

August 28, 2010

Members of the MAG Specifications and Details Committee

Jesse Gonzales, City of Peoria, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF AGENDA

Wednesday, October 6, 2010 at 1:30 p.m.
MAG Office, Second Floor, Cholla Room
302 North First 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 Jesse Gonzales at 623-773-7548 or Gordon Tyus, MAG staff at 602-254-6300.

Please park in the garage under the building, bring your ticket, parking will be validated. For those using transit, Valley Metro/RPTA will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.

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. 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.

AGENDA

<u>ITEM</u>	<u>COMMITTEE ACTION REQUESTED</u>
1. <u>Call to Order</u>	1. No action required.
2. <u>Approval of September 1, 2010 Meeting Minutes</u>	2. Corrections and approval of September 1, 2010 minutes.
3. <u>2010 Cases</u>	3. Review of 2010 cases. Voting.
4. <u>Nomination of 2011 Committee Officers</u>	4. Committee recommendations for Chair & Vice Chair
5. <u>General Discussion</u>	5. Open general discussion.
6. <u>Request for Agenda Items</u>	6. Request desired new agenda items
7. <u>Adjournment</u>	7. No action required.

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

September 1, 2010

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

AGENCY MEMBERS

Jim Badowich, Avondale
Scott Zipprich, Buckeye
Warren White, Chandler
Dennis Teller, El Mirage
Mark Weiner, Gilbert (proxy)
Tom Kaczmarowski, Glendale
Troy Tobiasson, Goodyear, Vice Chairman
Shimin Li, Maricopa County (Envir. Div.)
Bob Herz, MCDOT

Mike Samer, Mesa
Jesse Gonzales, Peoria, Chairman
Syd Anderson, Phoenix (St. Trans.)
Jami Erickson, Phoenix (Water)
Mark Palichuk, Queen Creek
Rodney Ramos, Scottsdale
Jason Mahkovtz, Surprise
Tom Wilhite, Tempe

ADVISORY MEMBERS

John Ashley, ACA
Jeff Benedict, AGC
Tony Braun, NUCA
Bill Davis, NUCA (proxy)
Brian Gallimore, AGC

Jeff Hearne, ARPA
Yvonne Martinez, SRP (proxy)
* Paul R. Nebeker, Independent
* Mike Smith, ARPA

MAG ADMINISTRATIVE STAFF

Gordon Tyus

* Members not attending or represented by proxy.

GUESTS/VISITORS

Phil Cisneros, Southwest Gas
Arturo Chavarria, Hanson Pipe and Precast
Walt Donavan, Quanta Services
Kenny Pollock, Southwest Gas
Ann Seiden, Southwest Gas
Brian Schram, Rinker Materials

1. Call to Order

Chairman Jesse Gonzales called the meeting to order at 1:34 p.m.

2. Approval of Minutes

The members reviewed the August 4, 2010 meeting minutes. Bob Herz introduced a motion to accept the minutes as written. Jesse Gonzales seconded the motion. A voice vote of all ayes and no nays was recorded.

3. 2009 Cases (old cases)

a. Case 09-14 – Revise Ramps for ADA Compliance: *Revise Details 231, 232, 233 and 234 to obtain compliance with ADA requirements – replace with new Details 235-1 through 235-5.* Mr. Herz said minor corrections to details incorporated the changes suggested at the previous meeting. Details 235-1 and 235-4, which were provided at their place, made a minor drafting correction that adjusted the broom finish ripple pattern to be perpendicular to the slope of the ramps. Seeing no further discussion, Mr. Herz moved and Mr. Gonzales seconded to approve Case 09-14 with the revised details provided. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 1 not present.

b. Case 09-15 – Revisions to Section 610.4 for Water Line Handling: *Modify Section 610.4 to clarify water line pipe protection measures at the job site prior to placement (during storage or staging) to help prevent contamination.* Tom Wilhite expressed his preference to vote on the case as currently presented. Shimin Li commented that the Water/Pipe working group had some discussion about securing the polywrap with tape. Tony Braun said he tested this and found the tape did not damage the polywrap. Mr. Wilhite moved, and Mr. Herz seconded to accept Case 09-15. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 1 not present.

4. 2010 Cases (new cases)

c. Case 10-01 – Miscellaneous Bloopers: *Correct typographic and drafting errors.* Mr. Herz said that an additional blooper case was brought to his attention. In Section 109.2 ARS references to weights and measures needed to be updated to correspond to the correct Arizona Revised Statutes currently in use. He asked if this change was provided in the agenda packet. Mr. Tyus confirmed that it was, with the label 10-01G. He also said that a blooper case 10-01F was included in the packet, which updated the table of contents for the detail drawings to make typographic corrections, add a missing detail, change the revised titles and numbers for the curb ramp details, and add the latest revision dates. Mr. Tyus also noted that the reference to the METRIC specifications was removed from detail 101, which was an oversight when the drawings were converted to English. Bob Herz also requested a change in Section 310.4 from ‘price bid’ to ‘contract

unit price' since not all contracts are bid now. Rod Ramos suggested an additional drafting correction to Detail 221 on the curb and gutter transition where Type 'C' curbs would not have a flat face visible. Chairman Gonzales asked if the group would like to vote on all the bloopers individually or as a package. Mr. Herz suggested they all be voted on together, and moved to accept all the blooper cases including the new updates and the minor revisions to Section 310 and Detail 221 as discussed. The motion was seconded by Mr. Gonzales. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 1 not present.

d. Case 10-02 – Utility Pothole Repair: *Revise and add keyhole repair to Detail 212 and add new Sections 355 and 708.* Warren White said the current version includes the changes requested at the previous meeting. Seeing no further discussion, Mr. Herz moved and Mr. Gonzales seconded to approve Case 10-02. A roll call vote was taken. The motion passed: 15 yes, 0 no, 0 abstaining, 0 not present.

e. Case 10-03 – Modify Section 336 Pavement Matching and Surfacing Replacement: *Revise Section 336 to be in conformance with changes made last year to Detail 200-1 and Detail 200-2.* Yvonne Martinez, substituting for Peter Kandaris, said the current version includes updates requested by AGC. Bob Herz asked if they received the comments he sent yesterday. Ms. Martinez said that she was not aware of Maricopa County's feedback. Mr. Herz explained that he found several conflicts in the current draft. Some concerns he voiced included the requirement of two paving courses even on residential streets that don't require them during construction. Another conflict was referencing the Type "D" repair for concrete, when Type "D" in the detail drawing does not allow it. He said he found other conflicts and references that needed to be updated, and suggested a vote on the case be postponed. Mr. Herz said an additional meeting in October would provide the time needed to update the case. Brian Gallimore said that the case was making necessary updates to match changes already made to Details 200-1 and 200-2, and that there are conflicts in the current specification. Members agreed that changes to Section 336 should not wait an additional year, and proposed to vote on the case during an October meeting.

f. Case 10-05 – Revise FOREWORD: *Clarify use of the MAG Specifications and Details for Public Works document.* No comments or updates were submitted. Case to be continued in 2011.

g. Case 10-08 – Revise Section 717 Asphalt Rubber. *Revise Section 717 ASPHALT-RUBBER to obtain a uniform specification.* No comments or updates were submitted. Case to be continued in 2011.

h. Case 10-09 – Revise Safety Rail Detail 145. *Adjust Detail 145 to clarify use regarding AASHTO pedestrian loading requirements.* Mr. Herz said the only changes to the detail were to change the steel pipe from grade A to grade B in Note 1, and to add Note 7 "SAFETY RAIL IS NOT TO BE USED AS A PEDESTRIAN BRIDGE RAIL." Mr. Gonzales asked when this detail should be specified in regards to different vertical heights. Mr. Herz said that was a design issue, and that these were just construction

details. Seeing no further discussion, Mr. Herz moved and Mr. Gonzales seconded to approve Case 10-09. A roll call vote was taken. The motion passed: 15 yes, 0 no, 0 abstaining, 0 not present.

i. Case 10-10 – Proposed New Detail 122 – Pavement Marker for Fire Hydrants. *The new detail would standardize placement of fire hydrant markers and enhance public safety.* Bob Herz asked if members had comments. A few cities, such as Phoenix said they do not use markers; others such as Surprise already have supplemental details. Seeing no further discussion, Mr. Gonzales moved and Mr. Tobiasson seconded to approve Case 10-10. A roll call vote was taken. The motion passed: 11 yes, 0 no, 4 abstaining, 0 not present.

j. Case 10-11 – Revise Detail 110 – Plan Symbols. *Update and expand graphic standards to have plans be more uniform among MAG agencies.* Bob Herz said an updated Detail 110-1 was at their place that redlined final changes to the detail including: removing traffic signals and the utility meter symbol (since other specific meter symbols were provided), and the addition of a note stating: ‘PLAN SYMBOLS FOR EXISTING FEATURES ARE TO BE DASHED, GRAY SCALED, OR DRAWN USING THIN LINEWORK.’ Several members commented on whether to include text labels on meter symbols. Mr. Herz suggested that labels could be added to the symbols, but that you should be able to tell what type of meter it is by the labels on the lines running to them. Jim Badowich suggested adding a note that clarified the use of labels on symbols, since many of the plans they receive are difficult to read when many lines are close to each other. Mr. Herz suggested postponing the vote on this case until next month, and asked concerned members to come up with a note that could be added to the detail.

k. Case 10-12 – New Section 361 – Shallow Depth Fiber Optic Micro-Conduit Installation. *Provide specifications for the installation of underground fiber optic micro-conduit telecommunications facilities within the public right-of-way.* No comments or updates were submitted. Case to be continued in 2011.

l. Case 10-13 – Revisions to Subsection 618.2 and Section 765 Regarding Rubber Gaskets. *Revise RCP joint specifications to be consistent from section to section and to be consistent with industry standards as commonly accepted amongst agencies in the region.* Troy Tobiasson asked for any feedback. Mr. Herz thanked industry representatives for their assistance. Jamie Erikson reminded the committee that since Section 765 was removed, any references to it would also need to be updated similar to the text provided in Section 736.3.2. Mr. Tobiasson agreed. Seeing no further discussion, Mr. Tobiasson moved and Mr. Herz seconded to approve Case 10-13. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 1 not present.

5. General Discussion:

Nominations for 2011 Chair and Vice Chair

Mr. Gonzales announced that he would not be able to serve an additional term as Chair. Mr. Tyus explained MAG's policy, which allows technical committees to re-nominate the current Chair and Vice Chair for an additional term, but in absence of such a recommendation, the Vice Chair is promoted to Chair and any other member can submit a letter of interest to the MAG Executive Committee to serve as the new Vice Chair. In this case, Troy Tobiasson has agreed to continue to serve and would be the Chair beginning January 2011. Members interested in serving as Vice Chair can contact Mr. Tyus for more information. Letters of application are due to the MAG Executive Committee by November 1st. East-side representatives are encouraged to apply to help achieve a geographic balance. The final appointments are made by the MAG Executive committee during their November meeting.

ASTM Portal

Gordon Tyus demonstrated a MAG portal to the ASTM specifications website. He explained that the current page was on the internal MAG server, but would be available on the internet once the security certificate was obtained. He showed how to log-in using a standard username and password, and also options provided to allow users to create their own name and password. He explained that users who sign up would have their emails verified to be from a MAG member agency, and MAG would also log IP addresses to help track any potential abuse. The final generic username and password would be sent out when the site was live. Mr. Gonzales asked members to let interested parties from other agencies not represented on the committee know about this service.

Specifications and Details Outside the Right-of-Way Working Group Update

Yvonne Martinez passed out a handout prepared by Mr. Kandariz that updated a draft report of the *MAG Uniform Specifications Outside of Right-of-Way*. It included updates discussed during the August 24 working group meeting. The next meeting of the working group is scheduled for 1:30 p.m. on September 28 at the ARPA offices.

6. Adjournment:

The meeting was adjourned at 2:40 p.m.

2010 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

(Updated information can be found on the website: <http://www.mag.maricopa.gov/detail.cms?item=11284>)

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE	
09-13	Case 09-13 : Dual Curb Ramp Details	Peoria	Jesse Gonzales	07/01/2009 02/03/2010	Withdrawn 07/07/2010	0 0 0	Yes No Abstain
09-14	Case 09-14 : Revise Ramps for ADA Compliance, Details 231, 232, 233 and 234 – Replace with Details 235-1, 235-2, 235-3, 235-4 and 235-5	MCDOT	Bob Herz	07/01/2009 09/01/2010	09/01/2010 (approved)	14 0 0	Yes No Abstain
09-15	Case 09-15 : Revisions to Section 610.4: Pipe Protection	Tempe	Tom Wilhite	07/01/2009 04/07/2010	09/01/2010 (approved)	14 0 0	Yes No Abstain
10-01	Miscellaneous Bloopers: Case 10-01A : Revisions to Section 317 Asphalt Milling Case 10-01B : Correct Table 715-1 and Section 340.2.1 Case 10-01C : Correct table reference in Section 321.10.2 Case 10-01D : Correct corrupted note on Detail 221 Case 10-01E : Correct typographic and spelling errors in Detail 100 and Sections 410.1, 611.11 and 741.2.1 Case 10-01F : Correct typographic errors in Table 702-1. Case 10-01G : Update Details Index 100-1 and 100-2. Delete the word “Metric” from first note on Detail 101. Case 10-01 H : Update ARS references in Section 109.2.	MCDOT Chandler MCDOT	Bob Herz Warren White Bob Herz	 01/06/2010 09/01/2010	 10-01B 4/07/10 (approved) 09/01/2010 (all others approved)	14 0 0	Yes No Abstain
10-02	Case 10-02 : Utility Pothole Repair: Revise and add keyhole repair to Detail 212. New Sections 355 and 708.	Chandler	Warren White Peter Kandaris	02/03/2010 09/01/2010	09/01/2010 (approved)	15 0 0	Yes No Abstain
10-03	Case 10-03 : Modifications Section 336 Pavement Matching and Surfacing Replacement.	SRP	Peter Kandaris	03/03/2010 09/01/2010	10/06/2010	0 0 0	Yes No Abstain
10-04	Case 10-04 : Revise Section 109.8: Remove quotations of ARS from text located in Section 109.8 PAYMENT FOR DELAY.	MCDOT	Bob Herz	03/03/2010	06/02/2010 (approved)	13 0 0	Yes No Abstain
10-05	Case 10-05 : Revise FOREWARD to clarify use of the <i>MAG Specifications and Details for Public Works Construction</i> document.	Peoria	Jesse Gonzales	03/03/2010 05/05/2010		0 0 0	Yes No Abstain

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CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE	
10-06	Case 10-06 : Revise Controlled Low Strength Material Specifications in Sections 604, 701 and 728.	ARPA	Jeff Hearne	04/07/2010 06/03/2010	07/07/2010 (approved)	12 0 0	Yes No Abstain
10-07	Case 10-07 : Revise Detail 230 - SIDEWALKS to change the minimum sidewalk width from 4' to 5'.	MCDOT	Bob Herz	04/07/2010 05/05/2010	07/07/2010 (approved)	9 3 0	Yes No Abstain
10-08	Case 10-08 : Re-write Section 717 ASPHALT-RUBBER.	MCDOT	Bob Herz	05/05/2010		0 0 0	Yes No Abstain
10-09	Case 10-09 : Revise Detail 145 SAFETY RAIL to comply with AASHTO pedestrian loading requirements.	MCDOT	Bob Herz	05/05/2010 08/04/2010	09/01/2010 (approved)	15 0 0	Yes No Abstain
10-10	Case 10-10 : New Detail 122 PAVEMENT MARKER FOR FIRE HYDRANTS.	MCDOT	Bob Herz	05/05/2010	09/01/2010 (approved)	11 0 4	Yes No Abstain
10-11	Case 10-11 : Revise Detail 110 PLAN SYMBOLS. Update and expand graphic standards and symbols.	MCDOT	Bob Herz	09/01/2010	10/06/2010	0 0 0	Yes No Abstain
10-12	Case 10-12 : New Section 361 – Shallow Depth Fiber Optic Micro-Conduit Installation.	Scottsdale	Rod Ramos	05/05/2010 08/04/2010		0 0 0	Yes No Abstain
10-13	Case 10-13 : Revisions to Subsection 618.2 and Section 765 – Revise RCP joint specification to be consistent between sections and with industry standards.	Goodyear	Troy Tobiasson	07/07/2010 08/04/2010	09/01/2010 (approved)	14 0 0	Yes No Abstain

MAG Specification & Detail Committee ATTENDANCE for 2010

Quorum - 8 Agency Representatives

Member	Representative	January 6, 2010	February 3, 2010	March 3, 2010	April 7, 2010	May 5, 2010	June 2, 2010	July 7, 2010	August 4, 2010	Sept. 1, 2010	October 6, 2010
Agency Members:											
Avondale	Jim Badowich	√	√	√	√	√	√	√	√	√	
Buckeye	Scott Zipprich	√	√	√	√		√	√		P	
Chandler	Warren White	√	√	√	√	√	√	√	√	√	
El Mirage	Dennis Teller	√	√	√	√		√		√	√	
Gilbert	Edgar Medina		√		√	√	S	√	√	S	
Glendale	Tom Kaczmarowski	√		P	√	S	√	√	√	√	
Goodyear	Troy Tobiasson	√	√	√		√	√	√	√	√	
Maricopa Co.	Bob Herz (Transportation)	√	√	√	√	√	√	√	√	√	
	Shimin Li (Water)					√		√	√	√	
Mesa	Mike Samer	√	√	√	√	√		√	√	√	
Peoria	Jesse Gonzales	√	√	√	√	√	√	√	√	√	
Phoenix	Syd Anderson (Street Trans)	√	√	√	√	√		√	√	√	
	Jami Erickson (Water)	√	√	√	√	√	√	√	√	√	
Queen Creek	Mark Palichuk	√		√	√	√	√	√	√	√	
Scottsdale	Rodney Ramos	√		√		√			√	√	
Surprise	Jason Mahkovtz	√		√	√	√	√		√	√	
Tempe	Thomas Wilhite	√	√	√	√	√	√	√	√	√	
Advisory Members:											
AZ Cement Association	John Ashley	√	√	√	√	√	√		√	√	
AZ Rock Products Association	Michael Smith	√	√	√	√	√		√	√		
	Jeff Hearne	√	√		√	√	√	√	√	√	
Associated General Contractors	Brian Gallimore	√	√		√	√	S		√	√	
	Jeff Benedict (Alternate)	√	√	√	√	√	√	S	√	√	
S.R.P.	Peter Kandaris	√	√	√	√	√	√	S	√	S	
Independent	Paul Nebeker	√	√	√	√	√	√		√		
National Utility Contractors Assoc	Kwigs Bowen	√	√		√		S	√	S	S	
	Tony Braun or Bill Davis (Alternate)	√	√	√	√	√	√	√	√	√	
MAG Admin.	Gordon Tyus	√	√	√	√	√	√	√	√	√	

Attendance: √: Attended meeting; (Blank): Not attended meeting; S: Designated substitute attended
P: Attended a portion of the meeting; A: Attended via audio conferencing.

MAG Specification & Detail Committee VOTING SUMMARY for 2010

Case No.	Title – Section/Detail	Vote Date	Avondale	Buckeye	Chandler	El Mirage	Gilbert	Glendale	Goodyear	Maricopa County	Mesa	Peoria	Phoenix	Queen Creek	Scottsdale	Surprise	Tempe	Voting Summary Y-N-A-NP
09-13	Dual Curb Ramp Details																	
09-14	Revise Ramps for ADA Compliance, Details 231, 232, 233 and 234. – Replace with Details 235-1, 235-2, 235-3, 235-4 and 235-5.	09/01/10	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14-0-0-1
09-15	Revisions to Section 610.4: Pipe Protection	09/01/10	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14-0-0-1
10-01A	Revisions to Section 317 Asphalt Milling	09/01/10	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14-0-0-1
10-01B	Correct Table 715-1 and Section 340.2.1	04/07/10	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	-	Y	Y	13-0-0-2
10-01C	Correct table reference in Section 321.10.2	09/01/10	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14-0-0-1
10-01D	Correct corrupted note on Detail 221	09/01/10	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14-0-0-1
10-01E	Correct typographic and spelling errors in Detail 100 and Sections 410.1, 611.11 and 741.2.1	09/01/10	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14-0-0-1
10-01F	Update Details Index 100-1 and 100-2. Delete the word “Metric” from first note on Detail 101.	09/01/10	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14-0-0-1
10-01G	Update ARS references in Section 109.2.	09/01/10	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	14-0-0-1
10-02	Utility Pothole Repair: Revise and add keyhole repair to Detail 212. New Sections 355 and 708.	09/01/10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	15-0-0-0
10-03	Modifications Section 336 Pavement Matching and Surfacing Replacement.	10/06/10																

Voting Abbreviations: Y: Yes N: No A: Abstain — : Not Present (NP)

*: Indicates changes made to proposal prior to vote.

MAG Specification & Detail Committee VOTING SUMMARY for 2010

Case No.	Title – Section/Detail	Vote Date	Avondale	Buckeye	Chandler	El Mirage	Gilbert	Glendale	Goodyear	Maricopa County	Mesa	Peoria	Phoenix	Queen Creek	Scottsdale	Surprise	Tempe	Voting Summary Y-N-A-NP
10-04	Revise Section 109.8: Remove quotations of ARS from text located in Section 109.8 PAYMENT FOR DELAY.	06/02/10	Y	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	-	Y	Y	13-0-0-2
10-05	Revise FOREWARD to clarify use of the <i>MAG Specifications and Details for Public Works Construction</i> document.																	
10-06	Revise Controlled Low Strength Material Specifications in Sections 604, 701 and 728.	07/07/10	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	-	-	Y	12-0-0-3
10-07	Revise Detail 230 - SIDEWALKS to change the minimum sidewalk width from 4' to 5'.	07/07/10	Y	Y	Y	-	Y	Y	Y	Y	N	Y	N	N	-	-	N	9-3-0-3
10-08	Re-write Section 717 ASPHALT-RUBBER.																	
10-09	Revise Detail 145 SAFETY RAIL to comply with AASHTO pedestrian loading requirements.	09/01/10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	15-0-0-0
10-10	New Detail 122 PAVEMENT MARKER FOR FIRE HYDRANTS.	09/01/10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	A	Y	A	A	A	11-0-4-0
10-11	Revise Detail 110 PLAN SYMBOLS. Update and expand graphic standards and symbols.	10/06/10																
10-12	New Section 361 – Shallow Depth Fiber Optic Micro-Conduit Installation.																	

Voting Abbreviations: Y: Yes N: No A: Abstain — : Not Present (NP)

*: Indicates changes made to proposal prior to vote.

MAG Specification & Detail Committee VOTING SUMMARY for 2010

Case No.	Title – Section/Detail	Vote Date	Avondale	Buckeye	Chandler	El Mirage	Gilbert	Glendale	Goodyear	Maricopa County	Mesa	Peoria	Phoenix	Queen Creek	Scottsdale	Surprise	Tempe	Voting Summary Y-N-A-NP
10-13	Revisions to Subsection 618.2 and Section 765 – Revise RCP joint specification to be consistent between sections and with industry standards.	09/01/10	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-	Y	Y	Y	14-0-0-1

Voting Abbreviations: Y: Yes N: No A: Abstain — : Not Present (NP)

*: Indicates changes made to proposal prior to vote.

SECTION 336

PAVEMENT MATCHING AND SURFACING REPLACEMENT

336.1 DESCRIPTION:

Street and alley pavement and surfacing within the Contracting Agency's rights-of-way, removed by construction activities or to be widened or matched in connection with the improvement of Public Works, shall be placed as shown on the plans and applicable standard details, in accordance with this specification and/or the special provisions.

Asphalt concrete roadway pavement replacement shall be constructed in accordance with Type A, B, or T-Top of Standard Detail 200 and as indicated on the plans or in the special provisions.

Portland cement concrete pavement replacement shall be in accordance with Type C of the Standard Detail 200 and as required by Section 324.

All other surface replacement in the right-of-way but not in paved roadways shall be constructed in accordance with Type D of Standard Detail 200 and as indicated on the plans.

Temporary pavement replacement shall be constructed as required herein.

Pavements to be matched by construction of new pavements adjacent to or at the ends of a project shall be milled or saw cut in accordance with these specifications and where shown on the plans.

Pavement and surfacing replacement within ADOT rights-of-way shall be constructed in accordance with their permits and/or specification requirements.

336.2 MATERIALS AND CONSTRUCTION METHODS:

Materials and construction methods used in the replacement of pavement and surfacing shall conform to the requirements of all applicable standard details and specifications, latest revisions.

336.2.1 Pavement Widening or Extensions: Existing pavements which are to be matched by pavement widening or pavement extension shall be trimmed to a neat true line with straight vertical edges free from irregularities with a device specifically designed for this purpose. The minimum depth of cut shall be 1 ½ inches or D/4, whichever is greater.

The existing pavement shall be cut and trimmed after placement of required ABC and just prior to placement of asphalt concrete for pavement widening or extension, and the trimmed edges shall be painted with a light coating of asphalt cement or emulsified asphalt immediately prior to constructing the new abutting asphalt concrete pavements. No extra payment shall be provided for these items and all costs incurred in performing this work shall be incidental to the widening or pavement extension.

The exact point of matching, termination, and overlay may be adjusted in the field, if necessary, by the Engineer or designated representative.

336.2.2 Pavement to be Removed: Existing asphalt pavement to be removed for trenches or for other underground construction or repairs shall be cut by a device capable of making a neat, straight and smooth cut without damaging adjacent pavement that is not to be removed. The Engineer's decision as to the acceptability of the cutting device and manner of operation shall be final.

In lieu of cutting trenches across driveways, curbs and gutters, sidewalks, alley entrances, and other types of pavements, the Contractor may, when approved by the Engineer, elect to tunnel or bore under such structures and pavements.

When installations are within the street pavement and essentially parallel to the center line of the street, the Contractor, with approval of the Engineer, may elect to bore or tunnel all or a portion of the installation. In such installations, the seal coat requirements, as discussed in Section 336.2.4, will be modified as follows:

(A) If the pavement cuts (bore pits, recovery pits, etc.) are 300 feet or more apart, the bore or tunneled distance will not be considered as part of the open trench and the seal coat may not be required.

(B) If the pavement cuts (bore pits, recovery pits, etc.) are less than 300 feet apart, the distance between the cuts will be considered the same as a trench cut and the distance will be added to any trench cut distances.

336.2.3 Temporary Pavement Replacement: Temporary pavement replacement, as required in Section 601, may be with cold-mix asphalt concrete, with a minimum thickness of 2 inches, using aggregate grading in accordance with [Marshall mix design of](#) Section 710. Permanent pavement replacement shall replace temporary repairs within 5 working days after completion of temporary work.

Temporary pavement replacement shall be used in lieu of immediate placement of single course permanent replacement or the first course of two course pavement replacement only on transverse lines such as spur connections to inlets, driveways, road crossings, etc., when required by the Engineer, by utilities or others who subcontract their permanent pavement replacement, under special prior arrangement; or for emergency conditions where it may be required by the Engineer. Temporary pavement replacement shall be placed during the same shift in which the backfill to be covered is completed.

Rolling of the temporary pavement replacement shall conform to the following:

(A) Initial or breakdown rolling shall be followed by rolling with a pneumatic-tired roller. Final compaction and finish rolling shall be done by means of a tandem power roller.

(B) On small areas or where equipment specified above is not available or is impractical, the Engineer will approve the use of small vibrating rollers or vibrating plate type compactors provided comparable compaction is obtained.

The surface of the temporary pavement shall be finished off flush with the adjacent pavement.

336.2.4 Permanent Pavement Replacement and Adjustments:

MCDOT recommends deleting. Conflicts w/matching pavements and is covered by Table 710-1.

336.2.4.1 Permanent Pavement Replacement: Pavement replacement for longitudinal trenches (essentially parallel to traffic) greater than 50 feet in length and transverse cuts of any length shall be at least a two-course pavement replacement. Pavement replacement for longitudinal trenches less than 50 feet in length, bell holes and similar small areas may be a single course provided the layer thickness complies with the requirements of Section 710.1. All pavement replacement shall match gradation and thickness of the existing pavement. Pavement replacement shall be compacted to the same density specified for asphalt concrete pavements in Section 321. [The compacted thickness of all courses shall conform to the requirements of Table 710-1.](#)

Unless otherwise noted, pavement replacement shall comply with the following:

(A) Single course pavement replacement shall consist of a 1/2" or 3/4" mix in accordance with Section 710.

(B) The base course(s) of a multi-course pavement replacement shall consist of a 3/4" mix in accordance with Section 710.

MCDOT recommends deleting.

(C) The surface course of a multi-course pavement replacement shall consist of a 3/8" or 1/2" mix in accordance with Section 710 to match the existing surface. ~~The surface course shall not be placed sooner than 2 weeks after the base course, except where the trench crosses a signalized intersection. In this case the surface course shall be placed within 48 hours, or the crossing pavement replacement shall be a single course as specified above.~~

(D) Where the base course is to be placed with non-compactive equipment, it ~~shall be not less than 2 inches in thickness and the material~~ shall be immediately rolled with a pneumatic-tired roller. ~~The surface course shall be of sufficient depth to provide the total required compaction thickness of the two courses, but not more than 1 inch.~~

(E) Where the trench is 6 feet or more in width, all courses shall be placed with self-propelled spreading and compacting equipment. When the trench is from 6 to 8 feet in width, self-propelled spreading and compacting equipment shall not be wider than 8 feet. ~~All courses, except the surface course, shall be of a compacted thickness of not less than 1 1/2 inches.~~

(F) Placement of the surface course is to be by means which will result in a surface ~~texture satisfactory to the Engineer and~~ flush with the existing pavement.

The pavement replacement surface shall not vary more than 1/4 inch from the lower edge of a straightedge placed across the replacement pavement surface between edges of the existing matched surfaces. When the pavement replacement includes replacement of the roadway crown, the surface smoothness shall comply with requirements of Section 321.

Laying a single course or the base course(s) of the asphalt concrete pavement replacement shall never be more than 600 feet behind the ABC placement for the pavement replacement.

The trench must be compacted to its required density, and required ABC must be in place and compacted prior to the placement of the asphalt concrete.

Chandler recommends reducing to 300 feet

For cuts greater than 600 feet in length the entire area shall then be slurry seal coated in accordance with Section 332 or as otherwise specified. This seal coat shall extend from the edge of pavement or lip of gutter to the street centerline except that on residential streets less than 36 feet face to face of curb or where the pavement patch straddles the centerline, the entire width of street shall be seal coated.

In lieu of placing the seal coat as required previously, and with approval of the Contracting Agency, the Contractor may deposit with the Contracting Agency for credit to the Street Maintenance Department, a negotiated agreed upon amount. The Street Maintenance Department will incorporate this work into their street maintenance program.

336.2.4.2 Adjustments: When new or existing manholes, valves, survey monuments, clean outs, etc. fall within the limits of the permanent pavement replacement as discussed in this Section, the Contractor shall be responsible for adjusting the various items to the new pavement surface or as directed by the Engineer. This will include but not be limited to slurry and chip seals.

The Contractor will coordinate with the Engineer and with representatives of the various utilities regarding the adjustment and inspection of the work. The Contractor shall be responsible for obtaining and complying with all specifications, special requirements, details, etc. of the Utility Company regarding the adjustments. When adjusting the Agency's utilities, survey monuments, etc., the adjustment will comply with these Specifications and Details.

The work will be done in compliance with OSHA standards and regulations regarding confined space entry. The Contractor shall remove all material attached to the lids and/or covers including that of prior work. The method of removal shall be approved by the Engineer and/or the Utility Representative.

336.3 TYPES AND LOCATIONS OF PAVEMENT AND SURFACING REPLACEMENT:

Normally, the type of pavement replacement and backfill required will be noted on the plans or specified in other portions of the contract documents and construction will be in accordance with Detail 200-1 and 200-2. If a type is not noted on the plans or specified in the special provisions, the following criteria will govern:

Type A trench repair will be utilized on all streets where the excavation is essentially longitudinal or parallel to traffic.

T-Top trench repair will be utilized on all streets where the excavation is essentially transverse or not parallel to traffic, including trenches that go through an intersection. Type B trench repair may be used to repair transverse trenches if specified by the Agency.

MCDOT recommends altering Detail 200-1 to include repair of concrete sidewalks & drives.

Type C trench repair will be used to match-repair existing portland cement concrete pavement.

Type D trench repair will be utilized to repair asphalt concrete, portland cement and concrete aggregate surfaces in the right of way, but not in paved roadways surfaces other than asphalt concrete or portland cement concrete pavement. It may also be used when the condition of the existing pavement does not justify construction of Type A, Type B or T-Top trench repair. Prior written approval of the Engineer is required for this condition.

Where a longitudinal trench is partly in pavement, the pavement shall be replaced to the outside edge of the existing pavement, on a straight line, as indicated on the plans. Measurements for payment shall be from the inner limit of pay width allowed below, to the outside edge of the existing pavement as defined herein.

Where no part of a trench is in pavement, surfacing replacement will only be specified where existing surfacing materials have been removed.

When a trench cut is in aggregate surfaced area, the surfacing replacement shall be of a like type and depth as the existing material, compacted to the densities required in Section 601.

336.4 MEASUREMENT:

Measurement for payment and surfacing replacement shall be by the square yard, based upon actual field measurement of the area covered except as noted below.

(A) In computing pay quantities for replacement Types B and E, pay widths will be based on the actual field measured width, however the boundaries of the measurement will not extend further than ½ the distance, either side, from the centerline of the pipe as depicted on Table 601-1, Maximum Width At Top Of Pipe Greater Than O.D. Of Barrel.

(B) In computing pay quantities for replacement Types T-Top, A, C and D, pay widths will be based on the actual field measured width, however the boundaries of the measurement will not extend further than ½ the distance plus 12 inches, either side, from the centerline of the pipe as depicted on Table 601-1, Maximum Width At Top Of Pipe Greater Than O.D. Of Barrel. In all cases, the minimum pay width for replacement Types T-Top, A and D shall be 48 inches.

(C) Where a longitudinal trench is partly in pavement, computations of pay quantities shall be based on the limitations specified above.

(D) The length of pavement and surfacing replacement shall be measured through any manhole, valve box, or other structure constructed in the pipe line, and any pavement or surface replacement and/or seal treatment in excess of the above pay widths shall be considered and included in the bid item for such structure.

(E) Any pavement replacement in excess of the specified pay widths necessitated by the installation of valves, tapping sleeves and valves, valve by-passes, and concrete thrust blocks shall be included in the bid price for these items.

(F) When special provisions allow deviations from the trench widths specified in Section 601, the above allowed pay widths for pavement replacement may be altered where so specified.

(G) Measurement of pavement and surfacing replacement shall be made along the finished surface of the ground to the nearest foot, and shall be computed to the nearest square yard.

336.5 PAYMENT:

Direct payment for pavement or surfacing replacement will be made for replacement over all pipe trench cuts except as otherwise allowed in the special provisions. Payment for replacements over other work shall be included in the cost of constructing that work, in accordance with the applicable standard details and specifications.

Payment for temporary pavement replacement shall be included in the cost of the pipe.

When a Contractor has the option of either jacking and/or boring or open cut construction, and elects to construct a pipeline by the jacking and/or boring method, he will be paid for the replacement of such items of work as pavement, curb and gutter, sidewalk, driveway, and alley entrances, as allowed for open cut construction.

FOREWORD

Publication of these Uniform Standard Specifications and Details for Public Works Construction [Within Public Rights of Way](#) fulfills the goal of a group of agencies who joined forces in 1966 to produce such a set of documents. Subsequently, in the interest of promoting county-wide acceptance and use of these standards and details, the Maricopa Association of Governments accepted their sponsorship and the responsibility of keeping them current and viable.

These specifications and details, representing the best professional thinking of representatives of several Public Works Departments, reviewed and refined by members of the construction industry, were written to fulfill the need for uniform rules governing public works construction performed for Maricopa County and the various cities and public agencies in the county. It further fulfills the need for adequate standards by the smaller communities and agencies [within Maricopa County](#) who could not afford to promulgate such standards for themselves. [Agencies in other regions or climes within the state of Arizona wishing to apply these specifications may need to make adjustments for local conditions.](#)

[These uniform specifications and details are intended to aid the private construction industry in providing modern materials and construction techniques, eliminate conflicts and confusion, lower construction costs and encourage more competitive bidding by private contractors for the benefit of public works construction in the right-of-way. Use of these standards for projects outside of the right-of-way should be reviewed by professional engineers and architects and applied with care to insure relevance to the planned work.](#)

[Specifications and details contained herein should be incorporated into project plans and specifications after careful review by the design engineer or architect of specific project needs. Not all specifications will apply to all projects as these standards are developed to meet a variety of public works needs. Prepared plans and specifications should clearly call out specific uniform specifications and details required for the project.](#)

[Uniform specifications and details are not a substitute for good engineering judgment. Unique conditions will arise that are outside the scope of these standards. When this happens, professional engineers and architects are required to use their judgment to amend these standards to best meet site-specific project needs in accordance with rules set forth by the State of Arizona and policy statements made by the Arizona State Board of Technical Registration.](#)

The Uniform Standard Specifications and Details for Public Works Construction will be revised periodically and reprinted to reflect advanced thinking and the changing technology of the construction industry. To this end a Specifications and Details Committee has been established as a permanent organization to continually study and recommend changes to the Specifications and Details. Interested parties may address suggested changes and questions to:

Standard Specifications & Details Committee
c/o Maricopa Association of Governments
302 North First Avenue, Suite 300
Phoenix, Arizona, 85003.

These suggestions will be reviewed by the committee and appropriate segments of the industry and cumulative annual revisions will be published the first of each year. A copy of this publication is available for review on the internet at the website listed below.

Please follow the links to the publications page and look for *Uniform Standard Specifications for Public Works Construction and/or Uniform Standard Details for Public Works Construction Within Public Rights of Way*:

www.mag.maricopa.gov

While in the interest of **regional** uniformity, it is hoped that all using agencies will adopt these standards with as few changes as possible, it is recognized that because of charter requirements and for other reasons, some agencies will find it necessary to modify or supplement certain requirements. **In the interest of reducing a proliferation of agency specific modifications it is strongly recommended that the agency representatives to MAG bring their modifications for consideration by the committee for inclusion into these standards.**

FOREWARD

Public Works Construction ~~Not in~~ Outside the Right of Way

This document has been prepared as a supplement to the Uniform Standard Specifications for Public Works Construction as adopted by the Maricopa Association of Governments (MAG) and is to be used for onsite development that is not associated with public right of way construction. ~~While~~ ~~†The standards within this supplement~~ ~~hese standards~~ are intended to apply to all agency public works development projects within Maricopa County, ~~they are intended to be utilized in applicable agency developments~~ such as libraries, equipment yards, service centers, recreational facilities or other public agency building sites. They may also serve as a guide for non-agency private development should the design professional find they are useful.

~~We~~ ~~With this supplement, the MAG Specifications and Details Committee~~ attempts to achieve maximum uniformity of planning, engineering, and construction practices for agency work outside the public right of way ~~and as applicable as outlined above~~. These are minimum standards and are intended to assist, but not to substitute for competent work by engineering and design professionals. Special conditions or environmental constraints may require a more stringent design than would normally be required under ~~these Standards~~ this supplement. It is not the intent to ~~unreasonably~~ limit any innovative effort which could result in a superior project design or meet specific design objectives. A proposed design which ~~is different than~~ varies from these ~~Development Guidelines~~ standards will be evaluated on the basis that the proposed design will produce a comparable or superior result, ~~and that is~~ in every way adequate for the user, and the public.



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: April 29, 2010

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Section 717 ASPHALT-RUBBER

Case 10-08

PURPOSE: Revise Specification Section 717 ASPHALT-RUBBER to obtain a uniform specification.

REVISION: The attached sheets represent a re-write of the current specification to match MCDOT's current requirements. Other agencies are requested to indicate how their requirements may differ so that the specification can be modified to accommodate the needs of all agencies.

SECTION 717

ASPHALT- RUBBER

717.1 DESCRIPTION:

The work under this section shall consist of furnishing, proportioning and mixing all the ingredients necessary to produce asphalt-rubber material.

717.2 MATERIALS:

717.2.1 Asphalt-Rubber:

Asphalt Cement: Asphalt cement shall conform to the requirements of Section 711.

Rubber: Rubber shall meet the following gradation requirements when tested in accordance with Arizona Test Method 714.

Sieve Size	Percent Passing
#10 (2.00 mm)	100
#16 (1.18 mm)	65 - 100
#30 (600 μ m)	20 - 100
#50 (300 μ m)	0 - 45
#200 (75 μ m)	0 - 5

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

Certificates of Compliance conforming to Arizona State Department of Transportation Standard Specifications for Road and Bridge Construction Section 106.05 shall be submitted. In addition, the Certificates shall confirm that the rubber is a crumb rubber, derived from processing whole scrap tires or shredded tire materials; and the tires from which the crumb rubber is produced is taken from automobiles, trucks, or other equipment owned and operated in the United States. The Certificates shall also verify that the processing does not produce, as a waste product, casings or other round tire material that can hold water when stored or disposed of above the ground.

717.2.2 Asphalt-Rubber Proportions and Properties: Ground rubber in asphalt-rubber shall be a minimum of 20 percent and a maximum of 22 percent by weight of the asphalt cement.

Asphalt shall be Type 1 unless otherwise specified and conform to the following:

Property	Requirement		
	Type 1	Type 2	Type 3
Grade of base asphalt cement	PG 64-16	PG 58-22	PG 52-28
Rotational Viscosity*; 351°F (177°C); Pascal seconds (cps)	1.5-4.0 (1500-4000)	1.5-4.0 (1500-4000)	1.5-4.0 (1500-4000)
Penetration; 39°F (4°C), 200g, 60 sec. (ASTM D 5); in (dmm), min	0.04 (10)	0.06 (15)	0.10 (25)
Softening Point; (ASTM D 36); °F (°C), min.	135 (57)	129 (54)	126 (52)
Resilience; 77°F (25°C) (ASTM D 3407);%,min	25	20	15
* The Viscometer used must be a hand held rotational viscometer, such as a Rion (formerly Haake) Model VT – 04, or an equivalent, using Rotor No. 1. The rotor, while in the off position, shall be completely immersed in the binder at a temperature from 350°F to 355°F for a minimum heat equilibrium period of 60 seconds, and an average viscosity determined from three separate constant readings (± 0.5 pascal-seconds) taken within a 30 second time frame with the viscotester level during testing and turned off between readings. Continuous rotation of the rotor may cause thinning of the material immediately in contact with the rotor, resulting in erroneous results.			

717.2.3 Asphalt-Rubber Design: At least two weeks prior to the use of asphalt-rubber, the Contractor shall submit an asphalt-rubber design prepared by an ADOT approved laboratory. Such design shall meet the requirements specified herein. The design shall show the values obtained from the required tests, along with the following information: percent, grade and source of the asphalt cement used; and percent, gradation and source(s) of rubber used.

717.3 CONSTRUCTION REQUIREMENTS:

717.3.1 Mixing of Asphalt-Rubber: The temperature of the asphalt-cement shall be between 375°F (191°C) and 425°F (218°C) prior to the addition of rubber. No agglomerations of rubber particles in excess of 2" in the least dimension shall be allowed in the mixing chamber. The ground rubber and asphalt-cement shall be accurately proportioned in accordance with the design and thoroughly mixed prior to the beginning of the one-hour reaction period. Reaction time may be decreased to 45-minutes if documentation is provided that the physical properties of the mix design requirements are consistently met using a 45-minute reaction period. The Contractor shall document that the proportions are accurate and that the rubber has been uniformly incorporated into the mixture. Additionally, the Contractor shall demonstrate that the rubber particles have been thoroughly mixed such that they have been "wetted." The occurrence of rubber floating on the surface or agglomerations of rubber particles shall be evidence of insufficient mixing. The temperature of the asphalt-rubber immediately after mixing shall be between 350°F (177°C) and 400°F (204°C). Reaction time shall start after all of the material for the batch has been mixed and the minimum reaction temperature of 350°F (177°C) has been achieved.

Prior to use, the viscosity of the asphalt-rubber shall be tested by the use of a rotational viscometer, which is to be furnished by the Contractor or supplier. The Contractor shall provide a qualified person to perform the testing.

717.3.2 Handling of Asphalt-Rubber: Once the asphalt-rubber has been mixed, it shall be kept thoroughly agitated during periods of use to prevent settling of the rubber particles. During the production of asphaltic concrete the temperature of the asphalt-rubber shall be maintained between 325°F (163°C) and 400°F (204°C). However, in no case shall the asphalt-rubber be held for more than 10 hours at these temperatures. It shall be allowed to cool to a temperature of 250°F (121°C) or less and held at that temperature for not more than four days. The process of cooling and reheating shall not be allowed more than one time for a batch of asphalt rubber binder.

For each load or batch of asphalt-rubber, the Contractor shall provide the Engineer with the following documentation:

- (A) The source, grade, amount and temperature of the asphalt cement prior to the addition of rubber.
- (B) The source and amount of rubber and the rubber content expressed as percent by the weight of the asphalt cement.
- (C) Times and dates of the rubber additions and resultant viscosity test.
- (D) A record of the temperature, with time and date reference for each load or batch. The record shall begin at the time of the addition of rubber and continue until the load or batch is completely used. Readings and recordings shall be made at every temperature change in excess of 52°F (11°C), and as needed to document other events which are significant to batch use and quality.

– End of Section –



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: May 5, 2010

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Proposed revision to Detail 110 – PLAN SYMBOLS

Case 10-11

PURPOSE: Update and expand graphic standards to have plans be more uniform among MAG agencies.

REVISION: Added line types and symbols, identify conduit material of underground utilities, require underground utility conduits greater than 12-inch diameter to be drawn to actual width.

Added line types:

- Right of way
- Property
- Easement
- Jurisdictional boundary
- Chain link fence
- Barbed wire fence
- Wood fence
- Block wall

Added symbols:

- Utility meter
- Monitory well
- Wood utility pole
- Steel utility pole
- Concrete utility pole
- Pole mounted light
- Signal pole
- Double post sign
- Cellular tower
- Pull box
- Video detection camera
- Traffic signal indication
- Left turn signal indication
- Right turn signal indication

SEWER CLEANOUT



FIRE HYDRANT



WATER METER



UTILITY MANHOLE



IRRIGATION STANDPIPE



UTILITY VALVE



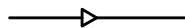
SEWER SERVICE CONNECTION



MONITORING WELL



REDUCER



WOOD UTILITY POLE



STEEL UTILITY POLE



CONCRETE UTILITY POLE



STREET LIGHT ON MAST ARM



POLE MOUNTED LIGHT



ELECTRIC, GAS METER



TRANSFORMER



DOWN GUY & ANCHOR



SURVEY MONUMENT



SURVEY MONUMENT IN HANDHOLE



MAIL BOX



SIGNAL POLE



SINGLE POST SIGN



DOUBLE POST SIGN



STREET NAME SIGN



VIDEO DETECTION CAMERA



PULL BOX



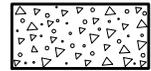
CELLULAR TOWER



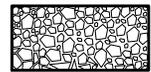
BITUMINOUS (SECTION)



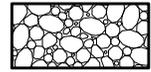
CONCRETE (SECTION)



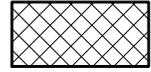
AGGREGATE BASE COURSE (SECTION)



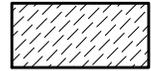
RIPRAP (PLAN & SECTION)



OBLITERATE PAVEMENT



TAPERED MILL



UNIFORM MILL



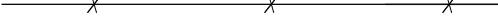
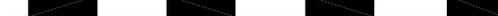
EARTH (SECTION)



NOTES:

1. PLAN SYMBOLS FOR EXISTING FEATURES ARE TO BE DASHED, GRAY SCALED, OR DRAWN USING THIN LINEWORK.

2. ADD LABELS TO PLAN SYMBOLS AS NEEDED FOR CLARITY.

SECTION LINE		CHAIN LINK FENCE	
R/W		BARBED WIRE FENCE	
EASEMENT		BLOCK WALL	
PROPERTY LINE (OPTION 1)		WOOD FENCE	
PROPERTY LINE (OPTION 2)		GAS LINE (12" & SMALLER)	 4" G (MATERIAL)
JURISDICTIONAL BOUNDARY (OPTION 1)		GAS LINE * (GREATER THAN 12")	 15" G (MATERIAL)
JURISDICTIONAL BOUNDARY (OPTION 2)		SEWER LINE (12" & SMALLER)	 8" S (MATERIAL)
ROADWAY CENTERLINE		SEWER LINE * (GREATER THAN 12")	 18" S (MATERIAL)
UNDERGROUND ELECTRIC BURIED CABLE	 E	NEW STORM DRAIN PIPE *	
UNDERGROUND ELECTRIC CONDUIT	 E (CONDUIT)	STORM DRAIN * (GREATER THAN 12")	 18" SD (MATERIAL)
UNDERGROUND ELECTRIC DUCT BANK	 E (DUCT BANK)	IRRIGATION LINE (12" & SMALLER)	 4" IRR (MATERIAL)
OVERHEAD ELECTRIC	 OHE	IRRIGATION LINE * (GREATER THAN 12")	 15" IRR (MATERIAL)
UNDERGROUND TELEPHONE LINE	 T	NEW IRRIGATION LINE *	
OVERHEAD TELEPHONE LINE	 OHT	WATER LINE (12" & SMALLER)	 4" W (MATERIAL)
FIBER OPTIC	 FO	WATER LINE * (GREATER THAN 12")	 36" W (MATERIAL)
CABLE TELEVISION	 TV		
OVERHEAD CABLE TELEVISION	 OHTV		
TELEPHONE DUCT BANK	 T (DUCT BANK)		

* SCALE TO ACTUAL WIDTH

DETAIL NO.

110-2



STANDARD DETAIL
ENGLISH

PLAN SYMBOLS

REVISED

01-01-2011

DETAIL NO.

110-2

SECTION 361
SHALLOW DEPTH FIBER OPTIC MICRO-CONDUIT INSTALLATION

361.1 DESCRIPTION:

This work shall consist of the installation of underground fiber optic micro-conduit telecommunications facilities within the public right-of-way.

361.2 TRENCHING, BACKFILL AND RESTORATION:

All work shall be done in accordance with Section _____

361.3 MICRO-CONDUIT INSTALLATION:

(A) "Trunk Lines" Cable providing telecommunications service by connecting regions or states or by connecting central offices within a metropolitan area. Such cable shall be installed as described below:

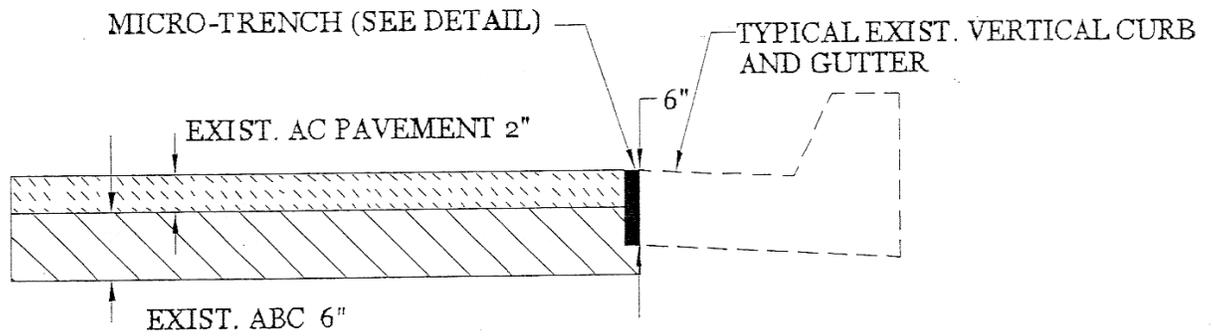
(B) Telecommunications cables other than "trunk lines" shall be installed as described below:

361.4 CABLE LOCATING (FIBER OPTIC):

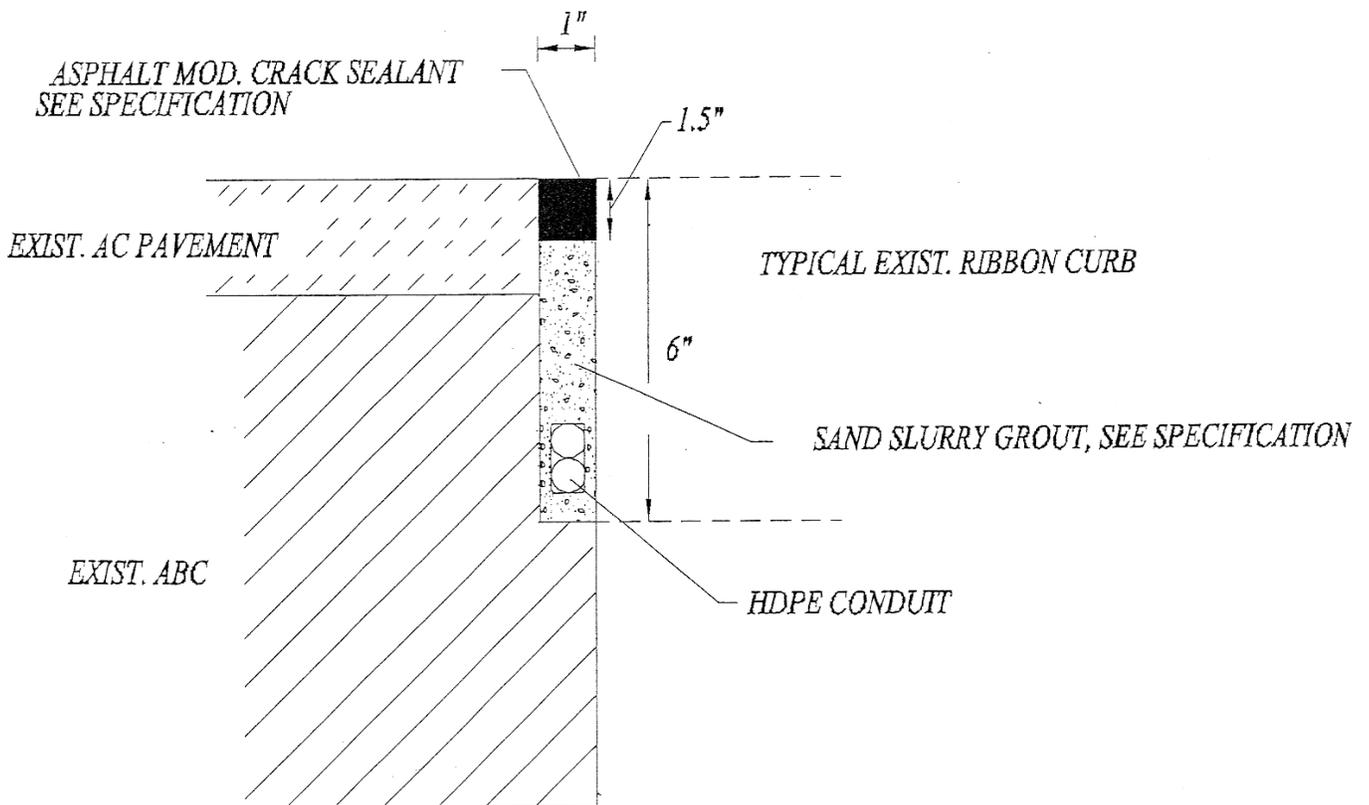
Tracing or locating wire shall be installed with the cable.

361.5 PAYMENT:

Payment will be made at the contract unit price bid per lineal foot.



TYPICAL SECTION AND TRENCH ALIGNMENT



MICRO-TRENCH DETAIL

Cano & Associates, Inc.

**ASPHALT PAVEMENT CRACK AND JOINT SEALING
For MICRO-TRENCH**

200.01 Description

All one inch wide trenches shall be cleaned out and filled with an approved asphalt-rubber or other asphalt modified sealer.

200.02 Material

The crack sealant shall be an asphalt-rubber or a polymer modified product, such as equal to Crafcro Polyflex Type 3 Sealant.

200.03 Material Specifications

TEST	RECOMMENDED SPEC.
Cone Penetration (ASTM D5329)	20-40
Resilience (ASTM D5329),	40% min.
Softening Point (ASTM D36),	210 F (99C) min.
Ductility, 77F (25C) (ASTM D113)	30 cm min.
Flexibility (ASTM D3111 Mod.)	Pass at 30F (-1C)
Flow 140F(60C) (ASTM D2669)	3 mm max.
Brookfield Viscosity, 400F(204C) (ASTM D2669)	100 Poise max.
Asphalt Compatibility (ASTM D5329)	Pass
Bitumen Content (ASTM D4)	60% min.
Tensile Adhesion (ASTM D5329)	400% min.
Safe Heating Temperature	400 F (204C)
Recommended Pour Temperature	380F (193C)

200.04 Crack Cleaning and Sealing

Clean the existing pavement surface of all loose material, dirt, or other deleterious substances by brooming, or other approved MAG methods. Seal 1-inch wide crack with an approved hot pour asphalt rubber sealant.

Cano & Associates, Inc.

**SAND SLURRY GROUT
FOR MICRO-TRENCH**

300.01 Description

This slurry grout is a controlled low strength material specification MAG Section 728 modified. The material is a mixture of portland cement, fined aggregate (mortar sand), flowability additives, and water. The slurry grout is a self compacting, flowable, cementitious material used to backfill or structural fill a 1-inch wide, 5 to 8 inches deep micro-trench.

300.02 Material

Portland Cement, shall conform to MAG Section 725.2
Fine aggregate (mortar sand), shall conform to MAG Section 701
Cement additives to meet flowability rate
Water, shall conform to Section 725.5

300.03 Material Specifications

A mix design shall be submitted with test data for the Engineer's approval prior to excavation.

Slurry Grout Material Requirements (Per 1 Sack)

CEMENT CONTENT, LBS/CU YD	SLUMP, INCHES	COMPRESSIVE STRENGTH AT 28 DAYS, PSI
94 +/- 5%	8 +/-1	150

300.04 Notes

1. The values specified in the table are for both mix design requirements and field production. The deviations are for production, testing, and sampling tolerances.
2. Slump shall be tested in accordance with ASTM C-143 and D-6103.
3. Compressive strength shall be tested in accordance with ASTM D-4832.
4. Sampling shall be in accordance with ASTM D-4832.
5. Unit weight shall be obtained by ASTM D-6023.
6. Temperature shall be taken in accordance with ASTM C-1064.
7. Cement content shall be tested in accordance with ASTM D-5982.

300.05 Mixing

Mixing shall conform to MAG Section 728.4

Subject: Revision to Subsection 618.2 & Section 765

Purpose: Revise RCP joint specification to be consistent from section to section and to be consistent with industry standards and as commonly accepted amongst agencies in the region.

Revision: Revise Subsection 618.2 per the attachments and remove Section 765.

Discussion: Subsection 618.2 contains a requirement for 60% by volume first grade rubber. This is inconsistent with the 50% requirement of Section 765 and industry standards. According to representatives of the two main concrete pipe gasket suppliers in the country (Hamilton Kent & Press-Seal), the 50% requirement is an industry standard. To meet a 60% requirement, a new rubber compound would need to be formulated at significant cost for negligible benefit. It's also unclear whether such a compound would meet the other physical performance requirements that the gaskets are expected to meet.

Section 765 makes reference to neoprene gaskets and o-ring gaskets. These are two requirements that are typically not applied to storm drainage projects. At one time, o-ring joints were normally required when watertight joints were desired. Now, however, step joints are common in applications requiring watertight joints. Attached is a copy of a typical step joint detail. This joint performs very similarly to an o-ring joint in most cases, and will meet the 13 psi hydrostatic test requirement of ASTM C 443. Neoprene gaskets are typically only needed where oil resistance is required. In the rare cases where oil resistance is actually required, the project plans and specifications can make such a reference.

Also, both 618.2 and 765 reference gasket material and performance requirements which are not typical and/or not consistent with national standards. A more straightforward approach would be to reference specifications such as ASTM C 443 (Standard Specifications for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets) which references ASTM C 1619 (Standard Specifications for Electrometric Seals for Joining Concrete Structures). This can be done in Subsection 618.2, and by referencing ASTM C 443 there is no longer a need for Section 765 because it would be redundant.

These proposed revisions to Subsection 618.2 and Section 765 are consistent with industry standards nationwide and with what is typically supplied to local projects and is accepted by agencies in the region through the submittal process.