

March 28, 2012

TO: Members of the MAG Standard Specifications and Details Committee

FROM: Troy Tobiasson, City of Goodyear, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday, April 4, 2012 at 1:30 p.m.
MAG Office, Suite 200 (Second Floor), Ironwood Room
302 North 1st Avenue, Phoenix

A meeting of the MAG Specifications and Details Committee has been scheduled for the time and place noted above. Members of the MAG Specifications and Details Committee may attend the meeting either in person, by videoconference or by telephone conference call. If you have any questions regarding the meeting, please contact Committee Chair Troy Tobiasson at 623-882-7979 or Gordon Tyus, MAG staff at 602-254-6300.

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

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

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

MAG Standard Specifications and Details Committee
TENTATIVE AGENDA
April 4, 2012

COMMITTEE ACTION REQUESTED

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| 1. <u>Call to Order and Introductions</u> | |
| 2. <u>Call to the Audience</u>
An opportunity is provided to the public to address the MAG Specifications and Details Committee on items that are not on the agenda that are within the jurisdiction of MAG, or non-action agenda items that are on the agenda for discussion or information only. Citizens will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the committee requests an exception to this limit. Please note that those wishing to comment on agenda items posted for action will be provided the opportunity at the time the item is heard. | 2. Information. |
| 3. <u>Approval of March 7, 2012, Meeting Minutes</u> | 3. Review and approve minutes of the March 7, 2012 meeting. |

Cases Carried Forward from 2011

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| 4. <u>Case 11-02:</u>
Add an Asphalt Pavement Safety Edge option to Detail 201. | 4. Information and discussion.
Sponsor: Bob Herz, Maricopa County |
| 5. <u>Case 11-03:</u>
Replace cadmium plated bolts referenced in Section 610.13 with zinc plated bolts as described in ASTM-B633. | 5. Information and discussion.
Sponsor: Paul Nebeker, Javier Setovich |
| 6. <u>Case 11-12:</u>
Modifications to Regulatory Requirements, MAG Section 107. | 6. Information and discussion.
Sponsor: Peter Kandaris |
| 7. <u>Case 11-14:</u>
Update Fire Hydrant Detail 360-1, and add Wet Barrel Option (360-2) and Details (360-3). | 7. Information and discussion.
Sponsor: Scott Zipprich |
| 8. <u>Case 11-16:</u>
Modify Section 415: Steel Flexible Metal Guardrail. | 8. Information and discussion.
Sponsor: Peter Kandaris |

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

New Cases for 2012

- | | |
|---|---|
| 11. <u>Case 12-01 Miscellaneous Corrections:</u>
A. Typographic corrections in Section 108.8
B. Typographic error in Section 108.9
C. Correct references in Detail 160. NEW | 11. Information and discussion. |
| 12. <u>Case 12-02:</u>
Modify Section 710 Asphalt Concrete to include low traffic gyration levels. | 12. Information, discussion and possible action.
Sponsor: Jeff Benedict, ARPA |
| 13. <u>Case 12-03:</u>
Revisions to Details 260-2: Driveway Entrances. | 13. Information and discussion.
Sponsor: Bob Herz, Maricopa County |
| 14. <u>Case 12-04:</u>
Revisions to Section 317: Asphalt Milling. | 14. Information and discussion.
Sponsor: Jeff Benedict, ARPA |
| 15. <u>Case 12-05:</u>
Modifications to Section 711: Asphalt Paving (Table 711-1). | 15. Information and discussion.
Sponsor: Jeff Benedict, ARPA |
| 16. <u>Other New and Potential Cases for 2012</u>
Discussion about new cases and that could be brought forward in 2012. | 16. Information and discussion. |

General Discussion

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|---|---------------------------------|
| 17. Plan for proactive review and revision of MAG specifications and details over a time period such as five years. | 17. Information and discussion. |
| 18. Managing and revising agency supplements and incorporating supplements into MAG. | 18. Information and discussion. |
| 19. <u>Staff Report</u> | 19. Information and discussion. |

20 Working Group Reports

A. Water/Sewer Working Group

Report on 3/20/2012 meeting.

B. Outside Right-of-Way Working Group

Report on 3/20/2012 meeting.

C. Asphalt Working Group

Report on 3/21/2012 meeting.

D. Materials Working Group

Report on 3/21/2012 meeting.

E. Concrete Working Group

Report on 3/21/2012 meeting.

20 Information and discussion.

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

B. Outside ROW Chair: Peter Kandaris, SRP

C. Asphalt Chair: Jeff Benedict, AGC

D. Materials Chair: Brian Gallamore, AGC

E. Concrete Chair: Jeff Hearne, ARPA

21. Open General Discussion

Members can report on any items of interest to the committee.

21. Information and discussion.

22. Request for Future Agenda Items

Topics or issues of interest that the Standard Specifications and Details Committee would like to have considered for discussion at a future meeting will be requested.

22. Information and discussion.

Adjournment

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

March 7, 2012

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

AGENCY MEMBERS

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

ADVISORY MEMBERS

Jeff Benedict, ARPA	Jeff Hearne, ARPA
* Tony Braun, NUCA	Peter Kandaris, SRP
* Kwigs Bowen, NUCA	Paul R. Nebeker, Independent
Brian Gallimore, AGC	
* Adrian Green, AGC	

MAG ADMINISTRATIVE STAFF

Gordon Tyus

* Members not attending or represented by proxy.

GUESTS/VISITORS

Jerry Copeland, Gerald R. Copeland, P.E.
Jason Jackson, Oldcastle Precast
Doug Laquey, Fisher Industries
Jerre Mills, Regional Pavement Maintenance
Gary Wallenberg, TetraTech

1. Call to Order

Chairman Troy Tobiasson called the meeting to order at 1:30 p.m.

2. Call to the Audience

No public comment was provided.

3. Approval of Minutes

The members reviewed the February 1, 2012 meeting minutes. Jason Mahkovtz introduced a motion to accept the minutes as written. Tom Wilhite seconded the motion. A voice vote of all ayes and no nays was recorded.

Review of 2011 Carry Forward Cases

4. Case 11-02 – Safety Edge Detail

Add an Asphalt Pavement Safety Edge option to Detail 201. Bob Herz handed out a revised detail drawing dated 3/2012 that added notes and titles to the overlay detail drawings. He said they still haven't built it yet, so he was not sure how will they work. A test project is planned for this summer. Brian Gallimore asked about the saw cut note on the Type B detail. Mr. Herz said the saw cut was for roads that had an irregular edge, in order to straighten it before adding the safety edge overlay. Troy Tobiasson asked him to clarify the use of each type. Bob Herz said the Type A detail is for overlaying an existing road that has the Maricopa thickened edge. Type B is for roads without the thickened edge, which may have an irregular or raveled edge. Type C was for new construction, in which a typical Maricopa thickened edge base course is finished with the new safety edge course. Mr. Tobiasson asked to have titles added to the drawing to clarify the types. Rod Ramos asked if it mattered how Type B was cut. Brian Gallimore said he would discuss options to trim the edge, such as with the blade or milling in addition to saw cutting, with working group members. Mr. Herz said he was open to options as long as you can get a vertical straight line. Mark asked why there was information about pay items for the shoulder on the drawing. Greg Crossman suggested removing it since not all agencies have it as a separate pay item. Tom Wilhite asked if the text in Section 321 matched the detail. Mr. Herz said that the section is compatible with the drawing.

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

Replace cadmium plated bolts referenced in Section 610.13 with zinc plated bolts as described in ASTM-B633. Paul Nebeker said that this case was discussed at the Water/Sewer working group, and that Javier Setovich of Peoria volunteered to work on updating this section. Jim Badowich said the case was looking at other things that may need to change, such as the grade of the bolts. The goal is to specify materials used today, to make zinc the default, but also have other options such as stainless steel used by Phoenix. Gordon Tyus said notes from the Water/Sewer meeting in the packet summarize on the group's discussion.

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

Add references to Arizona native plant requirements and update references to state statutes. Mr. Kandarlis said this case was discussed at the last outside right-of-way meeting. Since contractors must follow all state statutes, the revised version removed references to all specific laws, and made more general reference to follow all laws, ordinances, regulations, orders and decrees. The section has been reduced to two paragraphs. Warren White said his agency would like to review the change. Mr. Kandarlis said it is pretty consistent with most city agreements.

7. Case 11-14: Update Fire Hydrant Details

Update Detail 360-1, and add Wet Barrel Option (360-2) and Details (360-3). Scott Zipprich said he did not have updated details yet, but that the case was discussed during the water/sewer meeting. He did not receive any comments from the committee. Mr. Zipprich said he planned to update the details based on red-lines and comments from the working group, bring them for review at the next Water/Sewer meeting, and then within a month or two have final drawings ready for review by the full committee, and a possible vote soon after that.

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

Update Section 415 based on the Maricopa County Supplement. Reference New Details. Peter Kandarlis said the latest version references MCDOT guardrail details instead of ADOT details. Basically, it is now pretty much the MCDOT 415 supplement. He noted that it references MAG Detail 135-4, which has been removed so Mr. Kandarlis suggested referencing the MUTCD instead. Warren White asked about end treatments. Mr. Kandarlis said they are not included, but have never been in MAG. Mr. Herz said they have a single source approved, and specifications in supplemental Section 416. Mr. Kandarlis said the end treatments need to be specified by the agency (this note could be added to the specifications), and suggested a possible new future case if they were to be included in the MAG specs. Rod Ramos asked about the curb shown on Detail 3002. Mr. Herz said it has not been a problem for them, and is used to help direct water run-off.

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

Add language in Section 350.2 for utility removal, and payment requirements. Mr. Kandarlis said he added reference to the blue stake requirements, and added language to clarify abandonments must be shown on plans; otherwise existing utilities must be removed. He asked for review and additional comments.

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

Incorporate City of Phoenix supplement 623 into the MAG standards. Syd Anderson said he missed the last working group meeting. Jim Badowich said at the working group meeting, they discussed the differences between flexible and rigid pipe, and recommended having separate backfill requirements for each. Mr. Anderson said he preferred just one, stating that they have used the slurry technique for both types of pipe, and it has worked well. Jami Erickson said that you may have a separate issue about where you place the pipe, since flexible pipe is designed to allow a certain amount of deflection, it may not be appropriate under roadway or structures. The term mainline pipe could refer to both pipe under the street or in landscaped areas. Mr. Anderson said there were different requirements depending on if it was outside the roadway. He said this issue began with failure of metal pipe, and since using slurry, they have not had settlement problems. He clarified that for concrete pipe the slurry was only required to the springline. Peter Kandarlis said there are different design methods for installing rigid and flexible pipe. Paul Nebeker said the flexible pipe companies don't have data on the use of slurry around their pipe. He also noted that the pipe ribs themselves allow for infiltration or water. Greg Crossman said using the ASTM specifications a certain amount of deflection is allowed. Jami Erickson said she did not know if using slurry could damage the structure of flexible pipe. Jim Badowich said Bill Davis was going to provide a presentation at the next Water/Sewer working group meeting of their recommended installation procedures.

11. Case 11-30: Update Section 702: Base Material and Section 310 Untreated Base Course

Update Section 702: Base Material. Revise for current standards. Brian Gallimore handed out a final revised version of Section 310 that included revisions based on comments received from Glendale. The case also included revisions to Section 702. Mr. Gallimore said he felt it was ready for a vote. Syd Anderson asked if the wet or dry test method was used. The sponsors replied that Method A, specified in table 702 is the wet method. Mr. Gallimore moved, and Syd Anderson seconded a motion to approved Case 11-30. A voice vote of agency members was taken. The motion passed, 12 yes, 0 no, 0 abstaining, 4 not present.

New 2012 Cases

12. Case 12-01: Miscellaneous Corrections

Remove extra space Section 108.9. Bob Draper noted that a typographic error in the new edition of the specifications changed the word “incompleted” to “in completed” which also changed the meaning. This correction was added to the case as part B.

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

Modify Section 710 Asphalt Concrete to include low traffic gyration level specifications. Jeff Benedict said a new handout changed one of the referenced test methods based on feedback from suppliers at the last Asphalt working group meeting. Under mix design requirements,

part 6, the reference to AASHTO T-28 was changed to ASTM D4867 for dry tensile strength. This reference would also be updated under part 6 in Table 710-3 and 710-4 as well. He said this testing method was faster, because it didn't require the freeze/thaw portion of the test, and easier to replicate for retesting. Warren White also noted there was a typo, in which the word "traffic" needed to be spelled correctly. Mr. Benedict said he would be making changes, and proposed to vote on the case at the next meeting.

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

Update Sidewalk Widths to 4' in Detail 250-2 Driveway Entrances. Bob Herz provided an updated drawing with additional redlines to reduce the amount of concrete paving, and still meet the ADA four foot width requirement. Tom Wilhite suggested making it more compact by making the travel lane parallel to the slope edge line of the ramp. Bob Draper agreed he would like it more compact. Troy Tobiasson said the constructability of the detail should be considered, such as where to place the expansion joints, etc. Syd Anderson says Phoenix has a detail that he will bring to the next meeting. Jim Badowich asked members to check their supplements and bring them in so they can be incorporated in the changed detail. Rod Ramos said Scottsdale has a detail that adds 5' to each side of the driveway entrance, and they have two different options.

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

Revise Asphalt Milling to address dust control measures on milled surfaces open to traffic. Jeff Benedict introduced this new case based on previous discussions about Phoenix using a tack coat to reduce dust on milled surfaces for a short period before the new surface is installed. Language was added to apply a tack coat per Section 329. Syd Anderson said Phoenix used half the normal amount of tack coat on the milled surface to control dust on a street nearby an ADEQ air quality monitor, then applied the second coating prior to final asphalt paving. Chair Tobiasson asked what a "short" period of time was. Mr. Benedict said typically the milling takes longer than paving, so there are times when the paving may not be completed the same day, but typically is finished the following day. Rod Ramos asked if this included edge milling. Mr. Anderson said anything that can cause dust to be airborne can be a problem, and can be helped with this method. Mr. Ramos asked about using it on residential streets. Syd Anderson didn't recommend it, and said Phoenix used it on arterial streets that needed to be opened to traffic. There was also discussion about using water to keep the dust down, but Syd Anderson said they tried that, and found that it dried too quickly in the summer to successfully abate the dust problems. Jim Badowich worried that there may be problems of trackout onto residential driveways. He also suggested making a separate section. Mr. Badowich also believed that it should not be a separate pay item, but included in the bid price, so it would be up to the contractor to have the necessary tack material available. He said he would send comments in writing to the sponsors.

16. Other Potential Cases

Chair Tobiasson asked if members had any new or potential cases. Scott Zipprich brought up the topic of providing ramps at the vertical curbs at T-Intersections. He said they have used

Phoenix detail 1244 Driveway/Sidewalk Ramp Combo, but asked about the placement of the detectable warning domes on midblock ramp details. He also commented that adding the ramps can be difficult because they can affect driveway entrances, especially on narrow lots. He also noted that to get the recommended slope you may need six foot ramps and another five feet behind them for the landing. One suggestion was to require a pedestrian access plan prior to approving a plat, so these issues would be taken into consideration prior to finalizing lot lines. The ADA requirements may affect the development layout.

Tom Wilhite asked about options where sidewalk walls or buildings are next to the sidewalk. Warren White said Chandler had a detail the depressed the sidewalk instead of moving the path behind the driveway opening. Members suggested making a new case for that type of detail since the alley entrance details have been removed from MAG.

17. Working Group Reports

Chair Tobiasson asked for reports from the working groups.

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

Jim Badowich said the group met on February 20th, and that there was a standing room only turnout. Much of the discussion was about the cases discussed earlier in the meeting, and was summarized in the meeting notes included in the packet. In addition to the current cases, he said Scott Zipprich has developed a set of cast in place manhole base specifications for Buckeye, which could be case to add as an option in MAG. He reminded members of the presentation Bill Davis was preparing for flexible pipe installation. The next meeting is scheduled for Tuesday, March 20th at 1:30 p.m. at the MAG office.

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

Peter Kandaris said they met after the water/sewer group meeting where they discussed revisions to the three cases previously reviewed earlier in the meeting. He said he would like to begin working on new cases as well as getting back to it's original purpose of reviewing specs for outside the right-of-way. The next meeting will follow the Water/Sewer group on March 20th.

c. **Asphalt Working Group**

Jeff Benedict said the group worked on the cases previously described. In addition they have begun developing a RAP specification they hope to bring forward this year. They have also been reviewing Section 321 for determining compaction requirements, and also possibly a new specification for Warm Mix may be possible. The next meeting is scheduled for March 21st at Noon at the ARPA office. Lunch will be provided.

d. **Materials Working Group**

Brian Gallimore had left the meeting, but Mr. Benedict said they would follow the Asphalt working group's next meeting. Notes from the February meeting were in the packet.

e. **Concrete Working Group**

Jeff Hearne said notes from the February 20th meeting were included in the agenda packet that list sections that are under review. Some cases may go into next year. He said the masonry guild has agreed to review the sections on block and masonry work, and that an industry group was working on developing specifications for pervious concrete construction. They also will be reviewing technician certification requirements. Mr. Hearne did not expect a case on this until sometime next year. The next meeting is scheduled for March 21st at 1:30 p.m. at the ARPA office.

18. Staff Reports

Gordon Tyus said MAG hosted an ADA workshop in the Ironwood room last Wednesday. Speakers from the FHWA and ADOT presented a general overview of ADA requirements. He said several members of the committee attended. Scott Zipprich said it was good, but was hoping for more clear direction. Greg Crossman agreed. Mr. Tobiasson said it they summarized a two day workshop into a couple hours. He mentioned that a representative from Peoria said they had developed dual ramp details, and were planning to submit them as a case to MAG in the future.

19. Open General Discussion

Tom Wilhite asked to add an agenda item for a future meeting to discuss a five-year work plan to review the MAG specifications. He said the discussion at the last meeting of a check list to determine what sections have been updated or reviewed, could be expanded to create a plan on systematically reviewing the specifications.

Scott Zipprich said he would like to make it easier for users to send in their corrections or comments on the MAG specification. Mr. Tyus said the MAG website does allow users to send feedback on any page, and that he did receive comments in this manner, that have been brought forward to the chair and committee as issues, but that a more descriptive link could be added. Others commented that in the past an engineering association did have an advisory member on the committee. Mr. Kandarlis suggested that he may be able to fill that roll, since he soon will not be SRP's representative.

20. Adjournment:

Mr. Tobiasson adjourned the meeting at 3:40 p.m.

2012 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

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

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE	
	CARRY FORWARD CASES FROM 2011						
11-02	Case 11-02: Add an Asphalt Pavement Safety Edge option to Detail 201.	MCDOT	Bob Herz	01/05/2011 03/07/2012		0 0 0	Yes No Abstain
11-03	Case 11-03: Replace cadmium plated bolts referenced in Section 610.13 with zinc plated bolts as described in ASTM-B633.	Peoria	Paul Nebeker/ Javier Setovich	02/02/2011 07/13/2011		0 0 0	Yes No Abstain
11-12	Case 11-12: Modifications to Regulatory Requirements, MAG 107.	OROW WG/ SRP	Peter Kandaris	05/04/2011 02/23/2012		0 0 0	Yes No Abstain
11-14	Case 11-14: Update Fire Hydrant Detail 360-1, and add Wet Barrel Option (360-2) and Details (360-3).	Water/Sewer WG/ Buckeye	Scott Zipprich	07/13/2011 01/04/2012		0 0 0	Yes No Abstain
11-16	Case 11-16: Modify Section 415: Steel Flexible Metal Guardrail.	OROW WG/ SRP	Peter Kandaris	07/13/2011 02/23/2012		0 0 0	Yes No Abstain
11-18	Case 11-18: Update Section 350: Removal of Existing Improvements.	OROW WG/ SRP	Peter Kandaris	07/13/2011 02/23/2012		0 0 0	Yes No Abstain
11-21	Case 11-21: Add new Section 623: Special Bedding for Mainline Storm Drain Pipe.	Phoenix	Syd Anderson	07/13/2011 01/04/2012		0 0 0	Yes No Abstain
11-30	Case 11-30: Update Section 702: Base Material. Moved all ABC material to Section 310. Revise Section 310: Untreated Base Course. Revise for current standards. Update all references to Section 702. (Combined with previous Case 11-35.)	AGC/ Materials WG	Brian Gallimore	07/13/2011 03/07/2012	03/07/2012	12 0 0	Yes No Abstain

2012 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

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CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE	
	NEW CASES FOR 2012						
12-01	Case 12-01: Miscellaneous Corrections A. Section 108 typographic errors B. Remove space in Section 108.9 C. Correct references in Detail 160	Goodyear/ Mesa	Troy Tobaisson/ Bob Draper	02/01/2012 03/07/2012		0 0 0	Yes No Abstain
12-02	Case 12-02: Modify Section 710 Asphalt Concrete to include low traffic gyration levels.	ARPA/ Asphalt WG	Jeff Benedict	02/01/2012 03/12/2012	04/04/2012	0 0 0	Yes No Abstain
12-03	Case 12-03: Revisions to Details 260-2: Driveway Entrances	MCDOT	Bob Herz	02/01/2012 03/08/2012		0 0 0	Yes No Abstain
12-04	Case 12-04: Revisions to Section 317: Asphalt Milling	ARPA/ Asphalt WG	Jeff Benedict	02/28/2012		0 0 0	Yes No Abstain
12-05	Case 12-05: Revisions to Section 711: Asphalt Paving (Table 711-1)	ARPA/ Asphalt WG	Jeff Benedict	04/04/2012		0 0 0	Yes No Abstain

MAG Specification & Detail Committee VOTING SUMMARY for 2012

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	Youngtown	Voting Summary Y-N-A-NP
11-02	Add an Asphalt Pavement Safety Edge option to Detail 201.																		0-0-0-0
11-03	Replace cadmium plated bolts referenced in Section 610.13 with zinc plated bolts as described in ASTM-B633.																		0-0-0-0
11-12	Modifications to Regulatory Requirements, MAG 107.																		0-0-0-0
11-14	Update Fire Hydrant Detail 360, and Add Wet Barrel Option and Details.																		0-0-0-0
11-16	Modify Section 415: Steel Flexible Metal Guardrail.																		0-0-0-0
11-18	Update Section 350: Removal of Existing Improvements.																		0-0-0-0
11-21	Add new Section 623: Special Bedding for Mainline Storm Drain Pipe.																		0-0-0-0
11-30	Update Section 702: Base Material. Moved all ABC material to Section 310. Revise Section 310: Untreated Base Course. Revise for current standards.	03/07/12	Y	Y	Y	—	Y	Y	Y	Y	Y	—	Y	—	Y	Y	Y	—	12-0-0-4
12-01	Misc. Corrections: A. Section 108 typographic errors B. Remove extra space in Section 108.9 C. Correct references in Detail 160																		0-0-0-0

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 2012

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	Youngtown	Voting Summary Y-N-A-NP
12-02	Modify Section 710 Asphalt Concrete to include low traffic gyration levels.	Scheduled 04/04/12																	0-0-0-0
12-03	Revisions to Details 260-2: Driveway Entrances																		0-0-0-0
12-04	Revisions to Section 317: Asphalt Milling																		0-0-0-0
12-05	Revisions to Section 711: Asphalt Paving (Table 711-1)																		0-0-0-0

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

*: Indicates changes made to proposal prior to vote.

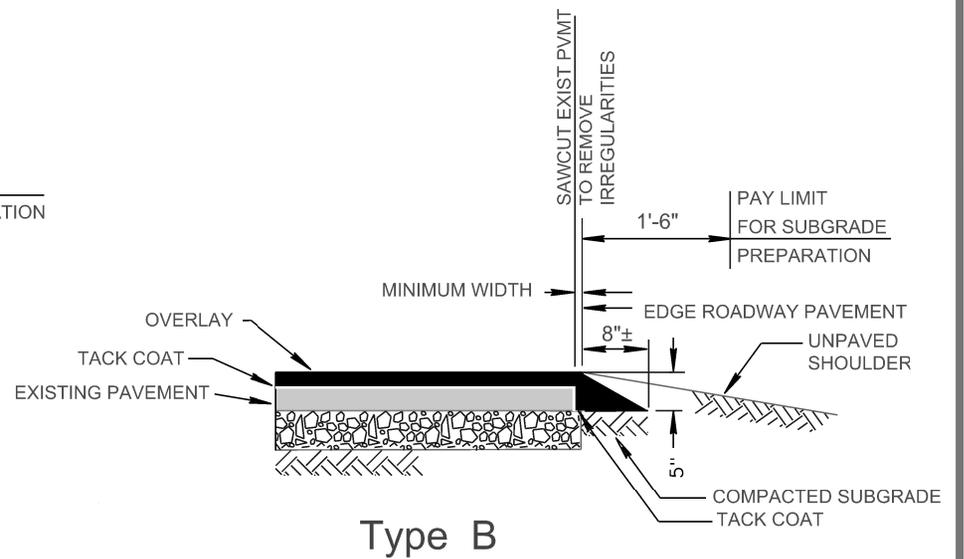
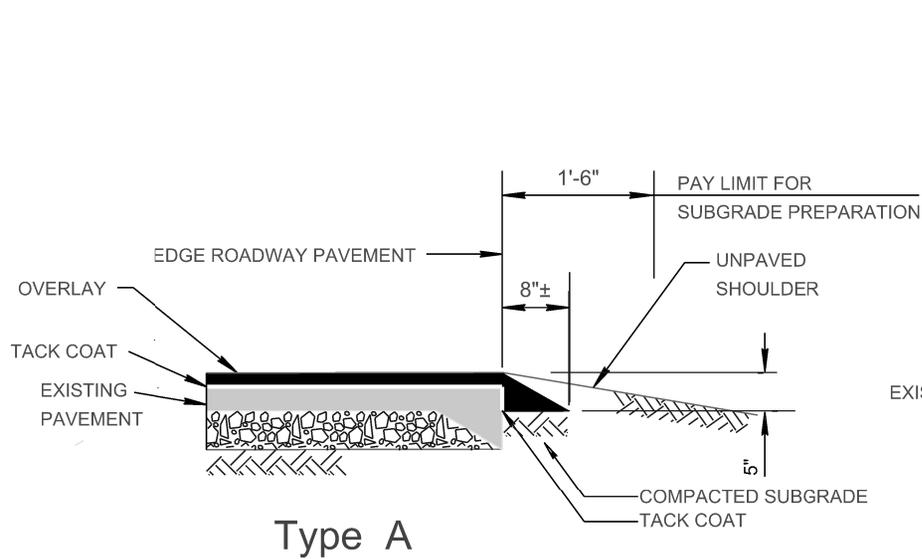
Add the following to Section 321:

321.8.8 Safety Edge: Prior to commencing paving operations that require construction of a safety edge, the Contractor shall submit for the Engineer's approval construction procedures to be used for placement and compaction of the safety edge.

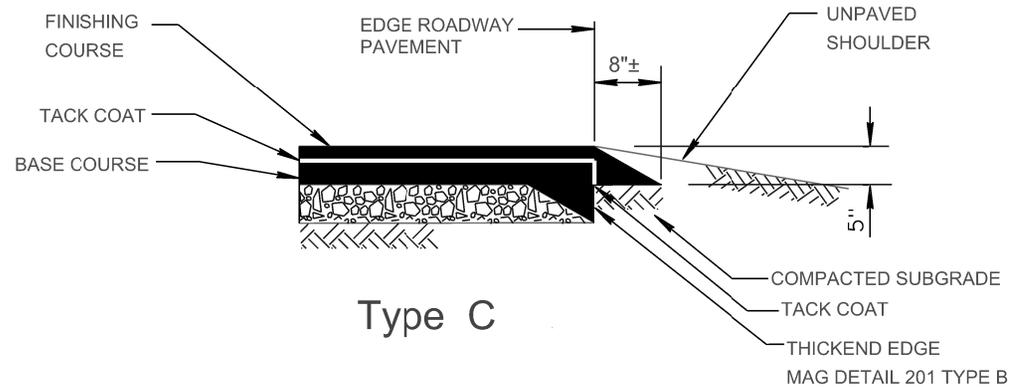
The finished safety edge slope shall be planar and form a $30^{\circ} \pm 5^{\circ}$ angle with the horizontal plane. Due to the required final edge slope of the safety edge, compaction as required by sections 321.8.4 and 321.10 may not be attainable. When the approved procedures for placement and compaction of the safety edge are followed, the safety edge compaction shall be considered acceptable.

When the depth of the safety edge extends two inches or more below the bottom of the asphalt pavement base course, the portion below the base course shall be placed and compacted as a separate construction operation. The remaining portions of the safety edge shall be constructed as part of each successive asphalt lift (base, intermediate, and finishing courses). Construction of the base course may immediately follow compaction of the lower portion of the safety edge.

When the depth of the safety edge extends less than two inches below the bottom of the asphalt pavement base course, the portion below the base course may be placed and compacted with the base course in a single operation. The remaining portions of the safety edge shall be constructed as part of each successive asphalt lift (intermediate and finishing courses).



OVERLAY



NEW OR WIDENED PAVEMENT

ASPHALT PAVEMENT
SAFETY EDGE

DATE:
3/2012

CASE
11-02

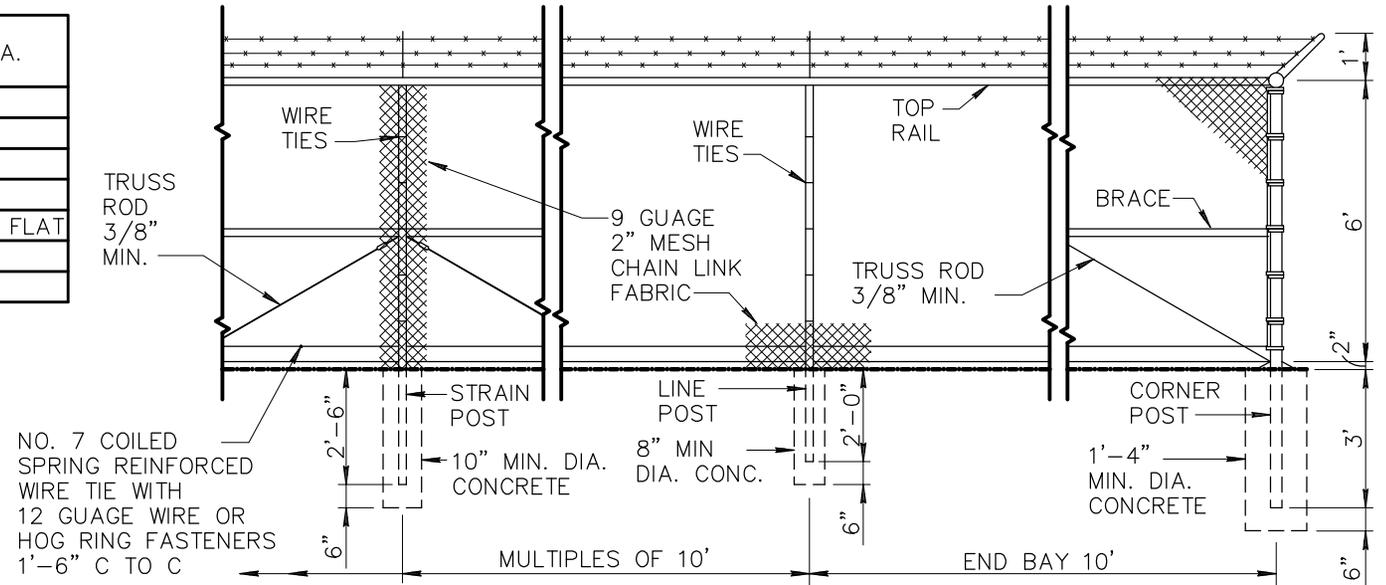
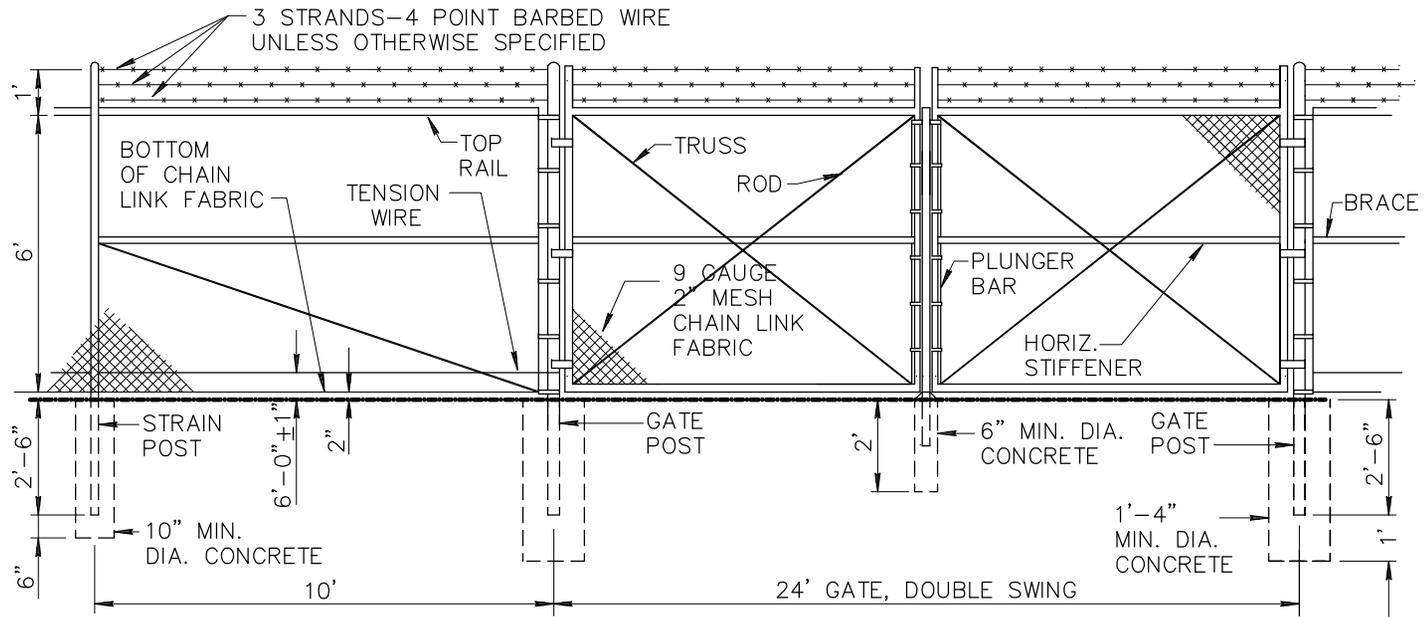
NOTES

1. ALL CONCRETE SHALL BE CLASS 'C' PER SECT. 725.
2. FITTINGS NOT SPECIFICALLY DETAILED SHALL BE HEAVY DUTY DESIGN.
3. STRAIN POSTS SHALL BE SPACED AT 500' MAXIMUM SPACING.
4. BOTH CORNER AND STRAIN POSTS SHALL HAVE STRAIN PANELS.
5. ALL POSTS SHALL BE CAPPED.
6. MEMBER SIZES SHALL BE THE FOLLOWING:

MEMBER	AISC SIZE	OUTSIDE DIA.
CORNER POST	2-1/2"	2.875"
LINE POST	1-1/2"	1.900"
STRAIN POST	1-1/2"	1.900"
BRACE	1-1/4"	1.666"
STRETCH BAR	3/16"x3/4" FLAT	3/16"x3/4" FLAT
GATE POST	3-1/2"	4.000"
TOP RAIL	1-1/4"	1.666"

7. CONSTRUCTION AND MATERIALS SHALL CONFORM TO SECT. 420 AND 722, RESPECTIVELY. SEE TABLE 722 FOR WEIGHTS OF MEMBERS.

Should refer to Section 772 and Table 772-1.



DATE: March 8, 2012

TO: MAG Specifications and Details Committee Members

FROM: Jeff Benedict, Valero; AGC/ARPA Advisory Member
Asphalt Working Group

RE: **MAG 710: Asphalt Concrete Revisions**

Purpose: MAG 710 needs to be updated to include a provision for utilization of gyratory asphalt mixes in low traffic (residential) situations. 2008 and previous versions of MAG 710 had this provision included but it was not incorporated in the 2009 version or thereafter. Low traffic gyratory mix designs will be prepared using specimens compacted to 160 gyrations, N_{max} for high volume traffic situations, and mathematically back-calculated to determine the relative density for a reduced number of Gyrations. This procedure is currently used by the City of Glendale for their low volume traffic asphalt concrete.

Additionally, the test procedure for Tensile Strength Ratio (TSR) testing should be changed from AASHTO T 283 to ASTM D 4867. The AASHTO procedure was modified in 2007 and included significant changes. In the previous version there was an optional freeze/thaw cycle that is now mandated in the current version. This requires MAG 710 to include language that the freeze/thaw cycle be skipped. The ASTM procedure does not include the freeze/thaw cycle so the additional language would not be necessary and the procedure could be performed as written. The AASHTO version also now includes 2 different curing/aging steps that add 2 days to the duration of the test. ASTM D 4867 is a much simpler, cleaner and quicker version of the same test. Instead of four days, the testing could be completed in two. ASTM also includes language for sample preparation when dry admix (lime or cement) is added to moist aggregates (wet treating), as is the case on most of the hot plants in the valley. Wet treating is also the local industry standard for performing lab mixed TSR's for hot plants with pugmills. There is nothing in AASHTO that mandates or even allows for wet treating the aggregates. The ASTM specimen air void range is 6.0% to 8.0% with initial saturation between 55% and 80%, instead of air voids between 6.5% and 7.5% and initial saturation of 70% and 80% for AASHTO T 283. That can make a huge difference in reducing the trial and error time trying to achieve the tighter requirements of AASHTO T 283. This will relieve some of the burden from the laboratory performing the test while still allowing for a well-documented method for determining the potential for moisture sensitivity of an asphalt mixture.

- Revisions:
- a) Language was added to Section 710.3.1(5) stating that either gyratory or Marshall mix design method may be used for both high and low traffic conditions.
 - b) The reference to AASHTO T 283 was changed to ASTM D 4867 in Section 710.3.1(6).
 - c) The test procedure for Tensile Strength Ratio and Dry Tensile Strength in Tables 710-3 and 710-4 was changed from AASHTO T 283 to ASTM D 4867. A small formatting change was made to the bottom of Table 710-4 to evenly distribute the column spacing.
 - d) Language was added in Section 710.3.2.2 to describe how the specimens are to be compacted and then volumetrics for other gyration levels calculated.
 - e) The test procedure for moisture sensitivity testing in Section 710.3.2.3 was changed from AASHTO T 283 to ASTM D 4867. The comment regarding the freeze/thaw cycle was removed since ASTM D 4867 does not include a freeze/thaw cycle.

ASPHALT CONCRETE

710.1 GENERAL:

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

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

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

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

TABLE 710-1		
RECOMMENDED MINIMUM LIFT THICKNESS'S for ASPHALT CONCRETE MIXES		
Asphalt Concrete Mix Designation (inches)	Minimum Lift Thickness Marshall Mixes	Minimum Lift Thickness Gyratory Mixes
3/8"	1.0 inches	1.5 inches
1/2"	1.5 inches	2.0 inches
3/4"	2.5 inches	3.0 inches
Base	3.0 inches	n/a

710.2 MATERIAL:

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

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

Coarse aggregate for hot mix asphalt is material retained on or above the No. 4 sieve and Fine aggregate is material passing the No. 4 sieve. Aggregates shall be relatively free of deleterious materials, clay balls, and adhering films or other material that

prevent coating with the asphalt binder. Coarse and Fine aggregates shall conform to the following requirements when tested in accordance with the applicable test methods.

TABLE 710-2 COARSE/FINE AGGREGATE REQUIREMENTS			
Characteristics	Test Method	Low Traffic	High Traffic
Fractured Faces, % (Coarse Aggregate Only)	Arizona 212	75, 1 or more	85, 1 or more 80, 2 or more
Uncompacted Voids, % Min.	AASHTO T-304, Method A	42	45
Flat & Elongated Pieces, % 5:1 Ratio	ASTM D ₄ 791	10.0 Max.	10.0 Max.
Sand Equivalent, %	AASHTO T-176	50 Min.	50 Min.
Plasticity Index	AASHTO T-90	Non-plastic	Non-plastic
L.A. Abrasion, % Loss	AASHTO T-96	9 max. @ 100 Rev. 40 max. @ 500 Rev.	9 max. @ 100 Rev. 40 max. @ 500 Rev.
Combined Bulk Specific Gravity	AI MS-2/SP-2	2.35 – 2.85	2.35 – 2.85
Combined Water Absorption	AI MS-2/SP-2	0 – 2.5%	0 – 2.5%

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

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

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

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

710.3 MIX DESIGN REQUIREMENTS:

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

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

- (1) The name and address of the testing organization and the person responsible for the mix design report.
- (2) The mix plant identification and/or location, as well as the supplier or producer name.
- (3) A description of all products that are incorporated in the asphalt concrete along with the sources of all products, including admixtures and asphalt binder, and their method of introduction.
- (4) The supplier and grade of asphalt binder, the source and type of mineral aggregate, and the percentage of asphalt binder and mineral admixture used.
- (5) The mix design report, whether Gyratory or Marshall, shall state the traffic condition (low or high traffic) and size designation. ~~In all cases Gyratory based mix designs shall be designated as high traffic mixes. Marshall based mix design shall be designated either low or high traffic mixes.~~
- (6) The results of all testing, determinations, etc., such as: specific gravity and gradation of each component, water absorption, sand equivalent, loss on abrasion, fractured coarse aggregate particles, Tensile Strength Ratio (~~AASHTO T-283~~ASTM D 4867), Marshall stability and flow, asphalt absorption, percent air voids, voids in mineral aggregate, and bulk density. Historical abrasion values may be supplied on existing sources. The submittal should include a plot of the gradation on the Federal Highway Administration's 0.45 Power Gradation Chart, plots of the compaction curves and the results of moisture sensitivity testing.
- (7) The laboratory mixing and compaction temperature ranges for the supplier and grade of asphalt binder used within the mix design.
- (8) A specific recommendation for design asphalt binder content and any limiting conditions that may be associated with the use of the design, such as minimum percentages of crushed or washed fine aggregate.
- (9) The supplier's product code, the laboratory Engineer's seal (signed and dated), and the date the design was performed.

The mix design shall be submitted to the Agency or Engineer by the Contractor/Supplier for which it was developed as part of his project submittals. Once the mix design has been approved by the agency or Engineer, the Contractor and/or his supplier shall not change plants nor utilize additional mixing plants without prior approval of the Engineer. Any changes in the plant operation, the producer's pit, the asphalt binder, including modifiers in the asphalt binder, or any other item that will cause an adjustment in the mix, shall be justification for a new mix design to be submitted.

710.3.2 Mix Design Criteria: The mix design shall be performed by one of two methods, Marshall Mix Design or Gyratory Mix Design. The method shall be specified on the plans, special provisions, or by the Engineer. A minimum of 4 points will be used to establish the mix design results. The oven aging period for both Marshall and Gyratory mix design samples shall be 2 hours.

710.3.2.1 Marshall Mix Design: The Marshall Mix Design shall be performed in accordance with the requirements of the latest edition of the Asphalt Institute's Manual, MS-2 "Mix Design Methods for Asphalt Concrete." The mix shall utilize the compactive effort of 75 blows per side of specimen. The mix shall comply with the criteria in Table [710-3](#).

TABLE 710-3					
MARSHALL MIX DESIGN CRITERIA					
Criteria	Requirements				Designated Test
	3/8" Mix	1/2" Mix	3/4" Mix	Base Mix	Method
1. Voids in Mineral Aggregate: %, min	15.0	14.0	13.0	12.0	AI MS-2
2. Effective Voids: %, Range	4.0 ± 0.2	4.0 ± 0.2	4.0 ± 0.2	4.0 ± 0.2	AI MS-2
3. Absorbed Asphalt: %, Range *	0 - 1.0	0 - 1.0	0 - 1.0	0 - 1.0	AI MS-2
4. Dust to Eff. Asphalt Ratio, Range **	0.6 - 1.4	0.6 - 1.4	0.6 - 1.4	0.6 - 1.4	AI MS-2
5. Tensile Strength Ratio: %, Min.	65	65	65	65	AASHTO T-283 ASTM D 4867
6. Dry Tensile Strength: psi, Min.	100	100	100	100	AASHTO T-283 ASTM D 4867
7. Stability: pounds, Minimum	2,000	2,500	2,500	3000	AASHTO T-245
8. Flow: 0.01-inch, Range	8 - 16	8 - 16	8 - 16	8 - 16	AASHTO T-245
9. Mineral Aggregate Grading Limits					AASHTO T-27
	Percent Passing with Admix				
Sieve Size	3/8 inch Mix	1/2 inch Mix	3/4 inch Mix	Base Mix	
1-1/4 inch				100	
1 inch			100	90-100	
3/4 inch		100	90 - 100	85-95	
1/2 inch	100	85 - 100	---	---	
3/8 inch	90-100	62 - 85	62 - 77	57-72	
No. 8	45-60	40 - 50	35 - 47	33-43	
No. 40	10-22	10 - 20	10 - 20	9-18	
No. 200	2.0 - 10.0	2.0 - 10.0	2.0 - 8.0	1.0 - 7.0	

* Unless otherwise approved by the Engineer.

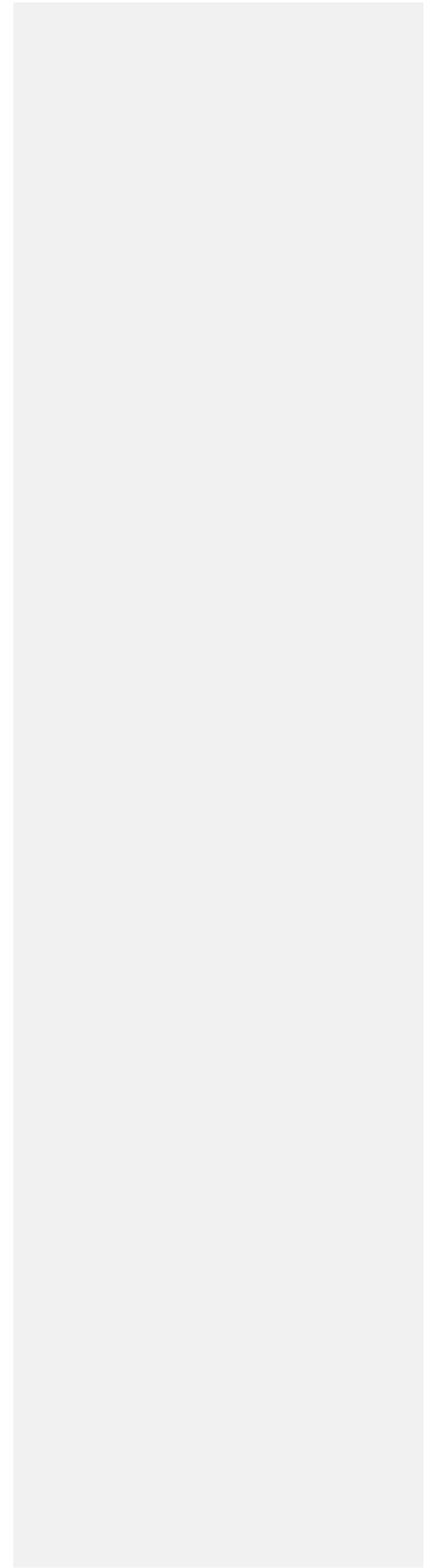
** The ratio of the mix design composite gradation target for the No. 200 sieve, including admixture, to the effective asphalt content shall be within the indicated range.

710.3.2.2 Gyrotory Mix Design: Gyrotory Mix Designs shall be performed in accordance with the requirements of latest edition of the Asphalt Institute's SP-2 manual. Mix design laboratory compacted specimens shall be prepared using a gyrotory compactor in accordance with AASHTO T-312.

The mix design shall be formulated in a manner described for volumetric mix designs in the current edition of the Asphalt Institute Manual SP-2, except the number of trial blend gradations necessary will be determined by the mix design laboratory. Duplicate gyrotory samples shall be prepared at a minimum of four (4) binder contents to select the recommended binder content. [The gyrotory specimens shall be compacted to 160 gyrations. Volumetric data for the design number of gyrations.](#)

SECTION 710

N_{des} , and the initial number of gyrations, N_{inj} , are then back calculated based on the bulk specific gravity, G_{mb} , of the N_{max} specimens and the height data generated during the compaction process of those same specimens. For Low Traffic designs, volumetric data for 115 gyrations, N_{max} , for Low Traffic designs, is also back calculated from the specimens compacted to 160 gyrations. The completed mix design shall meet all the mineral aggregate and mix design criteria specified herein.



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For purposes of design, the number of gyrations shall be 8 for N_{ini} , 100 for N_{des} , and 160 for N_{max} . The corrected density of the specimens shall be less than 89.0 percent of maximum theoretical density at 8 gyrations N_{ini} . The corrected density of the specimens shall be less than 98.0 percent of maximum theoretical density at 160 gyrations N_{max} . The Gyratory mix shall comply with the criteria in Table 710-4.

The Gyratory mix shall comply with the criteria in Table 710-4.

TABLE 710-4				
GYRATORY MIX DESIGN CRITERIA				
Criteria	Requirements			Designated Test
	3/8" Mix	1/2" Mix	3/4" Mix	Method
1. Voids in Mineral Aggregate: %, Min.	15.0	14.0	13.0	AI SP-2
2. Effective Voids: %, Range	4.0 ± 0.2	4.0 ± 0.2	4.0 ± 0.2	AI SP-2
3. Absorbed Asphalt: %, Range *	0 - 1.0	0 - 1.0	0 - 1.0	AI SP-2
4. Dust to Eff. Asphalt Ratio, Range **	0.6 - 1.4	0.6 - 1.4	0.6 - 1.4	AI SP-2
5. Tensile Strength Ratio: %, Min.	75	75	75	AASHTO T-283 ASTM D 4867
6. Dry Tensile Strength: psi, Min.	75	75	75	AASHTO T-283 ASTM D 4867
7. Mineral Aggregate Grading Limits				AASHTO T-27
Percent Passing with Admix				
Sieve Size	3/8 inch Mix	1/2 inch Mix	3/4 inch Mix	
1 inch			100	
3/4 inch		100	90-100	
1/2 inch	100	90-100	43-89	
3/8 inch	90-100	53-89	-	
No. 8	32-47	29-40	24-36	
No. 40	2-24	3-20	3-18	
No. 200	2.0-8.0	2.0-7.5	2.0-6.5	
8. Number of Gyrations	Low Traffic		High Traffic	
N_{ini}	7		8	
N_{des}	75		100	
N_{max}	115		160	

* Unless otherwise approved by the Engineer.

** The ratio of the mix design composite gradation target for the No. 200 sieve, including admixture, to the effective asphalt content shall be within the indicated range.

710.3.2.3 Moisture Sensitivity Testing: Moisture sensitivity testing will be performed in accordance with [AASHTO-ASTM Test Method T283D 4867](#) for both Marshall and Gyratory mix designs, ~~without the freeze/thaw cycle(s)~~. The minimum required Tensile Strength Ratio is indicated in the tables above.

Comment [DL1]: If the ASTM procedure is adopted, there is no freeze/thaw cycle to omit.

- End of Section -

ASPHALT CONCRETE

710.1 GENERAL:

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

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

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

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

TABLE 710-1		
RECOMMENDED MINIMUM LIFT THICKNESS'S for ASPHALT CONCRETE MIXES		
Asphalt Concrete Mix Designation (inches)	Minimum Lift Thickness Marshall Mixes	Minimum Lift Thickness Gyratory Mixes
3/8"	1.0 inches	1.5 inches
1/2"	1.5 inches	2.0 inches
3/4"	2.5 inches	3.0 inches
Base	3.0 inches	n/a

710.2 MATERIAL:

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

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

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

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

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

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

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

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

710.3 MIX DESIGN REQUIREMENTS:

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

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

- (1) The name and address of the testing organization and the person responsible for the mix design report.
- (2) The mix plant identification and/or location, as well as the supplier or producer name.
- (3) A description of all products that are incorporated in the asphalt concrete along with the sources of all products, including admixtures and asphalt binder, and their method of introduction.

- (4) The supplier and grade of asphalt binder, the source and type of mineral aggregate, and the percentage of asphalt binder and mineral admixture used.
- (5) The mix design report, whether Gyratory or Marshall, shall state the traffic condition (low or high traffic) and size designation.
- (6) The results of all testing, determinations, etc., such as: specific gravity and gradation of each component, water absorption, sand equivalent, loss on abrasion, fractured coarse aggregate particles, Tensile Strength Ratio (ASTM D 4867), Marshall stability and flow, asphalt absorption, percent air voids, voids in mineral aggregate, and bulk density. Historical abrasion values may be supplied on existing sources. The submittal should include a plot of the gradation on the Federal Highway Administration's 0.45 Power Gradation Chart, plots of the compaction curves and the results of moisture sensitivity testing.
- (7) The laboratory mixing and compaction temperature ranges for the supplier and grade of asphalt binder used within the mix design.
- (8) A specific recommendation for design asphalt binder content and any limiting conditions that may be associated with the use of the design, such as minimum percentages of crushed or washed fine aggregate.
- (9) The supplier's product code, the laboratory Engineer's seal (signed and dated), and the date the design was performed.

The mix design shall be submitted to the Agency or Engineer by the Contractor/Supplier for which it was developed as part of his project submittals. Once the mix design has been approved by the agency or Engineer, the Contractor and/or his supplier shall not change plants nor utilize additional mixing plants without prior approval of the Engineer. Any changes in the plant operation, the producer's pit, the asphalt binder, including modifiers in the asphalt binder, or any other item that will cause an adjustment in the mix, shall be justification for a new mix design to be submitted.

710.3.2 Mix Design Criteria: The mix design shall be performed by one of two methods, Marshall Mix Design or Gyratory Mix Design. The method shall be specified on the plans, special provisions, or by the Engineer. A minimum of 4 points will be used to establish the mix design results. The oven aging period for both Marshall and Gyratory mix design samples shall be 2 hours.

710.3.2.1 Marshall Mix Design: The Marshall Mix Design shall be performed in accordance with the requirements of the latest edition of the Asphalt Institute's Manual, MS-2 "Mix Design Methods for Asphalt Concrete." The mix shall utilize the compactive effort of 75 blows per side of specimen. The mix shall comply with the criteria in Table [710-3](#).

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TABLE 710-3					
MARSHALL MIX DESIGN CRITERIA					
Criteria	Requirements				Designated Test
	3/8" Mix	1/2" Mix	3/4" Mix	Base Mix	Method
1. Voids in Mineral Aggregate: %, min	15.0	14.0	13.0	12.0	AI MS-2
2. Effective Voids: %, Range	4.0 ± 0.2	4.0 ± 0.2	4.0 ± 0.2	4.0 ± 0.2	AI MS-2
3. Absorbed Asphalt: %, Range *	0 - 1.0	0 - 1.0	0 - 1.0	0 - 1.0	AI MS-2
4. Dust to Eff. Asphalt Ratio, Range **	0.6 - 1.4	0.6 - 1.4	0.6 - 1.4	0.6 - 1.4	AI MS-2
5. Tensile Strength Ratio: %, Min.	65	65	65	65	ASTM D 4867
6. Dry Tensile Strength: psi, Min.	100	100	100	100	ASTM D 4867
7. Stability: pounds, Minimum	2,000	2,500	2,500	3000	AASHTO T-245
8. Flow: 0.01-inch, Range	8 - 16	8 - 16	8 - 16	8 - 16	AASHTO T-245
9. Mineral Aggregate Grading Limits					AASHTO T-27
	Percent Passing with Admix				
Sieve Size	3/8 inch Mix	1/2 inch Mix	3/4 inch Mix	Base Mix	
1-1/4 inch				100	
1 inch			100	90-100	
3/4 inch		100	90 - 100	85-95	
1/2 inch	100	85 - 100	---	---	
3/8 inch	90-100	62 - 85	62 - 77	57-72	
No. 8	45-60	40 - 50	35 - 47	33-43	
No. 40	10-22	10 - 20	10 - 20	9-18	
No. 200	2.0 - 10.0	2.0 - 10.0	2.0 - 8.0	1.0 - 7.0	

* Unless otherwise approved by the Engineer.

** The ratio of the mix design composite gradation target for the No. 200 sieve, including admixture, to the effective asphalt content shall be within the indicated range.

710.3.2.2 Gyratory Mix Design: Gyratory Mix Designs shall be performed in accordance with the requirements of latest edition of the Asphalt Institute's SP-2 manual. Mix design laboratory compacted specimens shall be prepared using a gyratory compactor in accordance with AASHTO T-312.

The mix design shall be formulated in a manner described for volumetric mix designs in the current edition of the Asphalt Institute Manual SP-2, except the number of trial blend gradations necessary will be determined by the mix

SECTION 710

design laboratory. Duplicate gyratory samples shall be prepared at a minimum of four (4) binder contents to select the recommended binder content. The gyratory specimens shall be compacted to 160 gyrations. Volumetric data for the design number of gyrations, N_{des} , and the initial number of gyrations, N_{ini} , are then back calculated based on the bulk specific gravity, G_{mb} , of the N_{max} specimens and the height data generated during the compaction process of those same specimens. For Low Traffic designs, volumetric data for 115 gyrations, N_{max} for Low Traffic designs, is also back calculated from the specimens compacted to 160 gyrations.

The corrected density of the specimens shall be less than 89.0 percent of maximum theoretical density at N_{ini} . The corrected density of the specimens shall be less than 98.0 percent of maximum theoretical density at N_{max} . The Gyratory mix shall comply with the criteria in Table [710-4](#).

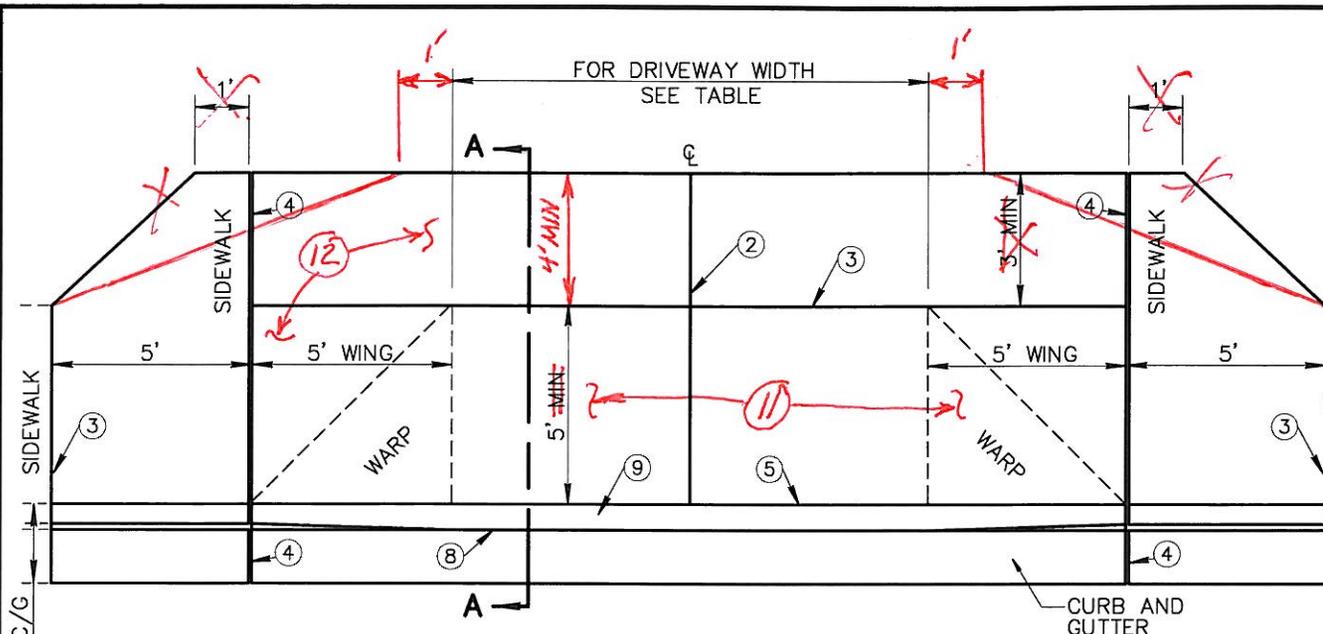
TABLE 710-4				
GYRATORY MIX DESIGN CRITERIA				
Criteria	Requirements			Designated Test
	3/8" Mix	1/2" Mix	3/4" Mix	Method
1. Voids in Mineral Aggregate: %, Min.	15.0	14.0	13.0	AI SP-2
2. Effective Voids: %, Range	4.0 ± 0.2	4.0 ± 0.2	4.0 ± 0.2	AI SP-2
3. Absorbed Asphalt: %, Range *	0 - 1.0	0 - 1.0	0 - 1.0	AI SP-2
4. Dust to Eff. Asphalt Ratio, Range **	0.6 – 1.4	0.6 – 1.4	0.6 – 1.4	AI SP-2
5. Tensile Strength Ratio: %, Min.	75	75	75	ASTM D 4867
6. Dry Tensile Strength: psi, Min.	75	75	75	ASTM D 4867
7. Mineral Aggregate Grading Limits				AASHTO T-27
	Percent Passing with Admix			
Sieve Size	3/8 inch Mix	1/2 inch Mix	3/4 inch Mix	
1 inch			100	
3/4 inch		100	90-100	
1/2 inch	100	90-100	43-89	
3/8 inch	90-100	53-89	-	
No. 8	32-47	29-40	24-36	
No. 40	2-24	3-20	3-18	
No. 200	2.0-8.0	2.0-7.5	2.0-6.5	
8. Number of Gyrations	Low Traffic		High Traffic	
N_{ini}	7		8	
N_{des}	75		100	
N_{max}	115		160	

* Unless otherwise approved by the Engineer.

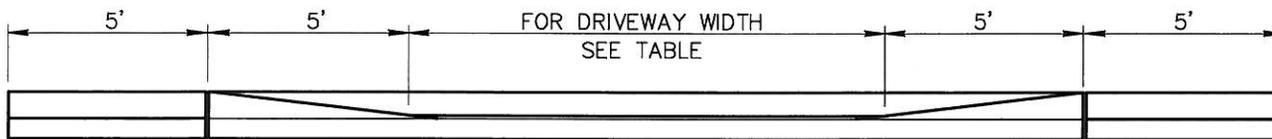
** The ratio of the mix design composite gradation target for the No. 200 sieve, including admixture, to the effective asphalt content shall be within the indicated range.

710.3.2.3 Moisture Sensitivity Testing: Moisture sensitivity testing will be performed in accordance with ASTM D 4867 for both Marshall and Gyratory mix designs. The minimum required Tensile Strength Ratio is indicated in the tables above.

- End of Section -



DRIVEWAY WITH SIDEWALK ATTACHED TO CURB

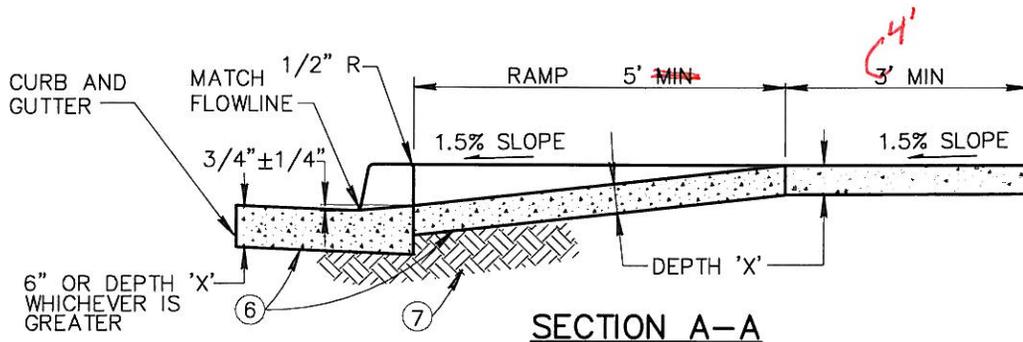


NOTES:

CONTRACT

1. DEPRESSED CURB SHALL BE PAID FOR AT THE UNIT PRICE ~~BID~~ FOR THE TYPE OF CURB USED AT THAT LOCATION.
2. CONTRACTION JOINT ON D/W CENTERLINE.
3. CONTRACTION JOINT.
4. 1/2-INCH EXPANSION JOINTS SHALL COMPLY WITH SECTION 340.
5. BACK OF CURB - CONSTRUCTION JOINT.
6. CONCRETE CLASS AS NOTED IN TABLE. CONCRETE PER SECTION 725.
7. SUBGRADE PREPARATION, SECT. 301.
8. FLOW LINE OF GUTTER.
9. DEPRESSED CURB.
10. SECT. A-A AND ELEVATION: D/W SHOWN WITH VERTICAL CURB AND GUTTER, ROLL TYPE CURB AND GUTTER TREATED SIMILARLY.
11. ROUGH BROOM FINISH FULL WIDTH OF RAMP AND WINGS. TROWEL AND USE LIGHT HAIR BROOM FINISH FOR WALKWAY AREA.

12 ←



SECTION A-A

COMMERCIAL AND INDUSTRIAL				
DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH 'X'
COMMERCIAL	* 16'	40'	A	9"
INDUSTRIAL	* 16'	40'	A	9"
* 24' MIN. FOR TWO WAY TRAFFIC				
RESIDENTIAL				
DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH 'X'
MAJOR STREET	16'	30'	B	5"
COLLECTOR STREET	* 12'	30'	B	5"
LOCAL STREET	12'	30'	B	5"
* 16' DESIRABLE				

DETAIL NO.
250-2



STANDARD DETAIL
ENGLISH

**DRIVEWAY ENTRANCES WITH
SIDEWALK ATTACHED TO CURB**

REVISED
01-01-2009

DETAIL NO.
250-2

Case No. 12-04 MAG 317 (milling) with language for dust abatement.

Purpose:

To have language included in this section to that points out the dust mitigation procedures on a milled surface that will be subject to open traffic on major and collector streets. This should make the engineer aware of the possibility of dust and therefore possible dust violations.

Issues: None. Engineers can direct the contractor to omit the tack application for dust control at their direction and risk.

ASPHALT MILLING

317.1 DESCRIPTION:

The work under this section shall consist of milling existing asphalt concrete pavement where shown on the Plans or requested by the Engineer.

317.2 CONSTRUCTION REQUIREMENTS:

Contractor is responsible for locating all milling hazards on and below the surface within the areas to be milled including areas requiring special milling. Special milling is not a separate pay item and shall be paid for as Asphalt Milling.

The milling cut depth shall be the depth indicated on the Plans plus or minus 1/8 inch. The milling machine shall have electronic grade controls. Contractor shall remove the milled material and sweep the roadway clean with a power pick-up broom to the satisfaction of the Engineer.

Asphalt pavement adjacent to manholes, valve boxes, small radius curbs and other fixed objects that produce confined area shall be removed with milling equipment specifically designed to operate in constricted areas. The equipment shall be capable of removing asphalt concrete of the specified thickness without damage to, or displacement of, the adjacent object(s).

The Contractor shall be responsible for continually checking the milling operation to determine that the proper depth of milling has been achieved, that the proper profile and cross slope are achieved, and that the surface texture is (a) free from longitudinal ridges, and (b) has a uniform pattern.

The Contractor shall immediately notify the Engineer when:

- The existing pavement thickness is found to be less than anticipated and breaking of the underlying material occurs.
- Delamination of underlying material occurs.

The work shall result in a clean milled surface to the specified depth for the area indicated by the construction documents including the areas immediately around and next to any individual hazard within the area to be milled. The edge of milled area shall form a straight clean cut line.

[In order to mitigate dust on milled surfaces that will be subject to traffic on major, collector-arterial streets, Tack shall be applied to the milled surface at the prescribed rate as directed by the engineer after sweeping and prior to traffic per MAG 329\(tack coat\). Payment shall be incidental to the "tack" operations.](#)

317.3 MEASUREMENT AND PAYMENT:

Measurement for Asphalt Milling will be by the square yard and shall only include area milled to the required depth and cross-section.

Payment for Asphalt Milling at the contract unit price shall be full compensation for the work, complete-in-place, including all asphalt milling, milling around structures, removal and disposal of milled materials, and sweeping.

- End of Section -

Case 12-05

Modifications to Section 711: Asphalt Paving (711-1 table)

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

The PG76-16 is included because ADOT uses it in desert climates. This product is not expected to be used regularly. It is expensive and is usually a special order product.

PAVING ASPHALT

711.1 GENERAL:

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

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

711.2 TESTING REQUIREMENTS:

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

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

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

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

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

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

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

NOTES:

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

Revised 2012

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

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

PAVING ASPHALT

711.1 GENERAL:

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

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

711.2 TESTING REQUIREMENTS:

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

TABLE 711-1				
PERFORMANCE GRADING SYSTEM				
	PG 58-22	PG 64-16	PG-70-10	PG 76-16
Original Asphalt				
Viscosity, ASTM D4402 (Note 1) Max. 3 Pa-s, Test Temp, °C	135	135	135	135
Dynamic Shear TP5 (Note 2) G*/Sin δ, Min., 1.0 kPa Test Temp. @ 10 rad/s, °C	58	64	70	76
Rolling Thin Film Oven Residue (AASHTO T-240)				
Mass Loss, Maximum % Dynamic Shear TP5 G*/Sin δ, Min., 2.20 kPa Test Temp. @ 10 rad/s, °C	1.0	1.0	1.0	1.0
Pressure Aging Vessel Residue (AASHTO R-28)				
PAV Aging Temperature, °C	100	100	110	110
Dynamic Shear TP5 G**Sin δ, Max., 5000 kPa Test Temp. @ 10 rad/s, °C	22	28	34	34
Creep Stiffness, TP1 (Note 3) S, Maximum, 300.0 Mpa m-value, Minimum, 0.300 Test Temp. @ 60s, °C	-12	-6	0	-6
Direct Tension, TP3 (Note 3) Failure Strain, Minimum 1.0% Test Temp. @ 1.0 mm/min. °C	-12	-6	0	-6

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

NOTES:

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Revised 2012

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Water/Sewer Working Group Meeting

Meeting Notes
March 20, 2012

Opening:

A meeting of the Specifications and Details Water/Sewer Working Group was called to order by chair Jim Badowich on March 20, 2012, at 1:35 p.m. in the MAG Cholla Room. He gave brief background information on the group and made introductions.

1. Participants

Syd Anderson (Phoenix), Jim Badowich (Avondale), Arturo Chavarria (Hanson Pipe), Bill Davis (ADS), Jami Erickson (Phoenix), Brian Gallimore (AGC), Mike Hook (ALPA), Mark Ivanich (Glendale), Jason Jackson (Oldcastle Precast), Peter Kandararis (SRP), Kelly Kokesh (ADS), Matt Savage (Ferguson), Javier Setovich (Peoria), Gordon Tyus (MAG), Tom Wilhite (Tempe).

2. Cadmium Plated Bolts (Case 11-03)

Javier Setovich was unable to attend, but he did forward a draft revision of the case. The case was designed to replace cadmium plating with zinc as the default. Further revisions by the group were discussed to separate the other options as a separate paragraph so it would not be confused with whether the options were for flanged connections or mechanical joints, which could use core 10 steel. The options would include grade B, stainless steel and cadmium. Members were asked to review the ASTM and AWWA references. Jim Badowich said he would work on making revisions based on the discussions.

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

Sponsor Scott Zipprich was not present, but Jim Badowich said he was working with Scott to get a final version ready. He asked if anyone had additional comments. Gordon Tyus said he received manufacturer's AutoCAD drawings of the hydrant from Tony Braun; however, they were more detailed on its manufacture than on its installation.

4. Manhole Details and Pre-Cast Manhole Bases

Jim Badowich said he is working with the CAD drafters in Avondale to begin editing the manhole details. He said he would like to use the specifications and details developed by Buckeye as a basis for the pre-cast manhole base option.

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

A presentation by Kelly Kokesh of ADS was provided on the design and installation of flexible pipe. ADS follows ASTM D2321 specifications for installation. The trench design, backfill, and compaction requirements are determined by design based on the depth, soil and project requirements. There was extension discussion on the variability of long-term deflection of HDPE pipe. Mr. Kandararis asked Ms. Kokesh to provide information on the actual amount of deflection. This would be important for any pipe beneath the roadway. Syd Anderson described Phoenix's use of slurry instead of the ASTM procedures. Advantages included making sure there was not settlement around the haunches, as well as quicker and safer installation. Further discussion about adding specifications to keep pipe from floating was also discussed.

6. New Potential Areas for Discussion

Mr. Badowich asked the members what revisions the group would like to focus on next. He suggested returning to flushing requirements as one area. This was initially introduced a couple years ago in response to Goodyear's lack of water reserves for flushing. Metering and charging developers for the cost of water was discussed.

Jami Erickson mentioned possible items including the reclaimed water specification and requirements to keep fresh water in the mains. Phoenix would like to revise section 611.7 to have water turn over every 10 days.

Another potential revision was proposed to Section 735 part G regarding hairline cracks. Finally there was discussion on different types of inspections after installation including the option of laser inspection.

7. Next Meeting Date

Members agreed to tentatively schedule the next meeting on Tuesday, April 17, 2012 at 1:30 at the MAG office.

Specifications & Details Outside Right-of-Way Working Group

March 20, 2012 Meeting (2:45 pm to 4:00 pm)

at

Maricopa Association of Governments
302 North 1st Avenue
Phoenix, AZ

Meeting Agenda

INTRODUCTION

- Welcome participants – Introductions

DISCUSSION ITEMS

- Status on MAG Carry-over Cases from the WG – See proposed revisions
 - Case 11-12 – Modify Section 107
 - Case 11-16 – Section 415 Guardrails
 - Case 11-18 – Section 350, Removal of Existing Improvements
- New Cases
 - Street Sign Base – Modify Detail 131 or new square post detail
 - Other
- Next meeting date (April 17)

MAG Asphalt Working Group Meeting

Jeff Benedict (Valero) chaired the meeting. It was convened at noon on Wed. March 21st at the ARPA meeting room. Present were Doug Laquey (Fisher) Don Cornelison (Speedie), Adrian Green (Vulcan), Brian Galimore (WSP), Syd Anderson (C.O.P.) Peter Kandarlis (SRP), and Gordon Tyus (MAG)

MAG 317 (milling) section was reviewed and a minor addition to the document was recommended to include an application of tack on the milled surface prior to opening the surface to traffic. The proposed language will be submitted to the MAG next month.

MAG 710 was reviewed and the recommended changes for a low volume gyratory design. An additional change from AASHTO T238 to ASTM D 4867 for the TSR test is being recommended. These will be forwarded to the whole MAG technical committee. A better explanation letter will be distributed with this case.

MAG 719 (Recycled asphalt in hot mix) was reviewed and discussed. It was agreed that the current version is unusable. The committee is still waiting to review the FHWA guidelines for this. An assignment was given to acquire the FHWA guidelines. ADOTs documents were discussed and decided that they were too burdensome and too long (50 Pages)

MAG 321 (Hot mix application) Discussion on the language in 321.10 "compaction" that was decided it was too vague. Language has been developed to correct this. The proposed language will be distributed to the MAG next month.

MAG 711

An error was pointed out on the table 711-1 on the PAV temp called for. I have reviewed this table and will forward a recommendation to adjust the table. It should include binders that are being used in Maricopa County and eliminate the others. After the subcommittee reviews this I will submit this as new case.

The group had a discussion on "warm mix" which was not helpful due to there was nothing new brought to the group. The recommendation from the sub-committee is to still wait to review the ADOT recommendations on warm mix and then decide if it should be included in the MAG as a new section (322?)

This will be distributed and discussed at the next sub-committee meeting.

It was decided that the next sub-committee meeting will be April 18th at noon at ARPA.

The meeting was adjourned at 1:15 the concrete sub-committee meeting followed this meeting.

MAG Concrete Working Group

Meeting Notes

Wednesday, March 21, 2012, 1:30 pm at the ARPA Offices

Present:

See attached attendance sheet.

Discussion:

Minutes from the last meeting on 2-23-12 were handed out for review and approval.

- 1) Due to the inclusion of several new members, an overview of the MAG Standards review process was discussed with emphasis on the current Sections involved.
- 2) The list of Sections under review/revision was gone over with progress reports on each from the assigned point person – when in attendance. Most of the Section reviews are started but not completed enough for Group comments.
- 3) A discussion was held regarding the Town of Gilbert and Industry responses to their proposed revisions to MAG Standards – lead by Don Cornelison and Brian Gallimore.
- 4) Several new participants from Superlite Block were present and offered to have a Presentation relating to Masonry/Concrete Pavers and Pervious applications to the Group at the beginning of the next meeting. The Group thought this would be helpful in the review of several of the Sections and potential new Sections in the Out Of Right Of Way areas.
- 5) Recycled Materials – additional copies of some current recycled base specifications from ADOT and Pinal County were distributed to the Group for their information. The Materials Group is working on the Recycle issue at this time and members were again encouraged to be involved with the process.

Date for Next Meeting:

The next meeting is scheduled for **Thursday, April 26th at 1:30 PM** in the ARPA offices. Any and all participants are welcome and encouraged to be involved.

