuuming:~~

~~During and after placement of the sealant, the Contractor shall protect against harm to persons or animals that may be exposed to the hot material.~~

~~**337.5.4 Unacceptable Work:** The Contractor, at no additional cost to the contracting Agency, shall correct unacceptable work. Unacceptable work shall include, but not be limited to, unsealed cracks, material wastage on the sides of the roadway, and excess quantities of material on the roadway that adversely affects driving.~~

~~Correction of unacceptable work shall be accomplished within five working days after notification from the Engineer of the unacceptable work. The Contractor shall not progress to a new area until the unacceptable work is corrected to the satisfaction of the Engineer.~~

~~**337.5.5 Reporting Requirements:** The Contractor shall meet with the Engineer or the Engineer's designated representative on a daily basis and supply a signed daily report indicating the amount of crack sealant material applied for the day in total pounds and total square yards of pavement sealed. In addition, the Contractor shall supply the Engineer with the dates of completion of each road segment.~~

~~Final cleaning shall thoroughly clean cracks and joints to a minimum of 1". The vacuum unit shall use high pressure 90 psi (620 kPa) minimum, dry, oil free compressed air to remove any remaining dust, directly attached to a vacuum unit to collect the dust and residue. Both sides of the crack or joint shall be cleaned. Surfaces will be inspected to assure adequate cleanliness and dryness.~~

~~337.6 OPENING TO TRAFFIC:~~

~~Sealant material shall not be exposed to traffic until fully cured. If the sealed area must be open to traffic, a blotter material ~~can~~ shall be applied to the surface of ~~polymer modified asphalt rubber~~ all uncured sealant material.~~

~~All sealed cracks that have an average clear opening of 1½ inches or greater shall have blotter material applied prior to opening to traffic.~~

~~337.6.1 Blotter:~~

~~On two lane roads or where traffic may ~~be likely to~~ come in contact with the hot sealant before it cures, a blotter or specialized bond breaking material ~~may be required~~ shall be used to prevent asphalt bleeding and/or pickup of sealant by vehicular traffic. Blotter material ~~should~~ shall be compatible with the crack sealant and any surface treatment being used.~~

~~337.7 PAVEMENT TEMPERATURES:~~

~~Polymer modified asphalt rubber shall be applied when pavement temperature exceeds 40° F (4°C). Lower temperatures may result in reduced adhesion due to the presence of moisture or ice. If pavement temperature is lower than 40°F (4°C), it may be warmed using a heat lance that puts no direct flame on the pavement. If installing at~~

~~lower pavement temperatures than 40°F (4°C), extreme care should be used to insure that cracks or joints are dry and free from ice and other contaminants. Product temperatures should be maintained at the maximum heating temperature recommended by the manufacturer. If installing at night, ensure that dew is not forming on the pavement surface. Applied product should be checked by qualified personnel to ensure that adhesion is adequate.~~

337.8.7 MEASUREMENT:

~~Pavement crack sealing shall be measured by the square yards of pavement surface area sealed and accepted. The cleaning and sealing of cracks and joints shall be measured by pounds of sealant placed.~~

337.9.8 PAYMENT:

~~Payment for pavement crack sealing at the contract unit price shall be full compensation for all labor, materials, equipment, tools, and incidentals used for surface preparation, placement of crack sealant and blotter materials, and cleanup. Payment will be full compensation for furnishing and placing all materials specified and used, with no allowance for waste, and shall include labor, equipment, tools, and incidentals to complete the work as prescribed and as directed by the Engineer.~~

~~No payment will be made for materials rejected due to improper placement, improper proportions of materials, or material found to be defective or out of specifications.~~

Comment [rth2]: How is waste to be defined and measured.

- End of Section -



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: January 23, 2013
To: MAG Specifications and Details Committee
From: Robert Herz, MCDOT Representative
Subject: Revision to Section 321.8.6 Asphalt Concrete Overlay **Case 13-03**

PURPOSE: Obtain uniformity with Maricopa County requirements.

REVISIONS:

- Removed mix design restrictions from the specification. Asphalt overlay mix design requirements should be identified by project contract documents not within a general construction specification.
- Pavement repair was made a separate pay item. Since pavement removal and patching is a separate operation and since pavement repair requirements can vary greatly between different overlay projects, the repair of pavement defects should be a separate pay item, it should be a project cost not an overlay cost.
- Revised the pavement surface preparation items to have surface cleaning as a separately identified requirement immediately preceding the tack coat requirements.
- Added the requirement for shoulder adjustment when overlaying uncurbed roadways.

Redlined Strikeout Version:

321.8.6 Asphalt Concrete Overlay: Asphalt concrete overlay consists of the placing and compacting plant mix asphalt concrete over existing ~~asphalt concrete paving pavement~~. The ~~mix design and~~ thickness of the overlay shall be as shown on the plans or as specified in the special provisions. ~~Preliminary preparation of existing surfaces will be required except when accomplished by the Contracting Agency, and it is so stipulated in the special provisions. With the exception of those which have been preheated and remixed only, existing surfaces shall receive a tack coat.~~

~~Asphalt concrete mix aggregate gradation and percentage of asphalt binder shall be in accordance with Section 710 using a 1/2-inch Marshall Low Traffic asphalt concrete mix designation for overlay more than one and one-half inch in thickness and a 3/8-inch Marshall Low Traffic asphalt concrete mix designation for overlay one and one-half inch or less in thickness, unless otherwise shown or specified in the special provisions.~~

Except when ~~they have been~~ the existing asphalt surface is to be preheated and remixed, pavement surfaces shall be prepared as follows:

(a) ~~Before placing asphalt concrete overlay, Areas designated for pavement repair by the contract documents (which may include severely raveled areas, severely or cracked areas, that are depressed more than 3/4 inch from the adjoining pavement shall be cut out and patched at least 48 hours prior to the resurfacing operation. over-asphalted areas, and other defects) or rough high spots shall be either milled or cut out and patched completed and approved before placing asphalt concrete overlay. Pavement repair is a separate pay item. Large shrinkage cracks shall be filled with asphalt sealing compound acceptable to the Engineer. The entire surface shall be cleaned with a power broom.~~ Raveled areas that do not require removing shall be cleaned by hand brooming. The above are incidental, and the cost thereof shall be included in the bid items.

(b) Before placing asphalt concrete overlay, milling shall be done as shown on the plans or specified in the special provisions and shall be in accordance with Section 317.

(c) After pavement repairs and milling have been completed the entire surface shall be cleaned with a power broom.

(ed) After surfaces have been prepared to the satisfaction of the Engineer, they shall receive a tack coat per Section 321.4. Traffic will not be permitted to travel over surfaces which have received a tack coat. When the overlay is to extend onto ~~the a~~ concrete gutter, the gutter shall be thoroughly cleaned of loose dust and cement particles and shall be tack coated.

Asphalt concrete overlay shall be placed as specified in Section 321.8.1 and compacted as specified in Section 321.8.4. The surface smoothness shall meet the tolerances specified in Section 321.8.5.

Manholes ~~and tops of valve boxes, clean-outs and other existing structures shall be built up and the frames adjusted to set flush with the finished surface of the new paving, and tops of valve boxes, clean-outs and other existing structures shall be adjusted to finish grade. In the event the base course and original paving~~ During adjustment if pavement or base materials have been removed or disturbed in order to build up the manhole, they shall be replaced with approved materials which shall be thoroughly compacted installed in a manner acceptable to the Engineer. The asphalt concrete around the manhole frame shall be completed and made flush with the adjacent overlay.

On roads without curb and gutter, the existing unpaved shoulder elevation shall be adjusted by the Contractor to match the elevation at the edge of the new overlay and slope away from the new pavement surface at a rate that the existing quantity of shoulder material will allow. Shoulder material shall be compacted to a minimum of 95% of maximum density, determined in accordance with section 301.3. Shoulder adjustment to match the new pavement surface elevation shall not be measured. The cost of shoulder adjustment shall be included in the price paid for the asphalt concrete overlay or other related pay items. When the Engineer determines an insufficient amount of material is available for shoulder adjustment, the Engineer may require the Contractor to provide additional material. Acceptable material for shoulders includes the existing shoulder material, millings, untreated base materials, or a granular material approved by the Engineer. Engineer requested imported material for shoulder adjustment is not included in the price paid for the asphalt concrete overlay.

Proposed changes in final form:

321.8.6 Asphalt Concrete Overlay: Asphalt concrete overlay consists of the placing and compacting plant mix asphalt concrete over existing pavement. The mix design and thickness of the overlay shall be as shown on the plans or as specified in the special provisions.

Except when the existing asphalt surface is to be preheated and remixed, pavement surfaces shall be prepared as follows:

- (a) Areas designated for pavement repair by the contract documents (which may include severely raveled areas, severely cracked areas, over-asphalted areas, and other defects) shall be completed and approved before placing asphalt concrete overlay. Pavement repair is a separate pay item.
- (b) Before placing asphalt concrete overlay, milling shall be done as shown on the plans or specified in the special provisions and shall be in accordance with Section 317.
- (c) After pavement repairs and milling have been completed the entire surface shall be cleaned with a power broom.
- (d) After surfaces have been prepared to the satisfaction of the Engineer, they shall receive a tack coat per Section 321.4. Traffic will not be permitted to travel over surfaces which have received a tack coat. When the overlay is to extend onto a concrete gutter, the gutter shall be thoroughly cleaned of loose dust and cement particles and shall be tack coated.

Asphalt concrete overlay shall be placed as specified in Section 321.8.1 and compacted as specified in Section 321.8.4. The surface smoothness shall meet the tolerances specified in Section 321.8.5.

Manholes and tops of valve boxes, clean-outs and other existing structures shall be adjusted to set flush with the finished surface of the new paving. During adjustment if pavement or base materials are removed or disturbed, they shall be replaced with approved materials installed in a manner acceptable to the Engineer.

On roads without curb and gutter, the existing unpaved shoulder elevation shall be adjusted by the Contractor to match the elevation at the edge of the new overlay and slope away from the new pavement surface at a rate that the existing quantity of shoulder material will allow. Shoulder material shall be compacted to a minimum of 95% of maximum density, determined in accordance with section 301.3. Shoulder adjustment to match the new pavement surface elevation shall not be measured. The cost of shoulder adjustment shall be included in the price paid for the asphalt concrete overlay or other related pay items. When the Engineer determines an insufficient amount of material is available for shoulder adjustment, the Engineer may require the Contractor to provide additional material. Acceptable material for shoulders includes the existing shoulder material, millings, untreated base materials, or a granular material approved by the Engineer. Engineer requested imported material for shoulder adjustment is not included in the price paid for the asphalt concrete overlay.

Water/Sewer Working Group Meeting

Meeting Notes
January 22, 2013

Opening:

A meeting of the Specifications and Details Water/Sewer Working Group was called to order by chair Jim Badowich on January 22, 2013, at 1:32 p.m. in the MAG Cholla Room.

1. Introductions/Attendance

Jim Badowich (Avondale), Arturo Chavarria (Hanson), Rita Chihanik (Deeter), Bill Davis (ADS), Jami Erickson (Phoenix), Brian Gallimore (AGC), Peter Kandarlis (DGA), Paul Nebeker (PipeRight), Craig Sharp (Buckeye), Gordon Tyus (MAG), Warren White (Chandler).

2. Meeting Participation

Jim Badowich said wants to recruit more attendees to the working group including commitment of agencies and contractors. He did mention that Troy Tobbiasson of Goodyear was going to be working on bringing flushing specifications forward. Mr. Kandarlis said he could help with industry/consultant participation. Ms. Erickson asked about outreach to ACED. Brian Gallimore said he has tried to get them involved previously without success.

3. Working Group Goals for the Year

Mr. Badowich outlined some of his goals for the year including preparing cases for the items the group has been working on. Mr. Kandarlis handed out an updated list of sections and details based on the Outside ROW working group review. Mr. Badowich wants to prioritize the list. Bill Davis said he thought sections 601 and 603 should be high on the list in developing installation instructions for rigid and flexible pipe.

4. Manhole Revisions/Update

Jim Badowich indicated this as a goal for the year. Craig Sharp handed out copies of the precast manhole base details and specifications Buckeye developed. Members reviewed the information and discussed where and how it could be incorporated into the MAG specs and details. Adding additional 420-3 and 420-4 details as well as a separate material specification for the bases were suggested. Mr. Sharp also volunteered CAD services to update the other details. The group noted that the design standards used by Buckeye would need to be changed to material specifications in MAG format. Mr. Sharp said he could work on this as well. Several other related topics included: adding information on protective lining and insecticide coatings, removing bricks and steps from the details and eliminating detail 428. Mr. Tyus said he could make copies of the existing details for review and markup at the next meeting.

5. Pipe Materials and Installation Specifications

Another major topic of discussion was on the introduction of new pipe materials (including steel-reinforced polyethylene (SRPE) and Polypropylene pipe. Bill Davis had been working with Warren White of Chandler on developing specifications for the polypropylene pipe and plan to introduce a case similar to the one for SRPE (Case 12-12.) This would also require changes to installation specifications including 601, 603, 610, 615 and 618. Mr. Tyus said rather than continue to add to the list of pipe types in all of these specifications, the group should

continue to work on the plan to update specifications for rigid and flexible pipe types and specify the installation according to the type. This included updating trench widths and major revisions to Sections 601 and 603. Mr. Davis volunteered to work on 603. Mr. Badowich asked Arturo Chavarria if he would work on Section 601 to make it more consistent with ASTM standards. The group agreed that steel pipe should be considered rigid for this purpose.

There was discussion about the terminology for the trench section and bedding. Phoenix changed their supplement to match MAG's terms. Jami Erickson did note that Phoenix had concerns about their supplement being based on the 2012 MAG book now that the 2013 update is out. Brian Gallimore suggested she talk to Bob Herz at Maricopa County to see how they schedule supplements to come out at the same time as MAG's update. She said she could bring this information along with the definition to the next meeting for more discussion. Mr. Kandarlis suggested removing the bedding details from 202-2 and making a separate detail for it. Mr. Tyus mentioned the previous discussion of having the terminology match ASTM standards as shown in D2321.

Finally, Mr. Badowich asked the group of other potential cases. Jami Erickson said Phoenix has some supplements that they may bring to the committee. Mr. Tyus noted that at the previous meeting, Matt Savage provided information about changes to the pipe polywrap table to match current ASTM standards and the sizes being manufactured. The group also discussed moving the aluminum manhole covers out of the book and into the Outside Right-of-Way guide.

6. Next Meeting Date

The next meeting of the Water/Sewer working group is tentatively scheduled for Tuesday, February 19th at 1:30 p.m. at the MAG office.

The meeting was adjourned at 2:58 p.m.

Arizona Rock Products Association
916 W. Adams Phoenix, Arizona 85007
602-271-0346

Agenda
MAG Asphalt Working Group Meeting
Thursday, January 24, 2013 @ 12:00 p.m.
Chairman - Jeff Benedict, Valero

- I. Call to order and introductions
- II. Review of cases and objectives
- III. Case 13-02 crack seal
- IV. Case 13-03 modification to 321.8.6 Asphalt concrete overlay
- V. New case section 321 penalty table revision
- VI. Warm mix specification
- VII. Other agenda items
- VIII. New/Old business
- IX. Next meeting: Thursday, February 21, 2013 @ 12:00
- X. Adjournment

MAG Concrete Working Group

Thursday, January 24, 2013, 1:30 pm at the ARPA Offices

Meeting Notes

Present:

See attached attendance sheet.

Discussion:

- 1) Reviewed list of Sections needing potential revisions – spreadsheet from Peter Kandaris. Several Sections remain to be reviewed – 729 on Expansion Joint Filler, 505 on Concrete Structures, Detail 550 on Spillway Inlet and Outlet, and the Sections dealing with Masonry/Grout materials and construction. The Group was encouraged to find other potential members who could provide expertise/guidance in these areas.
- 2) MAG Section 340 Draft Revision – Peter Kandaris. We reviewed the last revision and discussed some additional clarification wording to several items. Peter will revise and resubmit to the Working Group one more time for final review before bringing to the MAG Committee for Case introduction.
- 3) Potential new case – Revision of Section 324 on Portland Cement Concrete Street Paving – Jeff Hearne. We briefly reviewed the current Section 324 as compared to ADOT Section 401 on PCCP. Several items were discussed that definitely need to be revised pertaining to strength and testing requirements, field performance criteria and appropriate measurement determinations, and acceptance and payment criteria. The Working Group was asked to further review the two documents and bring ideas for potential revision back to the Group – either by email submission or at the next meeting.
- 4) Peoria/Chandler Potential New Potential Case- Directional Sidewalk Ramp - Brandon Forrey, Peoria. No new information was presented and Jeff Hearne will contact Brandon to see where we are with this work. Bob Herz commented he may have a detail to bring forth for review.

Date for Next Meeting:

The next meeting is scheduled for **February 21, 2013 @ 1:30 pm** in the ARPA offices.
(Following the Asphalt and Materials Working Group meetings)

Any and all participants are welcome and encouraged to be involved.

Attendance
Initials

MAG Concrete Working Group

Thursday, January 24, 2013

GS	Gordon Tyus	MAG	Maricopa Association of Governments	602-254-6300	GTyus@azmag.gov
RH	Bob Herz	McDOT	Maricopa County	602-506-4760	rherz@mail.maricopa.gov
JS	John Shi	McDOT	Maricopa County		johnshi@mail.maricopa.gov
	Jacob Rodriguez	Utility	Salt River Project	602-236-8613	jacob.rodriguez@srpnet.com
SA	Syd Anderson	Municipality	City of Phoenix	602-495-2047	syd.anderson@phoenix.gov
	Don Hansen	Municipality	City of Chandler	480-215-9264	don.hansen@chandleraz.gov
RD	Bob Draper	Municipality	City of Mesa	480-644-3822	bob.draper@mesaaz.gov
RG	Rob Godwin	Municipality	City of Goodyear	623-693-2457	rob.godwin@goodyearaz.gov
	Troy Tobiasson	Municipality	City of Goodyear	623-882-7979	troy.tobiasson@goodyearaz.gov
	Scott Zipprich	Municipality	Town of Buckeye	623-547-4661	scott@scoutten.com
	Brandon Forrey	Municipality	City of Peoria	623-773-7201	brandon.forrey@peoriaaz.gov
	Margie Torres	Municipality	City of Peoria	602-918-7641	margarita.torres@peoriaaz.goc
BG	Brian Gallimore	Contractor	WSP Inc	623-434-5050	bgallimore@wspinc.net
	Kwigs Bowen	NUCA	Fishel Contracting	480-775-3943	hlbowen@teamfishel.com
JH	Jeff Hearne	Producer	Salt River Materials Group	480-850-5757	jhearne@srmaterials.com
	Mike Kohout	Producer	Cemex	602-220-5631	mkohout@cemexusa.com
	Robert Barkley	Producer	Hanson Aggregates of Arizona	602-685-3436	robert.barkley@hansen.biz
	Tom Romero	Producer	CPC Southwest Materials	520-744-3222	tromero@calportland.com
AG	Adrian Green	Producer	Vulcan Materials	602-528-8692	greenaj@vmcmail.com
	Tom Villa	Producer	Drake Materials	480-607-3999	tvilla@drakematerials.com
	Nick Baxter	Producer	Drake Cement	602-708-0259	nbaxter@drakecement.com
	Angelo Trujillo	Producer	BASF Admixtures	480-824-3733	angelotrujillo@cox.net
	Greg Dorsch	Producer	BASF Admixtures	480-363-5646	greg.dorsch@basf.com
	Derek Imperial	Producer	BASF Admixtures	480-993-6948	derek.imperial@basf.com
	Art Tyson	Producer	W. R. Grace Admixtures	623-910-4195	Art.E.Tyson@grace.com
	Charles Moses	Producer	Jensen Precast	775-287-7275	cmoses@jensenprecast.com
	David Allen	Producer	Boral Materials	602-861-5100	david.allen@boral.com
JB	Jeff Benedict	Producer	Valero Energy Corp	520-777-2456	Jeff.Benedict@valero.com
	John Heffernan	Producer	Superlite Block	602-463-5993	John.Heffernan@oldcastle.com
	Jimmy Veltri	Producer	Superlite Block	602-881-6771	Jimmy.Veltri@oldcastle.com
	Nathan Angel	Producer	Superlite Block	602-818-3937	Nathan.Angel@oldcastle.com
	Charles Taylor	Producer	Oldcastle	770-715-8901	chuck.taylor@oldcastle.com
	Matthew Marcus	Testing Laboratory	Ninyo & Moore	602-243-1600	mmarcus@ninyoandmoore.com
	Craig Rees	Testing Laboratory	Ninyo & Moore	602-243-1600	crees@ninyoandmoore.com
	William Smith	Testing Laboratory	Terracon	480-897-8200	whsmith@terracon.com
	Mohammad Rahman	Testing Laboratory	ATC Associates	480-355-4634	mohammad.rahman@atcassociates.com
	Scott Thompson	Testing Laboratory	ATC Associates	602-290-0840	scott.thompson@atcassociates.com
	Dan Dragonetti	Testing Laboratory	Speedie and Associates	602-997-6391	ddragonetti@speedie.net
DC	Don Cornelison	Testing Laboratory	Speedie and Associates	602-997-6391	dcornelison@speedie.net
	Raphael Tixier	Testing Laboratory	Western Technologies Inc.	602-437-3737	r.tixier@wt-us.com
	Michael Whitman	Testing Laboratory	Western Technologies Inc.	602-437-3737	mike.w@wt-us.com
	Ed Weaver	Consultant	ASU - CIM	480-297-7501	Edwin.Weaver@asu.edu
PK	Peter Kandaris	Consultant	DGA	602-236-8613	pkandaris@dgacon.com
	Jim Willson	Consultant	Consultant	602 290-9585	cementaz@cox.net
	Elaine Trujillo	ARPA	Arizona Rock Products Association	602-271-0346	elaine@azrockproducts.org
	Steve Trussel	ARPA	Arizona Rock Products Association	602-271-0346	steve@azrockproducts.org

Specifications & Details Outside Right-of-Way Working Group

January 29, 2012 Meeting (1:30 pm to 3:00 pm)

At

Agave Room

Maricopa Association of Governments

302 North 1st Avenue

Phoenix, AZ

Meeting Agenda

INTRODUCTION

- Welcome participants – Introductions

WORKING GROUP PURPOSE:

Create a new MAG standard for Outside Right-of-Way (OROW) public facilities.

Update existing and add new standards and details that may be used for public improvements that occur on public property but not in the right-of-way (parks, golf courses, arena/stadium parking lots, public building facilities outside the building footprint, etc.). This could include light rail facilities outside road right-of-way.

DISCUSSION ITEMS

- Review MAG Standard and Detail to be Changed for OROW document
- Assignments –Review and make suggested changes for the next meeting
- Discuss new standards and details required for OROW document
 - Examine existing city supplements for OROW issues (CMP underground drainage storage tanks, etc.)
 - Examine light rail standards
- Next meeting date (February 26)

**MAG OUTSIDE RIGHT-OF-WAY WORKING GROUP
SUMMARY REVIEW OF EXISTING MAG SECTIONS**

1/25/2011

Section	Title	Put in Outside ROW Std	Modify	Minor Change	Action
Sections to be Excluded from Outside ROW Standards					
206	Structure Excavation and Backfill	No			
210	Borrow Excavation	No			
320	Road-mixed Surfacing	No			
327	Hot in-Place Recycling	No			
620	Cast-in-place Concrete Pipe	No			
737	Asbestos-Cement Pipe and Fittings for Storm Drain and Sanitary Sewer	No			
762	Asbestos-Cement Water Pipe and Fittings	No			
Sections to be made part of Outside ROW Standards with no changes					
102	Bidding Requirements and Conditions	Yes	No		
103	Award and Execution of Contract	Yes	No		
106	Control of Materials	Yes	No		
109	Measurements and Payments	Yes	No		
110	Notification of Changed Conditions and Dispute Resolution	Yes	No		
215	Earthwork for Open Channels	Yes	No		
220	Riprap Construction	Yes	No		
230	Dust Palliative Application	Yes	No		
306	Mechanically Stabilized Subgrade- Geogrid Reinforcement	Yes	No		
309	Lime Slurry Stabilization	Yes	No		
310	Placement and Construction of Aggregate Base Course	Yes	No		
311	Placement and Construction of Cement Treated Subgrade	Yes	No		
312	Cement Treated Base	Yes	No		
317	Asphalt Milling	Yes	No		
325	Placement and Construction of Asphalt-Rubber Asphalt Concrete	Yes	No		
329	Tack Coat	Yes	No		
330	Asphalt Chip Seal	Yes	No		
331	Microsurfacing Specifications	Yes	No		
332	Asphalt Emulsion Slurry Seal Coat	Yes	No		
333	Fog Seal Coats	Yes	No		
334	Preservative Seal for Asphalt Concrete	Yes	No		
335	Placement and Construction of Hot Asphalt-Rubber Seal	Yes	No		
342	Decorative Pavement Concrete Paving Stone or Brick	Yes	No		
343	Exposed Aggregate Paving	Yes	No		
345	Adjusting Frames, Covers, Valve Boxes and Water Meter Boxes	Yes	No		
355	Utility Potholes-Keyhole Method	Yes	No		
405	Monuments	Yes	No		
410	Precast Safety Curbs	Yes	No		
415	Flexible Metal Guardrail	Yes	No		
424	Parkway Grading	Yes	No		
425	Topsoils	Yes	No		
602	Encasement of Water or Sewer Pipe by Jacking or Tunneling Operation	Yes	No		
604	Placement of Controlled Low Strength Material	Yes	No		
605	Subdrainage	Yes	No		
625	Manhole Construction and Drop Sewer Connections	Yes	No		
701	Rock, Gravel, and Sand	Yes	No		
702	Base Materials	Yes	No		
703	Riprap	Yes	No		
705	Portland Cement Treated Base	Yes	No		
708	Asphalt Pavement Core Bonding Materials	Yes	No		
711	Paving Asphalt	Yes	No		
712	Liquid Asphalt	Yes	No		
713	Emulsified Asphalts	Yes	No		
714	Microsurfacing Materials	Yes	No		
715	Slurry Seal Materials	Yes	No		
716	Cover Material	Yes	No		
717	Asphalt-rubber	Yes	No		
718	Preservative Seal for Asphalt Concrete	Yes	No		
726	Concrete Curing Materials	Yes	No		
727	Steel Reinforcement	Yes	No		
728	Controlled Low Strength Material	Yes	No		
735	Reinforced Concrete Pipe	Yes	No		
738	High Density Polyethylene Pipe & Fittings for Storm Drain & Sanitary Sewer	Yes	No		
741	Lining for Reinforced Concrete Sanitary Sewer Pipe	Yes	No		
743	Vitrified Clay Pipe	Yes	No		
745	PVC Sewer Pipe and Fittings	Yes	No		
750	Iron Water Pipe and Fittings	Yes	No		
753	Galvanized Pipe and Fittings	Yes	No		
755	Polyethylene Pipe for Water Distribution	Yes	No		
756	Dry Barrel/Fire Hydrants	Yes	No		
758	Concrete Pressure Pipe - Steel Cylinder Type	Yes	No		
759	Steel Pipe	Yes	No		
771	Galvanizing	Yes	No		
776	Masonry Mortar and Grout	Yes	No		
792	Dust Palliative	Yes	No		
796	Geosynthetics	Yes	No		
Sections to be made part of Outside ROW Standards - Changes complete					
101	Abbreviations and Definitions	Yes	Yes	Yes	Done
104	Scope of Work	Yes	Yes	Yes	Done
105	Control of Work	Yes	Yes	Yes	Done
107	Legal Regulations and Responsibility to Public	Yes	Yes	Yes	Done
108	Commencement, Prosecution and Progress	Yes	Yes	Yes	Done
Sections to be reviewed & modified (as part of the Outside ROW Standards)					
201	Clearing and Grubbing	Yes	Yes	Yes	Draft in Review
205	Roadway Excavation	Yes	Yes	No	Draft in Review
211	Fill Construction	Yes	Yes	No	Modify for on-site methods
301	Subgrade Preparation	Yes	Yes	Yes	Modify for on-site methods
321	Asphalt Concrete Pavement	Yes	Yes	Yes	Include parking lot placement
324	Portland Cement Concrete Street Pavement	Yes	Yes	Yes	Scope to be determined
336	Pavement Matching and Surfacing Replacement	Yes	Yes	Yes	Scope to be determined
341	Terrazzo Sidewalks	Yes	Yes	Yes	Deleted from MAG - Modify for on-site methods
350	Removal of Existing Improvements	Yes	Yes	No	Modify for on-site methods
505	Concrete Structures	Yes	Maybe	Yes	Scope to be determined

**MAG OUTSIDE RIGHT-OF-WAY WORKING GROUP
SUMMARY REVIEW OF EXISTING MAG SECTIONS**

1/25/2011

Section	Title	Put in Outside ROW Std	Modify	Minor Change	Action
506	Precast Prestressed Concrete Members	Yes	Yes	Yes	Scope to be determined
510	Concrete Block Masonry	Yes	Yes	Yes	Scope to be determined
511	Brick Masonry	Yes	Yes	Yes	Scope to be determined
520	Steel and Aluminum Handrails	Yes	Yes	Yes	Modify for on-site methods
601	Trench Excavation, Backfilling and Compaction	Yes	Maybe	Yes	Modify for on-site methods
603	Installation for High Density Polyethylene Pipe	Yes	Maybe	Maybe	Modify for on-site methods
610	Water Line Construction	Yes	Yes	Yes	Modify for on-site methods
611	Disinfecting Water Mains	Yes	Yes	Yes	Modify for on-site methods
615	Sewer Line Construction	Yes	Yes	No	Design/adapt for smaller pipe diameters
616	Reclaimed Water Line Construction	Yes	Yes	No	Scope to be determined
618	Storm Drain Construction	Yes	Yes	Yes	Review for other materials used outside ROW
631	Water Taps and Meter Service Connections	Not sure			Review for applicability outside ROW
710	Asphalt Concrete	Yes	Yes	Yes	Include parking lot mixes
725	Portland Cement Concrete	Yes	Maybe	Yes	Modify for on-site methods
744	ABS Truss Pipe and Fittings	Not sure			Review for applicability outside ROW
770	Structural and Rivet Steel, Rivets, Bolts, Pins, and Anchor Bolts	Yes	Yes	Yes	Modify for on-site methods
Sections to be reviewed & modified by Concrete Working Group (as part of the MAG Standards)					
340	Concrete Curb, Gutter, Sidewalk, Sidewalk Ramps, Driveway and Alley Entrance	Yes	Yes	Yes	MAG case work
525	Pneumatically Placed Mortar	Yes	Yes	Yes	MAG case work
729	Expansion Joint Filler	Yes	Yes	Yes	MAG case work
775	Brick and Concrete Masonry Units (Blocks)	Yes	Yes	Maybe	MAG case work
Sections to be reviewed & modified by Materials Working Group (as part of the MAG Standards)					
360	Telecommunications Installation	No			MAG case work
401	Traffic Control	Yes	Yes	No	MAG case work
420	Chain Link Fences	Yes	Maybe	Maybe	MAG case work
430	Landscaping and Planting	Yes	Yes	No	MAG case work
440	Sprinkler Irrigation System Installation	Yes	Yes	No	MAG case work
515	Steel Structures	Yes	Yes	Yes	MAG case work
530	Painting	Yes	Yes	No	MAG case work
621	Corrugated Metal Pipe and Arches	Yes	Yes	Yes	MAG case work
757	Sprinkler Irrigation System	Yes	Yes	No	MAG case work
760	Coating Corrugated Metal Pipe and Arches	Yes	Yes	Maybe	MAG case work
761	Structural Plate Pipe, Arches, and Pipe Arches	Yes	Yes	Maybe	MAG case work
772	Chain Link Fence	Yes	Yes	Yes	MAG case work
778	Lumber	Yes	Yes	Yes	MAG case work
779	Wood Preservatives	Yes	Yes	No	MAG case work
790	Paint	Yes	Yes	No	MAG case work
795	Landscape Material	Yes	Yes	No	MAG case work
Sections to be reviewed & modified by Sewer & Water Working Group (as part of the MAG Standards)					
630	Tapping Sleeves, Valves and Valve Boxes on Water Lines	Yes	Yes	Yes	MAG case work
736	Non-Reinforced Concrete Pipe	No			MAG case work
754	Copper Pipe, Tubing and Fittings	Yes	Yes	Yes	MAG case work

**MAG OUTSIDE RIGHT-OF-WAY WORKING GROUP
SUMMARY REVIEW OF EXISTING MAG DETAILS**

1/25/2011

Detail	Title	Put in Outside ROW Std	Modify	Minor Change	Action
Details to be Excluded from Outside ROW Standards					
204	Equipment Crossing	No			
205	Paved Turnout	No			
223	Median Nose Transition	No			
251	Return Type Driveways	No			
260	Alley Entrance	No			
342	Concrete Pressure Pipe Tapping Sleeve	No			
362	Location for New Hydrants	No			
428	Manhole Steps	No			
429	Industrial Waste Control Vault with Manhole	No			
120-2	Survey Marker - Unincorporated Areas of County	No			
231-234	Sidewalk Ramps	No			
250-1&2	Driveway Entrances	No			
262-263	Wing Type Alley Entrance	No			
Details to be made part of Outside ROW Standards with no changes					
101	General Information	Yes	No		
112	Dimensioning for Road Improvement Plans	Yes	No		
130	Barricades	Yes	No		
140	Bollard	Yes	No		
141	Hazard Marker	Yes	No		
150	Precast Safety Curb	Yes	No		
201	Pavement Section and Termination	Yes	No		
203	Scuppers	Yes	No		
211	Standard Trench Plating Detail	Yes	No		
212	Utility Pothole Repair	Yes	No		
221	Curb and Gutter Transitions	Yes	No		
222	Single Curb	Yes	No		
224	Joint for Drainage Inlets and Manhole Covers	Yes	No		
240	Valley Gutter	Yes	No		
252	Bus Bays	Yes	No		
360	Fire Hydrant Installation	Yes	No		
381	Anchor Blocks for Vertical Bends	Yes	No		
421	Offset Manhole for 8" to 30" Pipe	Yes	No		
422	Brick Sewer Manhole and Cover Frame Adjustments	Yes	No		
423	Water Tight 30" Manhole Frame and Cover	Yes	No		
424	24" and 30" Manhole Frame and Cover	Yes	No		
503	Irrigation Standpipe	Yes	No		
506	Irrigation Valve Installation	Yes	No		
524	Storm Drain Lateral Pipe Connections	Yes	No		
535	Catch Basin Type F	Yes	No		
541	Catch Basin Subgrade Drain	Yes	No		
545	End Section Reinforced Concrete Pipe	Yes	No		
552	Concrete Cutoff Walls	Yes	No		
555	Erosion Protection - Gabions	Yes	No		
110-1&2	Plan Symbols	Yes	No		
120-1	Survey Marker	Yes	No		
200-1&2	Backfill, Pavement and Surface Replacement	Yes	No		
206-1to3	Concrete Scuppers	Yes	No		
220-1&2	Curb and Gutter	Yes	No		
303-1&2	Joint Restraint for Ductile Iron and PE Wrapped Ductile Iron Water Pipes	Yes	No		
310-314	Cast Iron Water Meter Box Cover	Yes	No		
345-2	4", 6" Water Meter with Onsite Fire Hydrants	Yes	No		
403-1&2	Pipe Support Across Trenches	Yes	No		
403-3	Alternative to Pipe Support	Yes	No		
404-1to3	Water and Sanitary Sewer Separation/Protection	Yes	No		
440-1to4	Sewer Building Connection (Type A, B, C & Stamp Detail)	Yes	No		
501-1to3	Headwalls	Yes	No		
501-4	Headwall Irrigation 18" to 60" Pipe	Yes	No		
501-5	Headwall Drop Inlet	Yes	No		
520-522	Storm Drain Manhole Base and Shaft	Yes	No		
523-1&2	Pressure Manhole	Yes	No		
531-532	Curb Opening Catch Basin (Types A, B & C)	Yes	No		
533-1to4	Catch Basin Type D (Basin, Apron, Grate & Frame)	Yes	No		
534-1to4	Catch Basin Type E (Basin and Details)	Yes	No		
536-1&2	Curb Opening Catch Basin (Details, Sections Cover)	Yes	No		
537-538	Catch Basin (Type G & H)	Yes	No		
539-540-2	Grates for Catch Basins	Yes	No		
Details to be reviewed & modified by Outside ROW Working Group					
145	Safety Rail	Yes	Yes	Yes	Modify to accommodate OSHA onsite needs
210	Residential Speed Hump	Yes	Yes	Yes	(change title for OROW)
230	Sidewalks	Yes	Yes	No	Allow varying widths, mod jointing
320	Concrete Water Meter Boxes	Yes	Yes	No	Allow fiberglass & plastic boxes
405	Broken Sewer Line Replacement	Yes	Yes	Yes	Include more than just clay pipe
510	Corrugated Metal Pipe Installation	Yes	Yes	No	Incorporate underground storage tanks
Details to be reviewed & modified by Concrete Working Group (as part of the MAG Standards)					
225	Concrete Pavers	Yes	Yes	Yes	MAG case work
550	Spillway Inlet and Outlet	Yes	Yes	Yes	MAG case work
Details to be reviewed & modified by Sewer & Water Working Group (as part of the MAG Standards)					
301	Blocking for Water Gate and Butterfly Valves	Yes	Yes	Yes	MAG case work

**MAG OUTSIDE RIGHT-OF-WAY WORKING GROUP
SUMMARY REVIEW OF EXISTING MAG DETAILS**

1/25/2011

Detail	Title	Put in Outside ROW Std	Modify	Minor Change	Action
321	Standard Water Meter Vault	Yes	Yes	Yes	MAG case work
340	Installing Tapping Sleeves and Valves	No			MAG case work
346	Fire Line Detector Check Valve	Yes	Yes	Yes	MAG case work
370	Vertical Realignment of Water Mains	Yes	Yes	No	MAG case work
380	Thrust Blocks for Water Lines	Yes	Yes	No	MAG case work
389	Curb Stop with Valve Box and Cover	Yes	Yes	No	MAG case work
390	Curb Stop with Flushing Pipes	Yes	Yes	No	MAG case work
392	Debris Cap Installation	No			MAG case work
425	24" Aluminum Manhole Frame and Cover	No			MAG case work
426	Drop Sewer Connection	Yes	Yes	Yes	MAG case work
427	Stub Out and Plugs	Yes	Yes	No	MAG case work
441	Sewer Cleanout	Yes	Yes	Yes	MAG case work
504	Concrete Block Junction Box	Yes	Yes	Yes	MAG case work
302-1&2	Joint Restraint with Tie Rods	Yes	Yes	Yes	MAG case work
345-1	3", 4" and 6" Water Meter	Yes	Yes	Yes	MAG case work
420-1&2	Precast Concrete Sewer Manhole	Yes	Yes	Yes	MAG case work
502-1&2	Trash Rack	Yes	Yes	Yes	MAG case work
505	Concrete Pipe Collars	Yes	Yes	No	MAG case work
507	Encased Concrete Pipe (for Shallow Installation)	Yes	Maybe		MAG case work
	Details to be reviewed & modified by Asphalt Working Group (as part of the MAG Standards)				
202	Alley Details	Yes	Yes	Yes	MAG case work
	Details to be reviewed & modified by Materials Working Group (as part of the MAG Standards)				
131	Street Sign Base	Yes	Yes	Yes	MAG case work
135	Steel Guard Rail	Yes	Yes	No	MAG case work
160	Chain Link Fence and Gate	Yes	Yes	Yes	MAG case work
270	Frame & Cover (and Grade Adjustments)	Yes	Yes	Yes	MAG case work
391-1&2	Valve Box Installation and Grade Adjustment	Yes	Yes	No	MAG case work

**PART 100
GENERAL CONDITIONS**

**SECTION 101
ABBREVIATIONS AND DEFINITIONS**

101.2 DEFINITION AND TERMS: is modified to add:

The use of the term “Engineer” in these specifications shall also include the Contracting Agency “Project Manager” or “Architect” as applicable for the type of work.

**SECTION 102
BIDDING REQUIREMENTS AND CONDITIONS**

NO CHANGES

**SECTION 103
AWARD AND EXECUTION OF CONTRACT**

NO CHANGES

**SECTION 104
SCOPE OF WORK**

104.1.1 GENERAL: the second paragraph is changed to read:

In the event a conflict exists between Contract Documents the order of precedence listed in descending order shall be as follows:

- Change Orders
- Addenda
- Special Provisions
- Project Plans
- Contracting Agency’s supplements to the MAG *Outside of Right-of-Way* Standard Specifications and Details
- MAG *Outside of Right-of-Way* Standard Specifications
- MAG *Outside of Right-of-Way* Standard Details

104.1.2 MAINTENANCE OF TRAFFIC: the third paragraph is changed to read:

*In site areas accessible to vehicular or pedestrian traffic, grading operations, excavation and fill construction shall be conducted and maintained in such a manner as to provide a reasonably satisfactory and safe surface for vehicular and pedestrian traffic. When rough grading is completed, any *access road or drive* shall be brought to and maintained in a reasonably smooth condition, satisfactory and safe for vehicular traffic at the*

posted speed limit. Pedestrian walkways shall be provided and maintained in a like manner. The Contractor shall accomplish any additional grading operations and/or repairs, including barricade replacement or repairs during working and nonworking periods which, in the opinion of the Engineer, are required.

SECTION 105 CONTROL OF WORK

105.8 CONSTRUCTION OF STAKES, LINES AND GRADES: the first paragraph is changed to read:

The Engineer will set construction stakes establishing lines and grades for *site* work, curbs, gutters, sidewalks, structures and centerlines for utilities and necessary appurtenances as he may deem necessary, he will furnish the Contractor with all necessary information relating to the lines and grades. These stakes and marks shall constitute the field control by and in accordance with which the Contractor shall establish other necessary controls and perform the work.

105.12 MAINTENANCE DURING CONSTRUCTION: the first paragraph is changed to read:

The Contractor shall maintain the work during construction and until the project is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces to the end so that *all site work is* kept in satisfactory conditions at all times.

105.13 FAILURE TO MAINTAIN ROADWAY OR STRUCTURE: the title is changed to read:

105.13 FAILURE TO MAINTAIN *SITE WORK*

SECTION 106 CONTROL OF MATERIALS

NO CHANGES

SECTION 107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

107.4 ARCHAEOLOGICAL REPORTS: is changed to read:

Attention is directed to Sections 41-844 and 41-846 Arizona Revised Statutes. In view of the above, it shall be a provision of every contract that when archaeological features are encountered or unearthed in *excavations within the site project boundaries*, the Contractor shall report promptly to the Director of the Arizona State Museum and the Contracting Agency. The Contractor will be allowed extra time as appropriate in accordance with the provisions of Section 108.

SECTION 108 COMMENCEMENT, PROSECUTION AND PROGRESS

108.2 SUBLETTING OF CONTRACT: Subsection (E) is struck.

**SECTION 109
MEASUREMENTS AND PAYMENTS**

NO CHANGES

**SECTION 110
NOTIFICATION OF CHANGED CONDITIONS AND DISPUTE
RESOLUTION**

NO CHANGES

**PART 200
EARTHWORK**

**SECTION 201
CLEARING AND GRUBBING**

Outside of ROW Working Group will prepare modifications for on-site applications.

**SECTION 205
SITE EXCAVATION**

Outside of ROW Working Group will prepare modifications for on-site applications. The section will be re-titled "SITE EXCAVATION" and will include significant elements from Section 206.

**SECTION 206
STRUCTURAL EXCAVATION AND BACKFILL**

STRIKE THIS SECTION IN ITS ENTIRETY

**SECTION 210
BORROW EXCAVATION**

STRIKE THIS SECTION IN ITS ENTIRETY

**SECTION 211
FILL AND BACKFILL CONSTRUCTION**

Outside of ROW Working Group will prepare modifications for on-site applications. The section will incorporate remaining parts of Section 206 and Section 210.

**SECTION 215
EARTHWORK FOR OPEN CHANNELS**

NO CHANGES

**SECTION 220
RIPRAP CONSTRUCTION**

NO CHANGES



SECTION 230
DUST PALLIATIVE APPLICATION

NO CHANGES

PART 300
~~STREETS AND RELATED WORK~~ SITE DEVELOPMENT

SECTION 301
SUBGRADE PREPARATION

OROW Working Group will prepare modifications for on-site applications.

SECTION 306
MECHANICALLY STABILIZED SUBGRADE –
GEOGRID REINFORCEMENT

NO CHANGES

SECTION 309
LIME SLURRY STABILIZATION OR MODIFICATION OF SUBGRADE

NO CHANGES

SECTION 310
PLACEMENT AND CONSTRUCTION OF AGGREGATE BASE COURSE

NO CHANGES

SECTION 311
SOIL CEMENT BASE COURSE

NO CHANGES

SECTION 312
CEMENT TREATED BASE

NO CHANGES

SECTION 315
BITUMINOUS PRIME COAT

NO CHANGES

**SECTION 317
ASPHALT MILLING**

NO CHANGES

**SECTION 320
ROAD-MIXED SURFACING**

STRIKE THIS SECTION IN ITS ENTIRETY

**SECTION 321
PLACEMENT AND CONSTRUCTION OF ASPHALT CONCRETE
PAVEMENT**

OROW Group will prepare modifications for on-site applications.

**SECTION 324
PORTLAND CEMENT CONCRETE PAVEMENT**

Concrete Working Group will prepare modifications for MAG document.

**SECTION 325
PLACEMENT AND CONSTRUCTION OF ASPHALT-RUBBER ASPHALT
CONCRETE**

NO CHANGES

**SECTION 327
HOT IN-PLACE RECYCLING**

STRIKE THIS SECTION IN ITS ENTIRETY

**SECTION 329
TACK COAT**

NO CHANGES

**SECTION 330
ASPHALT CHIP SEAL
NO CHANGES**

**SECTION 331
MICROSURFACING SPECIFICATIONS**

NO CHANGES

**SECTION 332
PLACEMENT AND CONSTRUCTION OF ASPHALT EMULSION SLURRY
SEAL COAT**

NO CHANGES

**SECTION 333
FOG SEAL COATS**

NO CHANGES

**SECTION 334
PRESERVATIVE SEAL FOR ASPHALT CONCRETE**

OROW Group will re-write this section for on-site applications.

**SECTION 335
PLACEMENT AND CONSTRUCTION OF HOT ASPHALT-RUBBER SEAL**

NO CHANGES

**SECTION 336
PAVEMENT MATCHING AND SURFACING REPLACEMENT**

Outside of ROW Working Group will prepare modifications for on-site applications.

**SECTION 337
CRACK SEALING**

NO CHANGES

**SECTION 340
CONCRETE CURB, GUTTER, SIDEWALK, SIDEWALK RAMPS,
DRIVEWAY AND ALLEY ENTRANCE**

Concrete Working Group will prepare modifications for MAG. OROW Group will evaluate for on-site modifications needed – incorporate old MAG 341 for Terrazzo sidewalks

**SECTION 342
DECORATIVE PAVEMENT CONCRETE PAVING STONE OR BRICK**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 343
EXPOSED AGGREGATE PAVING**

NO CHANGES

**SECTION 345
ADJUSTING FRAMES, COVERS, VALVE BOXES AND WATER METER
BOXES**

NO CHANGES

**SECTION 350
REMOVAL OF EXISTING IMPROVEMENTS**

NO CHANGES

**SECTION 355
UTILITY POLTHOLES – KEYHOLE METHOD**

NO CHANGES

**SECTION 360
TELECOMMUNICATIONS INSTALLATION**

STRIKE THIS SECTION IN ITS ENTIRETY

**PART 400
SURVEY, SITE WORK & TRAFFIC CONTROL**

**SECTION 401
TRAFFIC CONTROL**

OROW Working Group will prepare modifications to simplify traffic control requirements for on-site conditions.

**SECTION 405
MONUMENTS**

NO CHANGES

**SECTION 410
PRECAST SAFETY CURBS**

NO CHANGES

**SECTION 415
FLEXIBLE METAL GUARDRAIL**

NO CHANGES

**SECTION 420
CHAIN LINK FENCES**

NO CHANGES

**SECTION 424
PARKWAY GRADING**

NO CHANGES

**SECTION 425
TOPSOILS**

NO CHANGES

**SECTION 430
LANDSCAPING AND PLANTING**

OROW Working Group will prepare modifications to update the standard and include new innovations such as hydroseeding.

**SECTION 440
SPRINKLER IRRIGATION SYSTEM INSTALLATION**

OROW Working Group will prepare modifications for on-site applications.

PART 500
ON-SITE STRUCTURES
(OUTSIDE BUILDING FOOTPRINT)

SECTION 505
CONCRETE STRUCTURES

Concrete Working Group will prepare modifications for MAG.

SECTION 506
PRECAST PRESTRESSED CONCRETE MEMBERS

Concrete Working Group will prepare modifications for MAG.

SECTION 510
CONCRETE BLOCK MASONRY

Concrete Working Group will prepare modifications for MAG.

SECTION 511
BRICK MASONRY

Concrete Working Group will prepare modifications for MAG.

SECTION 515
STEEL STRUCTURES

NO CHANGES

SECTION 520
STEEL AND ALUMINUM HANDRAILS

NO CHANGES

SECTION 525
PNEUMATICALLY PLACED MORTAR

NO CHANGES



SECTION 530
PAINTING
NO CHANGES

**PART 600
WATER AND SEWER**

**SECTION 601
TRENCH EXCAVATION, BACKFILLING AND COMPACTION**

Sewer & Water Group will prepare modifications for MAG.

**SECTION 602
ENCASEMENT OF WATER OR SEWER PIPE BY
JACKING OR TUNNELING OPERATION**

NO CHANGES

**SECTION 603
INSTALLATION FOR HIGH DENSITY POLYETHYLENE PIPE**

Sewer & Water Group will prepare modifications for MAG.

**SECTION 604
PLACEMENT OF CONTROLLED LOW-STRENGTH MATERIAL**

NO CHANGES

**SECTION 605
SUBDRAINAGE**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 610
WATER LINE CONSTRUCTION**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 611
DISINFECTING WATER MAINS**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 615
SEWER LINE CONSTRUCTION**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 616
RECLAIMED WATER LINE CONSTRUCTION**

Peoria prepared a draft to be evaluated for on-site applications.

**SECTION 618
STORM DRAIN CONSTRUCTION**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 620
CAST-IN-PLACE CONCRETE PIPE
STRIKE THIS SECTION IN ITS ENTIRETY**

**SECTION 621
CORRUGATED METAL PIPE AND ARCHES**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 625
MANHOLE CONSTRUCTION AND DROP SEWER CONNECTIONS**

NO CHANGES

**SECTION 630
TAPPING SLEEVES, VALVES AND VALVE BOXES ON WATER LINES**

NO CHANGES

**SECTION 631
WATER TAPS AND METER SERVICE CONNECTIONS**

Delete this section in its entirety and re-write in the future for on-site applications.

**PART 700
MATERIALS**

**SECTION 701
AGGREGATES**

NO CHANGES

**SECTION 702
BASE MATERIALS**

NO CHANGES

**SECTION 703
RIPRAP**

NO CHANGES

**SECTION 705
PORTLAND CEMENT TREATED BASE**

NO CHANGES

**SECTION 708
ASPHALT PAVEMENT CORE BONDING MATERIALS**

NO CHANGES

**SECTION 710
ASPHALT CONCRETE**

OROW Group will prepare modifications for on-site applications.

**SECTION 711
PAVING ASPHALT**

NO CHANGES

**SECTION 712
LIQUID ASPHALT**

NO CHANGES

**SECTION 713
EMULSIFIED ASPHALT**

NO CHANGES

**SECTION 714
MICROSURFACING MATERIALS**

NO CHANGES

**SECTION 715
SLURRY SEAL MATERIALS**

NO CHANGES

**SECTION 716
COVER MATERIAL**

NO CHANGES

**SECTION 717
ASPHALT RUBBER ASPHALT CONCRETE**

NO CHANGES

**SECTION 718
PRESERVATIVE SEAL FOR ASPHALT CONCRETE**

OROW Group will re-write this section for on-site applications.

**SECTION 725
PORTLAND CEMENT CONCRETE**

NO CHANGES

**SECTION 726
CONCRETE CURING MATERIALS**

NO CHANGES

**SECTION 727
STEEL REINFORCEMENT**

NO CHANGES

**SECTION 728
CONTROLLED LOW-STRENGTH MATERIAL**

NO CHANGES

**SECTION 729
EXPANSION JOINT FILLER**

NO CHANGES

**SECTION 735
REINFORCED CONCRETE PIPE**

NO CHANGES

**SECTION 736
NON-REINFORCED CONCRETE PIPE**

STRIKE THIS SECTION IN ITS ENTIRETY

**SECTION 737
ASBESTOS-CEMENT PIPE AND FITTINGS FOR
STORM DRAIN AND SANITARY SEWER**

STRIKE THIS SECTION IN ITS ENTIRETY

**SECTION 738
HIGH DENSITY POLYETHYLENE PIPE & FITTINGS FOR
STORM DRAIN & SANITARY SEWER**

NO CHANGES

**SECTION 741
LINING FOR REINFORCED CONCRETE SANITARY SEWER PIPE**

NO CHANGES

**SECTION 743
VITRIFIED CLAY PIPE**

NO CHANGES

**SECTION 744
ABS TRUSS PIPE AND FITTINGS**

STRIKE THIS SECTION IN ITS ENTIRETY

**SECTION 745
PVC SEWER PIPE AND FITTINGS**

NO CHANGES

**SECTION 750
IRON WATER PIPE AND FITTINGS**

NO CHANGES

**SECTION 752
ASBESTOS-CEMENT WATER PIPE AND FITTINGS**

STRIKE THIS SECTION IN ITS ENTIRETY

**SECTION 753
GALVANIZED PIPE AND FITTINGS**

NO CHANGES

**SECTION 754
COPPER PIPE, TUBING AND FITTINGS**

NO CHANGES

**SECTION 755
POLYETHYLENE PIPE FOR WATER DISTRIBUTION**

NO CHANGES

**SECTION 756
DRY BARREL FIRE HYDRANTS**

NO CHANGES

**SECTION 757
LANDSCAPE IRRIGATION**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 758
CONCRETE PRESSURE PIPE - STEEL CYLINDER TYPE**

NO CHANGES

**SECTION 759
STEEL PIPE**

NO CHANGES

**SECTION 760
COATING CORRUGATED METAL PIPE AND ARCHES**

NO CHANGES

**SECTION 761
STRUCTURAL PLATE PIPE, ARCHES, AND PIPE ARCHES**

NO CHANGES

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

NO CHANGES

**SECTION 771
GALVANIZING**

NO CHANGES

**SECTION 772
CHAIN LINK FENCE**

NO CHANGES

**SECTION 775
BRICK AND CONCRETE MASONRY UNITS (BLOCKS)**

NO CHANGES

**SECTION 776
MASONRY MORTAR AND GROUT**

NO CHANGES

**SECTION 778
LUMBER**

NO CHANGES

**SECTION 779
WOOD PRESERVATIVES**

NO CHANGES

**SECTION 787
GRAY IRON CASTINGS**

Delete this section in its entirety. Place essential information from 787.3 in existing details referencing gray iron castings.

**SECTION 790
PAINT**

NO CHANGES

**SECTION 792
DUST PALLIATIVES**

NO CHANGES

**SECTION 795
LANDSCAPE MATERIAL**

Delete this section in its entirety and re-write in the future for on-site applications.

**SECTION 796
GEOSYNTHETICS**

NO CHANGES

LIST OF MEMBERS
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MAG Standard Specifications and Details Committee

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January 2013

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