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March 19, 2008

TO: Members of the MAG Specifications and Details Committee
FROM: Robert Herz, Maricopa County DOT, Chairman
SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF AGENDA

Wednesday, April 2, 2008 at 1:30 p.m.
MAG Office, Second Floor, Cholla Room
302 North First Avenue, Phoenix

The meeting of the MAG Specifications and Details Committee will be held at the place and time indicated above. The agenda for the meeting is provided below. **Please park in the garage under the building. Bring your ticket to the meeting, parking will be validated. For those using transit, the Regional Public Transportation Authority will provide transit tickets for your trip. For those using bicycles, please lock your bicycle in the bike rack in the garage.** Please call me at (602) 506-4760 if you have questions about the upcoming meeting.

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 at (602) 254-6300. Requests should be made as early as possible to allow time to arrange the accommodation.

The discussion time for individual cases will be limited to approximately 5 minutes per case. This limitation is due to the large number of active cases and is intended to provide an opportunity for all cases to be addressed. It is requested (not required) that written comments 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 Mar 5, 2008 Meeting Minutes</u>	2. Corrections and approval of March 5, 2008 minutes.
3. <u>2007 & 2008 Cases</u>	3. Review of pending cases and submission of new cases for consideration.
4. <u>General Discussion</u>	4. For information and discussion.
5. <u>Adjournment</u>	5. No action required.

A Voluntary Association of Local Governments in Maricopa County

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

March 5, 2008

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

AGENCY MEMBERS

Jim Badowich, Avondale	Gordon Haws, Mesa
Steven Borst, Buckeye	Jesse Gonzalez, Peoria
Warren White, Chandler	Jeff Van Skike, Phoenix (St. Trans.)
* Chris Young, El Mirage	Jami Erickson, Phoenix (Water)
Kelli Kurtz, Gilbert	Mark Palichuk, Queen Creek
Tom Kaczmarowski, Glendale	Rodney Ramos, Scottsdale
Troy Tobiasson, Goodyear	Loren Kelley, Surprise
Bob Herz, MCDOT	James Bond, Tempe

ADVISORY MEMBERS

John Ashley, ACA	* Adrian Green, ARPA
Jeff Benedict, AGC	Paul R. Nebeker, Independent
* Brian Gallimore, AGC	William Ast, NUCA
Peter Kandaris, SRP, Vice Chairman	Dale Phelan, NUCA
James Carusone for Don Cornelison, ARPA	

MAG ADMINISTRATIVE STAFF

Gordon Tyus

* Members not attending or represented by proxy.

GUESTS/VISITORS

Arturo Chavarria, Hansen Pipe and Precast

1. Call to Order

Chairman, Bob Herz, called the meeting to order at 1:33 p.m.

2. Approval of Minutes

The members reviewed the February 6, 2008 meeting minutes. Gordon Haws introduced a motion to accept the minutes as written. Troy Tobiasson seconded the motion. A voice vote of all ayes and no nays was recorded.

3. 2007 Cases (old cases)

a. **Case 07-02 – Revisions to Asphalt Concrete, Sections 321 and 710:** Major re-writes of Asphalt Concrete placement and materials Sections 321 and 710 as proposed by the Asphalt Paving Technical Committee (APTC). Jeff Benedict gave a progress report on recent committee meetings for resolving comments. The technical committee will finish resolving Section 321 comments at the next meeting and will begin work on Section 710 comments (copy handed out). APTC will meet at the ARPA offices (916 W. Adams Street, Phoenix) on March 12th to continue the work.

b. **Case 07-03A – PVC Catch Basins, Proposed New Details 535-2, 535-3, 537-2 & 539-2. Case 07-03B – Inlet Structures, Proposed New Details 542-1 through 4 & 543-1 through 5:** Details to allow the use of PVC catch basins and inlet structures. Revised details were distributed to members. Committee members recommended that more dimensioning and detailing be provided for drawings showing grates, frames and base plates to allow enough information for fabrication (including tolerances, weld symbols, casting requirements, etc. as is done with existing MAG grate details). Members also noted that grate/frame clearance should be less than ½”, the referenced water stop should be per MAG 735 (not MAG 710.5), dimension arrows to pipe invert should extend to the bottom of the pipe, the basin end cap should be described, the stub out joint note should be simplified, and long notes should be referenced and numbered in details (not shown with arrows). Jim Badowich also questioned if the neck on basin casings should be longer to accommodate field cut variances. Dale Phelan will address comments and discussion items along with additional detail clean-up items and provide revisions for the next meeting.

c. **Case 07-08 – Revision to Section 615.2, Sewer Line Construction:** Provide water ponding tolerances inside sewer pipe. Mark Palichuk summarized the case prior to discussion and stated that plans to compile previous comments. Jami Erickson is continuing to track down COP standards and practices. Committee members held a discussion on tolerances. Along with pipe tolerances, the group agreed that other defects such as those dealing with joint construction (joints pulled apart, incorrect taps) need to be addressed. Rodney Ramos cited his concern that pipe tolerances along with trench requirements could result in an accumulation of tolerances. Acceptance should be based on insuring that the grade and final product meet requirements. Mark Palichuk will begin preparing revisions based on the discussions.

d. **Case 07-11 – Revision to Detail 370, Vertical Realignment of Water Mains:** Include an option for realignment of ductile iron mechanical joint. The committee had no discussion on this item. Jesse Gonzalez will have revisions for the next meeting.

e. **Case 07-12 – Revision to Detail 404-2, Water & Sanitary Sewer Separation/Protection:** Adding language to clarify the location of pipe and joint restraints to insure that fittings/couplings do not fail and create cross-contamination. The committee had no discussion on this item. Jesse Gonzalez will have revisions for the next meeting.

4. 2008 Cases (new cases)

a. **Case 08-01 – Revisions to Borrow Excavation, Section 210:** Defining acceptance criteria for import borrow material. Bob Herz provided revisions to the case based on comments received and included minimum plasticity for fill soils with a fines content over 30%. Members questioned how the equation for fill requirements was derived. Bob said he would attempt to contact the original source of the county specification for clarification. Committee members were requested to continue reviewing the proposal and return with comments for the next meeting.

b. **Case 08-02 – New Section 317, Asphalt Milling:** Construction requirements for milling existing asphalt concrete pavement (a new section as requested by the supplements subcommittee). No comments were provided at this time. Members were requested to continue reviewing the proposal and return with comments for the next meeting.

c. **Case 08-03 – New Section 325, Asphalt – Rubber Concrete Overlay, Gap Graded:** Material and construction requirements for gap-graded asphalt-rubber concrete used as an asphalt pavement overlay (a new section as requested by the supplements subcommittee). No comments were provided at this time. Committee members were encouraged to have their agency labs review the case and provide comments for the next meeting.

d. **Case 08-04 – New Details 180-1 & 180-2, Portable Water Tank Fill Pipe and Backflow Prevent Details:** Approved methods for filling portable water tanks and trucks (new details as requested by the supplements subcommittee). Bob Herz recommended deleting truck-mounted backflow prevention shown in Detail 180-2. Steve Borst questioned whether the MAG standards should address this issue since there is state code that can over-ride backflow prevention requirements. Arizona administrative code references other standards (USC Cross-Connection Control Manual) that are not noted in the details. After discussion by the members it was agreed that Steve will work with Warren White to determine the best way to address these issues and will get back to the committee with possible case revisions.

e. **Case 08-05 – Revisions to Safety Post Detail 140:** A revision to incorporate multiple agency safety post designs and include hazard marker requirements with the existing safety post detail (revised details as requested by the supplements subcommittee). Committee members discussed the use and function of the detail and suggested that two separate details be created, one concerning safety posts (also called “bollards”) and the

other dealing with safety markers. Members recommended that removable bollards be included in the detail and that a table be added for various height and diameter dimension options instead of showing multiple bollard details. Jeff Van Skike said that the Manual for Uniform Traffic Control Devices may already have information on safety markers and should be investigated. Warren White will review comments and have responses or modifications for the next meeting.

f. **Case 08-06 – Modification to Storm Drain Construction, Section 618.3:** Additions to include leakage test procedures for HDPE storm drain pipes and require video inspection before final paving is allowed (revisions as requested by the supplements subcommittee). Committee members questioned whether these requirements should be limited to just HDPE pipe. Jeff Van Skike noted that the City of Phoenix has similar requirements in its supplement for most types of pipe (including concrete and CMP) and will look at a more general incorporation of testing requirements for all pipe (possibly placed in MAG 603). The members also discussed specific items in the proposed changes including the validity of the criteria, possible use of air instead of water for testing, the applicability of the requirements for larger diameter pipe, and the need for absorption time with HDPE pipe. Jeff will prepare revisions based on the discussions.

g. **Case 08-07 – Modification to Measurements and Payment, Section 109:** Revisions to better define compensation with change orders (revisions as requested by the supplements subcommittee). No comments were provided at this time, but members requested that the proposed changes be shown within the existing section for ease in evaluation. Committee members were requested to review the proposal and return with comments for the next meeting.

h. **Case 08-08 – Modification to Subgrade and Trench Compaction, Sections 301.3 and 601.4:** Revisions to modify subgrade compaction requirements and include tolerances for optimum moisture (revisions as requested by the supplements subcommittee). No comments were provided at this time, but members requested that the proposed changes be shown within the existing section for ease in evaluation. Committee members were requested to review the proposal and return with comments for the next meeting.

i. **Case 08-09 – Modification to Sewer Manhole Construction, Subsection 625.3.1:** Additions to sewer manhole frame and cover construction (revisions as requested by the supplements subcommittee). Committee members noted that the proposed minimum and maximum manhole ring adjustments may be in conflict with existing MAG details (MAG 420). Gordon Haws will review the proposed changes based on the discussion. Committee members were requested to review the proposal and return with comments for the next meeting.

j. **Case 08-10 – Modification to Trench Backfill and Pavement Replacement, Detail 200, Section 336 and Section 601:** Revisions to eliminate numerous agency trench backfill and pavement replacement supplemental details by combining the most common practices (revisions as requested by the supplements subcommittee). Members requested

that revised Detail 200 include a default option of 1-sack cement CSLM and note trench foundation requirements be in accordance with Section 601. Peter Kandarlis will prepare revisions based on the discussion. Committee members were requested to review the proposal and return with comments for the next meeting.

k. **Case 08-11 – Revisions to Driveway Entrance Detail 250:** Revisions as requested by the supplements subcommittee to reduce the number of agency supplements to MAG standards. Robert Herz presented changes to make sidewalk installations in driveway entrances ADA compliant. Committee members were requested to review the proposal and return with comments for the next meeting.

l. **Case 08-12 – New Section 714, Microsurfacing Materials:** A new section as requested by the supplements subcommittee to reduce the number of agency supplements to MAG standards. Jeff Van Skike presented a new section that is currently part of the City of Phoenix supplements for pavement microsurfacing materials. Committee members were requested to review the proposal and return with comments for the next meeting.

m. **Case 08-13 – Modification to Manhole, Valve Box and Water Meter Box Adjustments, Section 345:** A new section as requested by the supplements subcommittee to reduce the number of agency supplements to MAG standards. Jeff Van Skike presented revisions to require contractors be responsible for locating utilities during surface improvement projects so that needed adjustments are performed. Committee members were requested to review the proposal and return with comments for the next meeting.

5. General Discussion:

John Ashley handed out information from the first meeting of the subcommittee working on modernization of Section 725. The subcommittee's next meeting will be at the ARPA offices (916 W. Adams Street, Phoenix) on March 31st from 1:30 to 2:30 pm.

6. Adjournment:

The meeting was adjourned at 3:58 p.m.

2008 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE
07-02	Revision/ Re-Write Section 710 & Section 321	ARPA AGC	Don Green Jeff Benedict	2/07/2007 2/06/2008		0 Yes 0 No 0 Abstain
07-03 A	PVC Catch Basins - New Details 535-2, 535-3, 537-2, 539-2	NUCA	Dale Phelan	2/07/2007 2/06/2008		0 Yes 0 No 0 Abstain
07-03 B	PVC Inlet Structures - New Details 542-1, 542-2, 543-1, 543-2, 543-5.	NUCA	Dale Phelan	2/07/2007 2/06/2008		0 Yes 0 No 0 Abstain
07-08	Revision to Section 615 Sewer Line Construction – Clarify tolerances for pipe versus trench bottom.	Queen Creek	Gerald Wright	5/02/2007 8/01/2007		0 Yes 0 No 0 Abstain
07-11	Revision to Detail 370, Vertical Realignment of Water Mains	Peoria	Jesse Gonzalez	6/06/2007		0 Yes 0 No 0 Abstain
07-12	Revision to Detail 404-2, Water & Sanitary Sewer Separation/Protection	Peoria	Jesse Gonzalez	6/06/2007		0 Yes 0 No 0 Abstain
08-01	Revision to Section 210 Borrow Excavation	MCDOT	Bob Herz	1/02/2008 3/05/2008		0 Yes 0 No 0 Abstain
08-02	New Section 317, Asphalt Milling	MCDOT	Bob Herz	1/02/2008		0 Yes 0 No 0 Abstain
08-03	New Section 325, Asphalt – Rubber Concrete Overlay, Gap Graded	MCDOT	Bob Herz	1/02/2008		0 Yes 0 No 0 Abstain
08-04	New Details 180-1 and 180-2, Portable Water Tank Fill Pipe and Backflow Prevent Details	Chandler	David Fern	1/02/2008		0 Yes 0 No 0 Abstain
08-05	Revisions to Safety Post Detail 140	Chandler	David Fern	1/02/2008		0 Yes 0 No 0 Abstain

2008 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE
08-06	Revision to Section 618.3 Construction Methods, add Leakage Test Procedures for HDPE Storm Drain Pipe.	Phoenix	Jeff Van Skike	2/06/2008 2/06/2008		0 Yes 0 No 0 Abstain
08-07	Revisions to Section 109.4 Compensation for Alteration of Work	Mesa	Gordon Haws	2/06/2008 2/06/2008		0 Yes 0 No 0 Abstain
08-08	Revisions to Section 301.3 Relative Compaction and Section 601.4 Foundation, Bedding, Backfilling and Compaction concerning optimum moisture and percent compaction.	Mesa	Gordon Haws	2/06/2008 2/06/2008		0 Yes 0 No 0 Abstain
08-09	Revisions to Section 625.3.1 Manholes	Mesa	Gordon Haws	2/06/2008 2/06/2008		0 Yes 0 No 0 Abstain
08-10	Detail 200 and Sections 336 and 601 – Trench backfill and pavement Replacement	SRP	Peter Kandaris	2/06/2008 2/06/2008		0 Yes 0 No 0 Abstain
08-11	Revisions to Detail 250 DRIVEWAY ENTRANCES	MCDOT	Bob Herz	3/05/2008		0 Yes 0 No 0 Abstain
08-12	New Section 714, Microsurfacing Materials	Phoenix	Jeff Van Skike	3/05/2008		0 Yes 0 No 0 Abstain
08-13	Revision to Section 345 Adjusting Frames, Covers, Valve Boxes and Water Meter Boxes	Phoenix	Jeff Van Skike	3/05/2008		0 Yes 0 No 0 Abstain
						0 Yes 0 No 0 Abstain
						0 Yes 0 No 0 Abstain

* Case was approved with verbal modifications at time of voting.



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: January 2, 2008 – Revised 3/5/2008

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Modification to Section 210 BORROW EXCAVATION

Case 08- 01

PURPOSE: Define acceptance criteria for imported borrow material.

REVISION: Add paragraph as noted.

210.2 IMPORTED BORROW:

Imported borrow shall consist of material required for construction and unless otherwise designated in the special provisions, the Contractor shall make his own arrangements for obtaining imported borrow and he shall pay all costs involved. Imported borrow shall be obtained from sources indicated on the plans, designated in the special provisions, or approved by the Engineer.

Borrow material for fill construction shall meet the following requirement:

The Plasticity Index (PI) (AASHTO T90) and the percent passing the number 200 sieve (Minus 200) (ASTM C136) when used in the equation below, shall give a value of X that does not exceed 62.

$$X = (\text{Minus 200}) + 2.83 (\text{PI})$$

When the percentage of the Minus 200 material is greater than 30, the PI for the soil shall be at least 5 and at the same time in compliance with the X value requirement.

The material shall be free from wood, vegetation, or other deleterious matter. The maximum size of this material shall not be greater than 2/3 the compacted thickness of the course placed in the subgrade.

The Contractor shall notify the Engineer sufficiently in advance of opening any material sites so that cross section elevations and measurements of the ground surface after stripping may be taken and sufficient time for testing and material will be allowed.

Borrow pits shall be excavated to regular lines to permit accurate measurement; depth of excavation throughout the area of borrow pits shall be as uniform as practicable and the side slope shall be dressed to such slope as may be directed, leaving the borrow pit area in a clean and safe condition.



MARICOPA COUNTY
Department of Transportation

CASE 08-11

MEMORANDUM

Date: March 5, 2008

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Revisions to Detail 250 DRIVEWAY ENTRANCES

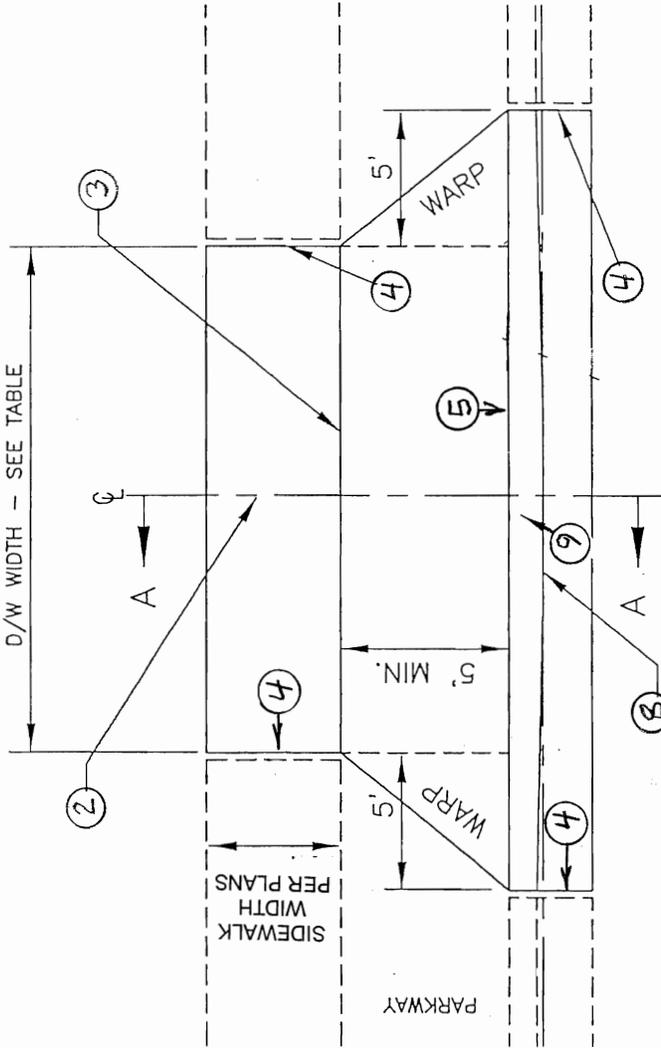
Case 08- 11

PURPOSE: Revise Detail 250 to obtain ADA compliant sidewalk installations.

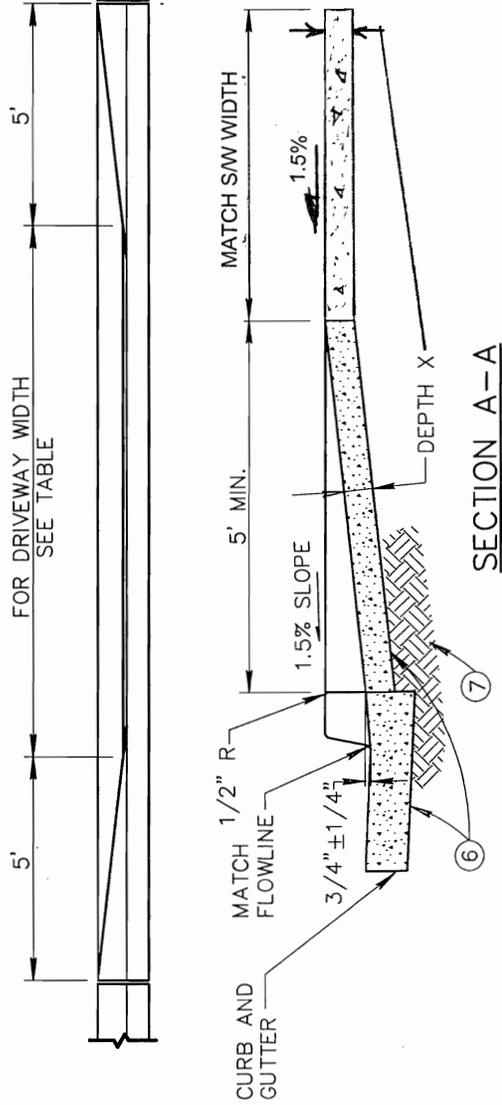
REVISION: Create separate installation details for driveways when the sidewalk is detached or attached to the back of curb.

NOTES:

1. DEPRESSED CURB SHALL BE PAID FOR AT THE UNIT PRICE BID FOR THE TYPE OF CURB USED AT THAT LOCATION.
2. WHEN WIDTH EXCEEDS 22' PROVIDE A CONTRACTION JOINT ON D/W CENTERLINE.
3. CONTRACTION JOINT.
4. EXPANSION JOINTS SHALL COMPLY WITH SECTION 340.
5. BACK OF CURB - CONSTRUCTION JOINT
6. CLASS 'B' CONCRETE, SECT. 725.
7. SUBGRADE PREPARATION, SECT. 301.
8. FLOW LINE OF GUTTER.
9. DEPRESSED CURB.
10. SECTION A - A AND ELEVATION, DW SHOWN WITH VERTICAL CURB AND GUTTER, ROLL TYPE CURB AND GUTTER TREATED SIMILARLY.



DRIVEWAY WITH DETACHED SIDEWALK



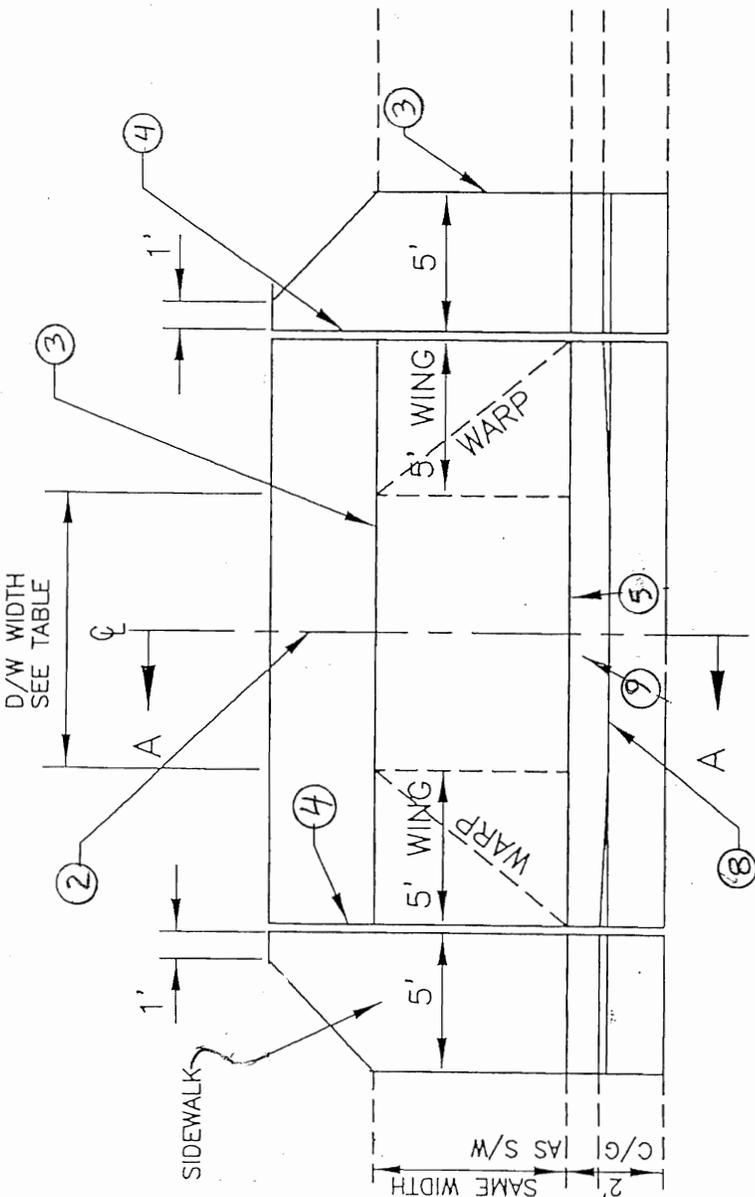
COMMERCIAL AND INDUSTRIAL

DRIVEWAY WIDTH	MIN.	MAX.	CLASS	DEPTH X
COMMERCIAL	* 16'	40'	B	6"
INDUSTRIAL	* 16'	40'	B	6"
* 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				

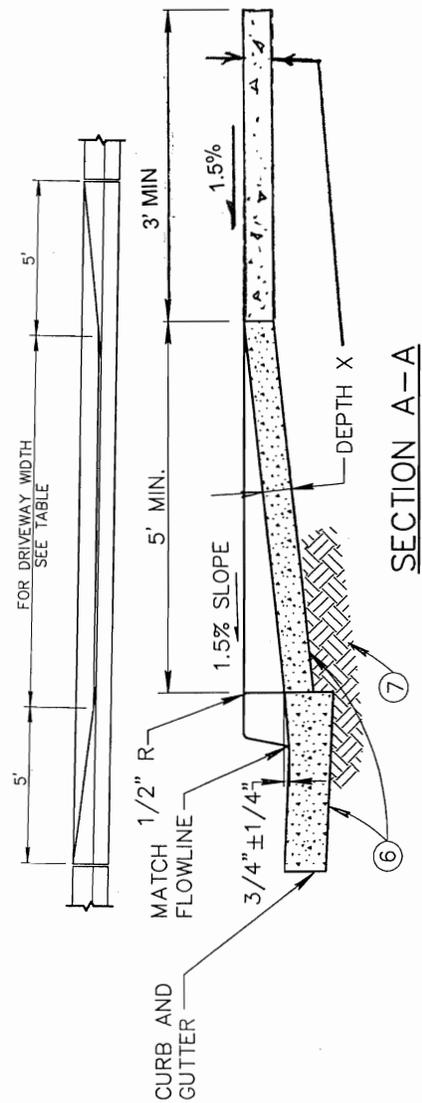
DETAIL NO. **250** **STANDARD DETAIL** **DRIVEWAY ENTRANCES** **ENGLISH** **250-1**

MARICOPA ASSOCIATION of GOVERNMENTS

REVISION 01-01-2009 **9** DETAIL NO. **250-1**



DRIVEWAY WITH SIDEWALK ATTACHED TO CURB



NOTES:

1. DEPRESSED CURB SHALL BE PAID FOR AT THE UNIT PRICE BID FOR THE TYPE OF CURB USED AT THAT LOCATION.
2. WHEN WIDTH EXCEEDS 22' PROVIDE A CONTRACTION JOINT ON D/W CENTERLINE.
3. CONTRACTION JOINT.
4. EXPANSION JOINTS SHALL COMPLY WITH SECTION 340.
5. BACK OF CURB - CONSTRUCTION JOINT
6. CLASS 'B' CONCRETE, SECT. 725.
7. SUBGRADE PREPARATION, SECT. 301.
8. FLOW LINE OF GUTTER.
9. DEPRESSED CURB.
10. SECTION A - A AND ELEVATION, DW SHOWN WITH VERTICAL CURB AND GUTTER, ROLL TYPE CURB AND GUTTER TREATED SIMILARLY.

COMMERCIAL AND INDUSTRIAL			
DRIVEWAY WIDTH	MIN.	MAX.	CLASS DEPTH
COMMERCIAL	* 16'	40'	B 6"
INDUSTRIAL	* 16'	40'	B 6"
* 24' MIN. FOR TWO WAY TRAFFIC			
RESIDENTIAL			
DRIVEWAY WIDTH	MIN.	MAX.	CLASS DEPTH
MAJOR STREET	16'	30'	B 5"
COLLECTOR STREET	* 12'	30'	B 5"
LOCAL STREET	12'	30'	B 5"
* 16' DESIRABLE			

 <p>MARICOPA ASSOCIATION of GOVERNMENTS</p>	<p>STANDARD DETAIL ENGLISH</p>	<p>DRIVEWAY ENTRANCES</p>
<p>DETAIL NO. 250</p>	<p>REVISED 01-01-2008</p>	<p>DETAIL NO. 250-2</p>

Section 714

Microsurfacing Materials

714.1 GENERAL:

Microsurfacing/microseal shall consist of a properly proportioned mixture of cationic polymer modified asphalt emulsion, mineral aggregates, mineral filler, water, and other additives.

714.2 AGGREGATE:

714.2.1 Mineral Filler: Mineral filler, as required by the mix design, shall be any recognized brand of nonairentrained Type I normal Portland cement that is free of lumps and clods, with a minimum of 85% passing the #200 sieve, added by weight of aggregate as specified by the mix design.

714.2.2 Mineral Aggregate: Mineral aggregate shall consist of sound, durable crushed stone or crushed gravel, as per MAG Section 701, and approved mineral filler. The material shall be free from vegetable matter and other deleterious substances. Aggregates shall be 100% crushed with no rounded particles. No natural sand will be allowed. The gradation of mineral aggregate shall conform to Table 714-1.

Table 714-1			
Microseal Aggregate			
Percent Passing			
Sieve Size	Rut Filling	Type III	Type II
½	100	100	100
3/8	85-95	100	100
No. 4	55-75	70-90	85-100
No. 8	45-55	45-70	65-90
No. 16	25-10	28-50	45-70
No. 30	19-34	19-34	30-50
No. 50	10-20	12-25	18-30
No. 100	7-18	7-18	10-21
No. 200	5-15	5-15	5-15
Application Rate Pounds/Sq. Yd.	30-35	24-35	18-24

714.3 Bituminous Material:

The polymerized Cationic Emulsion is herein classified as CSS-1H, quick-setting, cationic type emulsion for mixing applications and seal coats. A minimum of 4% saturated polymer shall be high sheared into the asphalt prior to the emulsification process. The Agency may choose to sample the polymerized asphalt for testing. The amount of polymer will be based on weight of polymer and asphalt (total weight) and be certified by the supplier. The polymerized emulsion will meet the following specifications listed in Table 714-2.

Table 714-2		
Microseal Emulsion		
Test	AASHTO Method	Specification Limits
Tests on Emulsion		
Viscosity, SSF, @ 771F. sec.	T-59	15-100
Sieve Test, %	T-59	0.10 Maximum
Particle Charge	T-59	Positive
Storage Stability, 24 hr. %	T-59	0.1 Maximum
Evaporation Residue, %	Arizona 512	60 Minimum
Tests on Evaporation Residue Arizona 504		
Kinematic Viscosity 2751F.cst	T-201	650 Minimum
Penetration, 771F 100g @ 5 sec	T-49	40-90
Softening Point, degrees F.	T-53	140 Minimum
Ductibility, 77%, 5 cm/min.	T-51	60 Minimum
Tests on Evaporation Residue after RFTO		
Kinematic Viscosity, 2751F. aging ratio, cst	T-201	2.5 Maximum
Softening Point, degrees F.	T-53	140 Minimum

* The emulsion, upon standing undisturbed for a period of twenty-four (24) hours, shall show no white or milky colored substance on its surface, and shall be a homogeneous brown color throughout.

714.4 Modifier Type And Content:

The modifier shall be saturated. The asphalt cement shall contain a minimum of 4% solid polymer by weight of asphalt residue, sheared into the asphalt prior to emulsification.

714.5 Water:

Water shall be potable water, free of any injurious impurities. The Contractor shall state the source of water with the bid.

714.6 Additives:

Additives may be used to accelerate or retard the breaking point and set times of the mix, or to improve the resulting finished surface.

The use of additives in the mix shall be supplied in quantities predetermined by the laboratory mix design.

714.7 Test Certificates And Reports:

Test certificates and reports for the bituminous material shall be furnished in accordance with Section 711.3.



March 5, 2008

To: MAG Standard Specifications and Details Committee

From: Jeff Van Skike, City of Phoenix

Subject: Modification to Section 345, Adjusting Frames, Covers, Valve Boxes and Water Meter Boxes

Contractors applying paving on private or commercial development projects often fail to locate utility structures that will require raising and adjustment to finished grade. This change will ensure that the responsibility for locating those items is clear and that they are not lost under the new roadway surface.

Add to the end of Section 345.1:

The contractor responsible for the surface improvements, i.e., concrete and/or asphalt paving, shall also be responsible for the careful identification and location of all utility devices requiring future adjustment within the new pavement section, including manholes, water valves, sewer clean-outs, vaults, etc. These devices shall be referenced by the appropriate use of swing ties and GPS datum.