

December 18, 2013

TO: Members of the MAG Standard Specifications and Details Committee

FROM: Tom Wilhite, City of Tempe, Chair

SUBJECT: MEETING NOTIFICATION AND TRANSMITTAL OF TENTATIVE AGENDA

Wednesday, January 8, 2014 at 1:30 p.m.
MAG Office, Suite 200 (Second Floor), Ironwood Room
302 North 1st Avenue, Phoenix

A meeting of the MAG Specifications and Details Committee has been scheduled for the time and place noted above. Members of the MAG Specifications and Details Committee may attend the meeting either in person, by videoconference or by telephone conference call. If you have any questions regarding the meeting, please contact Committee Chair Tom Wilhite at 480-350-2921 or Gordon Tyus, MAG staff at 602-254-6300.

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

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

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

MAG Standard Specifications and Details Committee
TENTATIVE AGENDA
January 8, 2014

COMMITTEE ACTION REQUESTED

- | | |
|--|--|
| 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 September 4, 2013, Meeting Minutes</u> | 3. Review and approve minutes of the September 4, 2013 meeting. |
| 4. <u>Laser Testing of Pipe Construction</u>
Presentation provided by Cues, Inc. | 4. Information and discussion. |

Carry Forward Cases from 2013

- | | |
|--|---|
| 5. <u>Case 13-15:</u>
Revisions to MAG Sections 601, 603, 615 and 618 for installing rigid and flexible pipe.. | 5. Information and discussion.
Sponsor: Warren White, Chandler |
| 6. <u>Case 13-21:</u>
Create a new Section 742 Pre Cast Manhole Bases. Add details for construction and installation. | 6. Information and discussion.
Sponsor: Craig Sharp, Buckeye |
| 7. <u>Case 13-22:</u>
Update Sections 625 and 775 to remove references to steps and the use of bricks in manholes. | 7. Information and discussion.
Sponsor: Craig Sharp, Buckeye |

New Cases for 2014

- | | |
|---|--|
| 8. <u>Case 14-01: Misc. Corrections</u>
A. Change “transverse” to “longitudinal” in
Section 321.8.2 | 8. Information and discussion.
Sponsor: Rod Ramos, Scottsdale |
| 9. <u>Case 14-02: Revision to Section 405
Monuments</u>
Update specification to match current details
and requirements. | 9. Information and discussion.
Sponsor: Bob Herz, MCDOT |
| 10. <u>Case 14-03: Updates to Guardrail Details</u>
Revisions to Section 415 and/or inclusion of
MCDOT guardrail details. | 10. Information and discussion.
Sponsor: Bob Herz, MCDOT |

General Discussion

- | | |
|---|--|
| 11. <u>Working Group Reports</u> | 11. Information and discussion.
Water/Sewer Chair: Jim Badowich
Asphalt Chair: Jeff Benedict
Materials Chair: Brian Gallimore
Concrete Chair: Jeff Hearne
Outside ROW: Peter Kandaris |
| 12. <u>General Discussion</u>
Staff Report on 2014 Revision and Update
Packet availability. | 12. Information and discussion. |
| 13. <u>Request for Future Agenda Items</u> | 13. Information and discussion. |

Adjournment

**2014 MAG Specifications and Details Committee
Ironwood, 2nd Floor**

January 8, 2014	1:30 pm	
February 5, 2014	1:30 pm	
March 5, 2014	1:30 pm	
April 2, 2014	1:30 pm	
May 7, 2014	1:30 pm	
June 4, 2014	1:30 pm	
July 2, 2014	1:30 pm	
August 6, 2014	1:30 pm	
September 3, 2014	1:30 pm	
October 1, 2014	1:30 pm	(if necessary)

LIST OF MEMBERS
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MAG Standard Specifications and Details Committee

Page 1 of 4
January 2014

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April 2013

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

September 4, 2013

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

AGENCY MEMBERS

Jim Badowich, Avondale, Vice Chair
Craig Sharp, Buckeye (proxy)
Warren White, Chandler
Antonio Hernandez, El Mirage
Tom Condit, Gilbert
Mark Ivanich, Glendale
Troy Tobiasson, Goodyear
Bob Herz, MCDOT
Bob Draper, Mesa

Dan Nissen, Peoria
Syd Anderson, Phoenix (St. Trans.)
Jami Erickson, Phoenix (Water)
* Rodney Ramos, Scottsdale
Jason Mahkovtz, Surprise
Tom Wilhite, Tempe, Chair
* Harvey Estrada, Valley Metro
Gregory Arrington, Youngtown

ADVISORY MEMBERS

Jeff Benedict, ARPA
Slade Ottney, NUCA
Tony Braun, NUCA
Adrian Green, AGC
Brian Gallimore, AGC

Jeff Hearne, ARPA
Peter Kandarlis, Independent
Paul R. Nebeker, Independent
Jacob Rodriguez, SRP

MAG ADMINISTRATIVE STAFF

Gordon Tyus

* Members not attending or represented by proxy.

GUESTS/VISITORS

Bill Davis, ADS
Art Glover, FCDMC
Mike Hook, ACPA
Troy McGahey, New Horizon Sales
Steve Sutherland, New Horizon Sales
Arvid Veidmark, Specialized Services Co.
Stew Waller, Rinker

1. Call to Order

Chair Tom Wilhite called the meeting to order at 1:30 p.m.

2. Call to the Audience

Chair Wilhite opened the call to the audience. No members of the audience requested to speak.

3. Approval of Minutes

The members reviewed the August 7, 2013 meeting minutes. Dan Nissen introduced a motion to accept the minutes as written. Tom Condit seconded the motion. A voice vote of all ayes and no nays was recorded.

New 2013 Cases

4. Case 13-05: New Section 740 Polypropylene Pipe

Warren White reopened this previously approved case to make corrections that were discovered after it was voted on previously. He noted that the ASTM reference for storm drains was incorrect and was changed to the appropriate AASHTO specification. The ASTM references for sanitary sewer applications were also corrected. A final correction during the meeting changed the “and” to “or” in referencing the ASTM specs for sanitary sewers. Warren White moved to reopen the case and make the corrections as noted. Jami Erickson seconded the motion. A roll call vote was taken. The motion passed: 13 yes, 0 no, 1 abstaining, 2 not present.

5. Case 13-09: Revision to Section 321 Asphalt Penalty Tables

Raise penalties in tables based on City of Mesa supplement. Bob Draper said the final version in the packet had been revised to include committee recommendations from the last meeting. This version was discussed during the last asphalt working group meeting, and had no further changes. Seeing no further comments, Mr. Draper moved to accept Case 13-09 as presented. Bob Herz seconded the motion. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 2 not present.

6. Case 13-12: Revisions to Section 340: Concrete Curb, Gutter, Sidewalk, Sidewalk Ramps, Driveway and Alley Entrance

Incorporate agency supplements and update Section 340 to current practice. Peter Kandarlis thanked Jeff Hearne and Bob Herz for their assistance drafting the final language and corrections to this case. He said the case was reviewed by the concrete working group and only minor changes were made such as adding section numbers. Seeing no further comments, Mr.

Kandaris moved to accept the case as presented. Jim Badowich seconded the motion. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 2 not present.

7. Case 13-14: Revisions to Section 711 Paving Asphalt

Revise Section 711 to update AASHTO references and add a new polymer modified section.

Jeff Benedict said after the final version of Section 711 was approved at the last meeting, a few minor corrections were found. These changes were outlined on the case cover memo and included moving the PAV aging temps in table 711-1 as well as its heading, removing the extra test temperature of 25C in table 711-2, and changing the solubility test in table 711-2. Mr. Herz said the new test uses less hazardous materials. Mr. Herz also noted a spelling error of the word “waived” in note 1 after each table. Mr. Benedict moved to reopen the case, make the corrections he described as well as the spelling correction. Bob Draper seconded the motion. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 2 not present.

8. Case 13-15: Revisions to MAG Sections 603, 615 and 618 for Flexible Pipe.

Update pipe installation requirements to allow for flexible pipe types. Warren White noted a handout was provided that presented a roadmap of the intended direction of the case based on feedback from the committee and working group. One of the decisions was to move all the testing from Sections 615 and 618 into Section 611. Mr. White also said the case includes revisions to Details 200-1 and 200-2 to update the terminology to match ASTM standards. Syd Anderson asked if this would change in the specifications as well. Mr. White said it would, and went on to explain the handout that listed what sections were affected as well as providing definitions for the terms. He said work would continue on this case in the water/sewer working group. Case 13-15 will be carried forward to 2014.

9. Case 13-16: Revision to Section 602; Trenchless Installation of Steel Casing

Retitle and revise Section 602 to match current industry standards. Jim Badowich said revisions were made to the case at the water/sewer working group meeting and additional changes were made this morning. The latest version was provided during the meeting. Changes included clarifying 602.2 for the size of the steel casing for pressurized and gravity pipe applications. He thanked Arvid Veidmark for his assistance developing the case. Bob Herz noted that one of his changes (clarifying the language in Section 602.5) was not included. He provided a copy of an email that outlined the language change. Mr. Veidmark said he misunderstood the request and would accept the change.

Bob Draper asked about the annular fill requirement of pea gravel. Jami Erickson said Phoenix wanted to leave it to be determined by the agency. Mr. Veidmark said ADOT no longer fills the casing to make it easier to remove the pipe if necessary. He said even the railroads are moving to thicker casing and not filling them. Mr. Herz suggested leaving pea gravel as a default since the agencies can specify the type of fill in special provisions. The final discussion item was on PVC conduits for dry utilities. Peter Kandaris said electrical conduits are filled with grout, but other utilities may not be. After some discussion of possible wording it was

decided to change the sentence to read, “The annular space between the casing and the carrier line shall be filled as indicated in the contract documents.”

Jim Badowich moved to accept the case with the final revisions discussed and agreed upon during the meeting. Troy Tobiasson seconded the motion. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 2 not present.

10. Case 13-19: Revisions to Section 345 - Adjusting Frames, Covers, Valve Boxes, and Water Meter Boxes.

Add the process of lowing and update the section for current practices. Brian Gallimore said the latest version added comments from the last materials working group meeting, where they reviewed the specification line by line and made compromises as needed. Antonio Hernandez asked if it included the steel ring in the collars. Mr. Gallimore said the specification referred to the detail, so if an agency had steel in their supplemental detail it would be used. Jami Erickson asked about the last paragraph of Section 345.2 regarding replacement. Mr. Gallimore said this language was the same as currently in MAG, stating that replacement of items occurs only if noted ahead of time.

Bob Herz asked other members about whether they can locate lowered items with a GPS. Bob Draper said Mesa normally uses tie-outs, but he was okay with GPS as an option. Ms. Erickson said using GPS is fine during final construction, but not necessarily for maintenance. She noted, however, that if there was an emergency, everyone would be at the site. Jim Badowich wanted to make sure the map and documentation was added that showed utility location with swing ties or GPS. There was discussion about the best way to word the third paragraph of Section 345.1, and whether to make it and/or or just or. The thought was to add “map documentation” before “swing ties or GPS locations.” Bob Draper said this could help reduce Mesa’s supplements.

Jim Badowich moved to accept the case with the final revisions discussed and agreed upon during the meeting. Syd Anderson seconded the motion. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 2 not present.

11. Case 13-21: Create a new Section 742 Pre Cast Manhole Bases. Add detail drawings for construction and installation.

Create a new section and details for pre-cast manhole bases. Craig Sharp said they are updating the current manhole details. He said these details would be further discussed at the working group meeting and said he planned to have them ready for the beginning of next year.

12. Case 13-22: Update Sections 625 and 775 to remove references to the use of bricks in manholes and remove references to manhole steps.

Update Sections 625 Manhole Construction to remove references to the use of bricks and manhole steps. Also remove these references in Section 775 Brick and Concrete Masonry Units. An updated version that corrected some typos was included in the agenda packet.

Additional work on this case as well as Case 13-21 is needed so they will be carried forward to 2014.

13. Case 13-23: Update and Revise Section 309 – Lime Stabilization or Modification of Subgrade.

Clarify use of lime for stabilization and modification purposes. Brain Gallimore said the case was extensively discussed at the last working group meeting, that included a showing a video of the application process. He said the latest version of the case addressed concerns about the safety and handling of lime materials in residential neighborhoods. Bob Herz said there were a few minor formatting corrections he wanted made including the consistent format of ASTM and AASHTO specifications (use of space and hyphens), as well as spelling out the word “and” instead of using the “&” symbol. Bob Draper moved to approve the case with the corrections noted by Mr. Herz. Antonio Hernandez seconded the motion. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 2 not present.

14. Case 13-24: Update Detail 270 Frame and Cover.

Make the depth of the cover 4”, remove the chain attachment, and make drafting corrections to Detail 270. Bob Herz said there had been no changes to the case in a while. Mr. Hernandez clarified that this case removed the chain from the cover. Seeing no further comment Mr. Herz moved to approve the case as presented. Craig Sharp seconded the motion. Mr. Tyus clarified that the motion included revisions to both Detail 270 and Detail 391-1. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 2 not present.

15. Case 13-25: Revise Section 729 Expansion Joint Filler.

Delete out of date specifications, and reference current active ASTM standards. Jeff Hearne said no changes have been made since July. He summarized the case as updating the ASTM references to be current. He noted that the updated specification will work along with the sidewalk and concrete paving updates the concrete working group is also reviewing. Seeing no further comments, Bob Herz moved to accept the case as presented. Warren White seconded the motion. A roll call vote was taken. The motion passed: 14 yes, 0 no, 0 abstaining, 2 not present.

16. Working Group Reports

Chair Wilhite asked for the working group reports.

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

The meeting notes from the August 20th meeting were included in the packet. Jim Badowich said there was a good turnout, and he thanked representatives from the concrete and plastic pipe industry for their work the past year. He said there was a lot of discussion on Case 13-15 at the last meeting. He felt things were starting to gel in regrouping the information and expanding Section 611 for testing. He said there will be extensive changes, but they have been needed for a long time. He said there was lots of discussion on the manhole and base details as well.

Bob Herz asked about updating directional boring specs. Mr. Badowich said it was discussed and could be a future item, although they do have their plates pretty full. He also said Rob Godwin from Goodyear will be continuing to work on updating Section 610. The next meeting is planned for September 17th at 1:30 in the MAG office.

b. Asphalt Working Group

Jeff Benedict said the meeting reviewed the items that were voting on during the meeting. He said two possible new items for review next year included:

1. The need for outside right-of-way pavement construction specifications for parking lots.
2. Revisions to Section 321 relating to permits. He said he would like feedback from agencies on how this currently is handled.

He said unless the need arose, the next meeting probably would not be until the beginning of next year.

c. Materials Working Group

Brian Gallimore said the cases they had been working on were just voted on, so they will be looking for new challenges to work on next year.

d. Concrete Working Groups

Jeff Hearne said they will continue to update the Portland Cement Concrete Pavement (PCCP) specifications. He said they would also be looking at pervious concrete for inclusion in the outside right-of-way specs. Mr. Hearne was expecting to get revisions to masonry specifications from industry representatives in this specialty.

e. Outside Right-of-Way Working Group

Peter Kandaris said he met with members before the committee meeting. His goal was to have a draft roadmap of what would be included in the document ready for discussion at the beginning of the year. He said additional work would be done via email with members. He said the outside specs can incorporate existing standards taken from MAG as well as agency supplements. He hoped other working groups can review and develop new outside right-of-way specifications, such as the pervious concrete Mr. Hearne mentioned. He wanted to establish the Outside Right-of-Way specifications as a separate section in 2014.

17. General Discussion

Chair Wilhite first declared that he did not believe an October meeting was necessary. No other members disagreed, so the next committee meeting will be in January of 2014. He then asked for general discussion items. Mr. Wilhite asked other members if they had worked on materials for low impact development, such as any new details or projects.

Bob Draper said he solicits suggestions for spec updates and feedback via email to others in his agency such as inspectors and directors.

Mr. Wilhite also brought up the topic of reclaimed water which was discussed in previous years. Mr. Badowich said at the time the state had taken up the issue, but he thought the County Health Department was now tasked to review projects.

Mr. Herz asked if any action was needed for next year's chair. Mr. Wilhite said he had been asked by MAG to serve an additional year as chair in order to get the committee back on the same schedule as other committees. He received approval from his director, and Mr. Badowich also agreed to serve an additional year as vice chair.

Mr. Tyus summarized the process of making changes to the MAG specifications book, details and update package. He said he would be writing summaries of the cases and preparing a packet for review by the agency public works directors. He agreed to provide members the mail list he had, so the contacts for the public works directors and/or city engineers could be updated as appropriate. Bob Herz asked that the final versions of the cases be posted on the website. Mr. Tyus agreed that they would be updated on the *Cases Under Consideration* page. He would also keep members updated via govDelivery email of the status of the case summary and update packet.

18. Adjournment:

Seeing no further business, the chair thanked members for their work this year and adjourned the meeting at 3:02 p.m.

2014 PROPOSED REVISIONS TO MAG SPECIFICATIONS AND DETAILS

(Updated information can be found on the website: <http://www.azmag.gov>)

CASE	DESCRIPTION	PROPOSED BY	MEMBER	SUBMITTAL DATE Last Revision	VOTE DATE	VOTE	
	CARRY FORWARD CASES FROM 2013						
13-15	Case 13-15: Revisions to MAG Sections 601, 603, 615 and 618 for installing rigid and flexible pipe.	Chandler/ Water-Sewer WG	Warren White	05/01/2013 09/04/2013		0 0 0	Yes No Abstain
13-21	Case 13-21: Create a new Section 742 Pre Cast Manhole Bases. Add detail drawings for construction and installation.	Buckeye/ Water-Sewer WG	Craig Sharpe	06/05/2013		0 0 0	Yes No Abstain
13-22	Case 13-22: Update Sections 625 and 775 to remove references to steps and the use of bricks in manholes.	Buckeye/ Water-Sewer WG	Craig Sharpe	06/05/2013 08/21/2013		0 0 0	Yes No Abstain
	NEW CASES FOR 2014						
14-01	Case 14-01: Miscellaneous Corrections: A. Change “transverse” to “longitudinal” in Section 321.8.2.	Scottsdale	Rod Ramos	01/08/2014		0 0 0	Yes No Abstain
14-02	Case 14-02: Revision to Section 405 Monuments. Update specification to match current details and requirements.	MCDOT	Bob Herz	01/08/2014		0 0 0	Yes No Abstain
14-03	Case 14-03: Updates to Guardrail Details. Revisions to Section 415 and/or inclusion of MCDOT guardrail details.	MCDOT	Bob Herz	01/08/2014		0 0 0	Yes No Abstain
14-04							
14-05							
14-06							



Chandler • Arizona
Where Values Make The Difference

MEMORANDUM

Case # 13-15

DATE: September 4th, 2013

TO: MAG Specifications and Details Committee Members

FROM: Warren White, City of Chandler Representative

SUBJECT: Status Update on Proposed Revisions to MAG Sections 601/603 and 615/618 +

In general, we've been looking at how best to streamline these specifications, but not lose relevant content along the way. Historically, Section 601 has covered rigid pipe installation while Section 603 (even though titled as HDPE Pipe) has covered flexible pipe installation and Sections 615 and 618 (and other pipe installation specs) refer back to 601/603 for trenching and backfill requirements.

Based on Working Group and Committee discussions, it was determined that the current terminology used in MAG related to the trench cross section (namely foundation, bedding and backfill) was not consistent with ASTM and has caused some confusion. Therefore, the proposed changes include updating areas in MAG pertinent to "Foundation", "Bedding", "Backfill (initial, final)", "Haunching", "Springline" and the "Pipe Embedment Zone". The Summary attached shows the affected sections and modifications under consideration.

Also, the trench detail shown on Dtl 200-2 has been revamped as the "Trench Cross Section" to clearly identify the new terminology used along with other changes on both pages of this detail. Updated revision attached.

There has also been discussion on pipe testing requirements this year. We seem to have a consensus to move the pipe testing requirements from Sections 615/618 into Section 611. This would be a NEW case for next year. Those installation specs would then refer back to Section 611 for the appropriate testing (or optional testing) depending on agency requirements.

We've also had a number of discussions on making Sections 601/603 specific to trench preparation and final backfill and have the installation Sections 615/618 handle aspects of the Pipe Embedment Zone. However, it became apparent that this was not the cleanest approach. So, the current direction is keeping 601/603 as "Trench Excavation, Backfilling and Compaction", as they are currently, but migrate certain overlapping content from 615/618 into 601/603. Markups for these changes will be available prior to the January MAG Meeting.

Here is a summary of where we are with this case and some incidental points.

- 1) Section 601: Rigid Pipe Trench Excavation, Backfilling and Compaction
 - Defining a rigid pipe as reinforced concrete pipe, non-reinforced concrete pipe, cast-in-place concrete pipe, reinforced concrete cylinder pipe, vitrified clay pipe, and iron water pipe.
 - ASTM consistent Trench Width Table 601-1.
 - ASTM consistent terminology.
 - Adding appropriate areas from Section 615/618
 - Adding reference to Section 602 for trenchless installations

- 2) Section 603: Flexible Pipe Trench Excavation, Backfilling and Compaction
 - Defining a flexible pipe as thermoplastic pipe or corrugated metal pipe and arches.
 - Same as 601 above

- 3) Section 615: Sewer Line Construction
 - Revise/Clarify for rigid vs flexible requirements.
 - Migrate appropriate areas to 601/603.
 - Remove testing information and reference Section 611 (DEPENDENT). Add language on what is required and/or options.

- 4) Section 618: Storm Drain Construction
 - Same as 615
 - Section 618.4 Jacking Pipe section will be looked at for inclusion into 602, then removal.

- 5) Detail 200: Backfill, Pavement and Surface Replacement
 - Revamped Trench Cross Section Detail with ASTM Terminology

- 6) Section 101: Definitions
 - Revisions as noted for ASTM terms.

- 7) Other Sections as noted for ASTM terms

MAG Case 13-15 Summary of Sections Related to ASTM Terminology Changes

August 20, 2013 – Update by Bill Davis

Revisions to Section 101 definitions:

Proposed revision #4 from July 10th case update by Warren White: “Revise and add certain trench excavation related definitions and terms in Section 101, to match ASTM: Backfill (initial, final), Bedding, Foundation, Haunching, Springline and Pipe Embedment Zone.”

A search through the MAG 2012 Specifications and Details Book for was conducted with the intent of identifying any discrepancies related to new definitions and or definition rewording. Here are the results:

Initial Backfill / Final Backfill:

- Adding new descriptions to section 101.2 (Definitions and Terms) based on 7-1-13 proposed definitions. Searches for “initial backfill” and “final backfill” do not yield conflicts. Final backfill is mentioned in sections 620.3.3, and section 620.3.4

Haunching:

- Adding this definition to section 101.2. Search for “haunch and haunching” yields no conflicts. Section 601.2.2 and 615.4 mentions the haunch area.

Springline:

- Adding this definition to section 101.2. Search for “springline” yields no conflicts. Usage of “springline” are consistent with new definition. Sections addressing springline are: 601.2.2, 601.4.2, 601.4.5, 618.4.

Bedding:

- Adding new description to section 101.2 (Definitions and Terms) based on 7-1-13 proposed definitions. Original MAG definition is to be modified.
 - Section 200 references refer to placement of material on geosynthetic fabric.
 - Section 601.2.2 references haunch area and/or bedding zone.
 - Section 601.2.3 should be reviewed for possible conflict.
 - Section 601.4.2 should be reviewed for possible conflict.
 - Section 601.4.3 should be reviewed for possible conflict.
 - Section 601.4.9 should be reviewed for possible conflict.
 - Section 603.4 uses original MAG definition and should be modified.

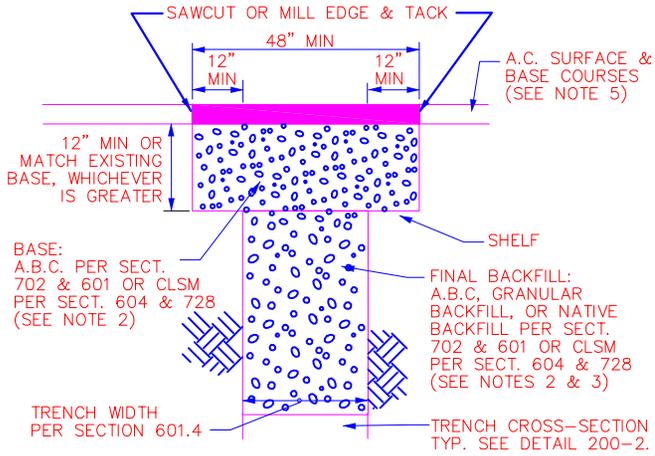
- Section 615.4 references back to 603.4 and should be modified.
- Other bedding references are in the form of “bedding, backfill, and compaction” reference and likely do not need modification.

Foundation:

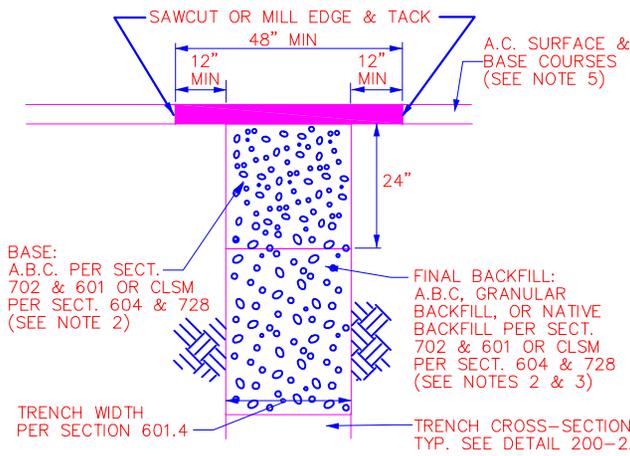
- Adding new description to section 101.2 (Definitions and Terms) based on 7-1-13 proposed definitions. Original MAG definition is to be modified.
 - References are predominantly related to “building, foundation, and structures.”
 - Section 601.3.5 uses foundation similar to new definition.
 - Section 601.4.1 should be review for possible modification.
 - Section 603.4.1 should be reviewed for possible modification, references back to 601.4.1

Pipe embedment zone:

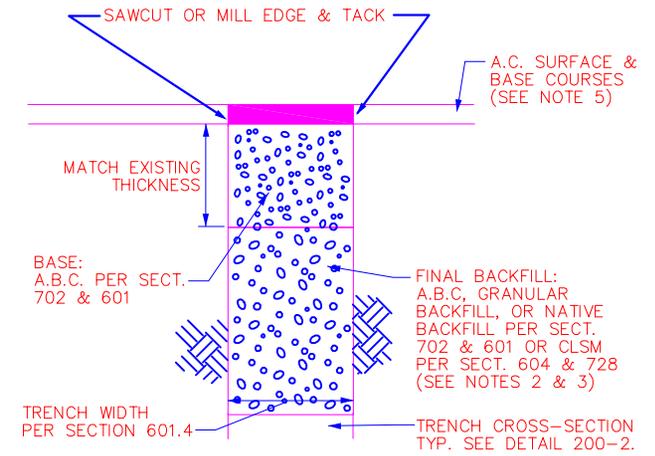
- Adding new descriptions to section 101.2 (Definitions and Terms) based on 7-1-13 proposed definitions. Searches for “pipe embedment zone” do not yield conflicts.



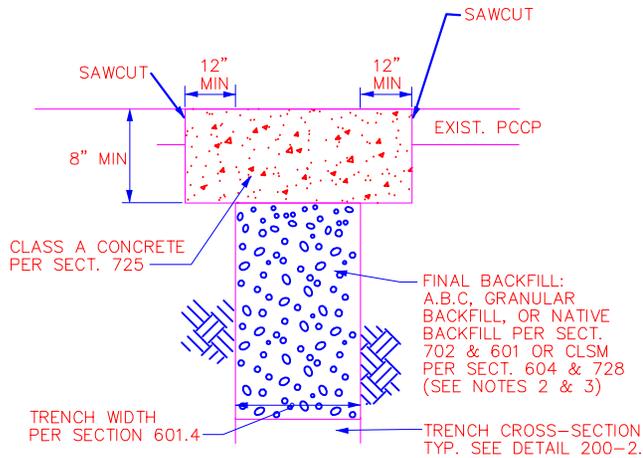
"T TOP" TRENCH REPAIR



TYPE "A" TRENCH REPAIR

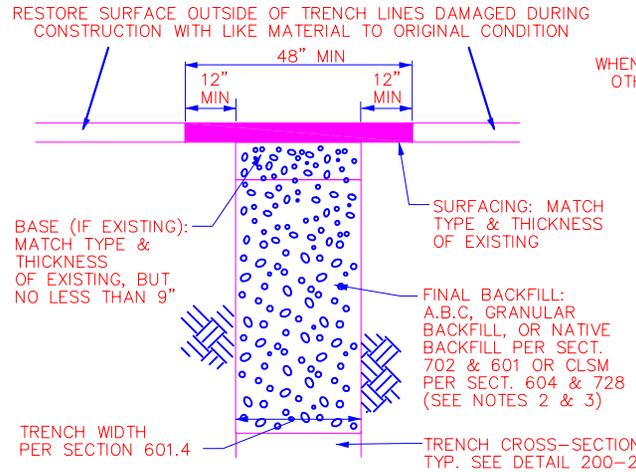


TYPE "B" TRENCH REPAIR



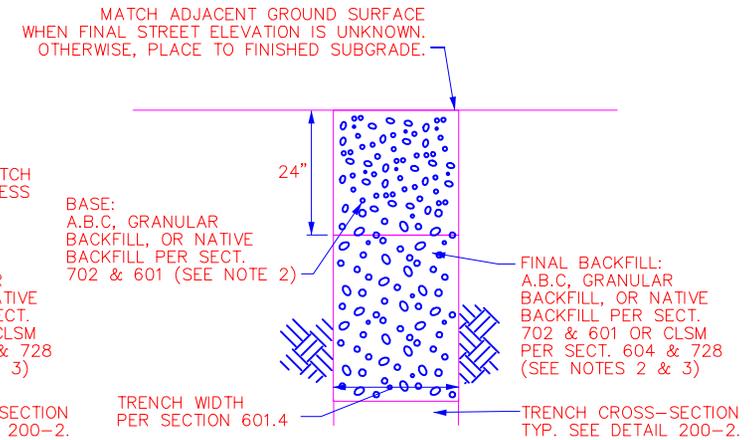
TYPE "C" TRENCH REPAIR

(TRENCH IN PORTLAND CEMENT CONCRETE PAVEMENT)



TYPE "D" TRENCH REPAIR

(TRENCH NOT UNDER CONCRETE OR ASPHALT PAVEMENT)



TYPE "E" TRENCH REPAIR

(TRENCH IN FUTURE ROADWAY PRISM OR ALLEY)

NOTES:

1. PAVEMENT MATCHING AND SURFACE REPLACEMENT SHALL BE IN ACCORDANCE WITH SECTION 336.
2. TYPE OF BACKFILL AND BASE (IF APPLICABLE) SHALL BE AS NOTED HEREIN UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS. IF NOT SPECIFIED, CLSM SHALL BE 1/2-SACK PER SECTIONS 604 AND 728.
3. TRENCHES LESS THAN 24" WIDE SHALL BE BACKFILLED FROM TOP OF BEDDING TO BOTTOM OF SURFACING MATERIALS WITH 1/2-SACK CLSM PER SECTIONS 604 AND 728.
4. BASE, FINAL BACKFILL AND PIPE EMBEDMENT ZONE. COMPACTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 601 OR SECTION 603.
5. ASPHALT CONCRETE SURFACE AND BASE COURSES SHALL COMPLY WITH SECTION 336.2.4.1 UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS.
6. USE TYPE "A" FOR LONGITUDINAL TRENCH REPAIR AND USE "T-TOP" FOR TRANSVERSE TRENCH REPAIR (SEE DETAIL 200-2) UNLESS OTHERWISE SPECIFIED IN CONTRACT DOCUMENTS. TYPE "B" TRENCH REPAIR MAY BE USED FOR TRANSVERSE TRENCH REPAIR IF SPECIFIED BY THE AGENCY.
7. PROVIDE MINIMUM 12" WIDE SHELF AS SHOWN IN "T-TOP" TRENCH REPAIR AT ENDS OF TYPE "A" TRENCH REPAIR EXCEPT WHERE EDGE ABUTS EXISTING CONCRETE.
8. USE "T-TOP" PAVEMENT REPLACEMENT WHERE A TRENCH IS NOT PARALLEL TO A STREET OR GOES THROUGH AN INTERSECTION.
9. SEE DETAIL 200-2 FOR REMNANT PAVEMENT REMOVAL REQUIREMENTS.
10. EXPOSED COPPER OR POLYETHYLENE WATER PIPE UP TO 2" IN DIAMETER IN TRENCHES TO BE BACKFILLED WITH CLSM SHALL BE WRAPPED WITH MINIMUM 3/4" THICK PREFORMED PIPE-COVERING FOAM INSULATION BEFORE PLACING CLSM.

DETAIL NO.
200-1



STANDARD DETAIL
ENGLISH

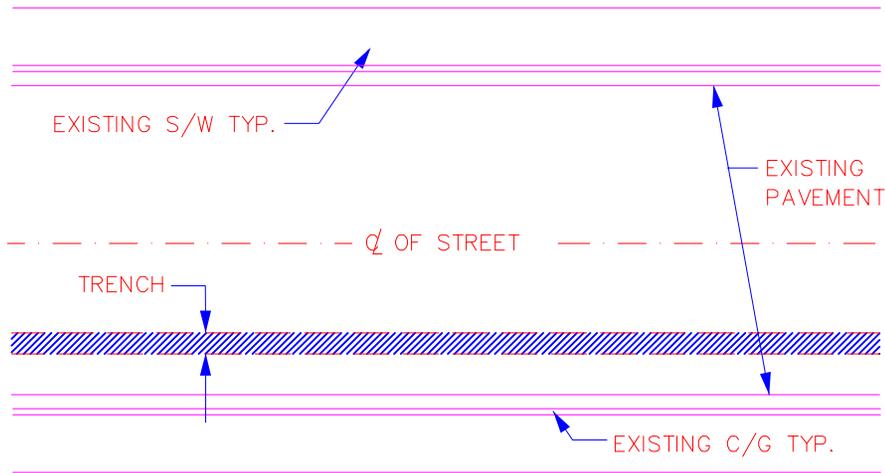
**BACKFILL, PAVEMENT
AND SURFACE REPLACEMENT**

PROPOSED
01-01-2015

DETAIL NO.
200-1

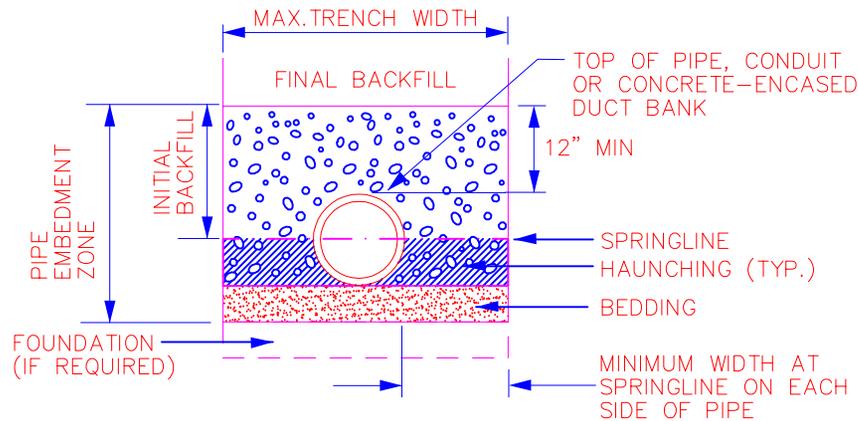
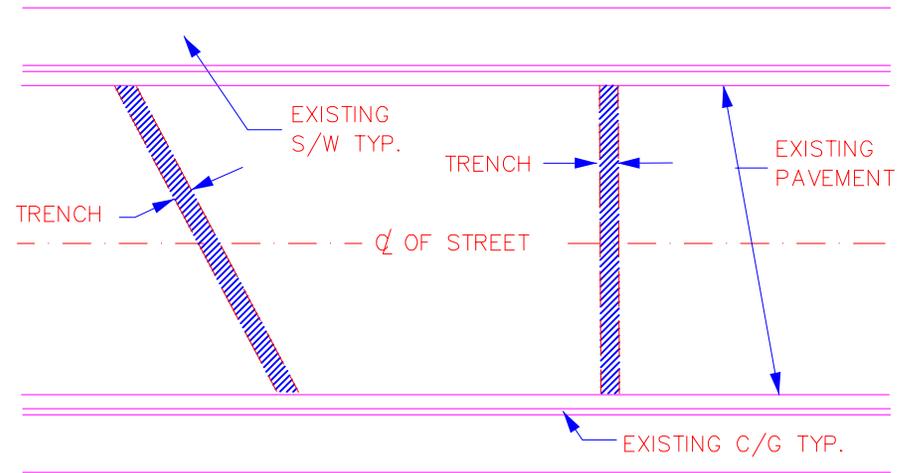
LONGITUDINAL TRENCH

(TRENCH IN PAVEMENT PARALLEL TO TRAFFIC)

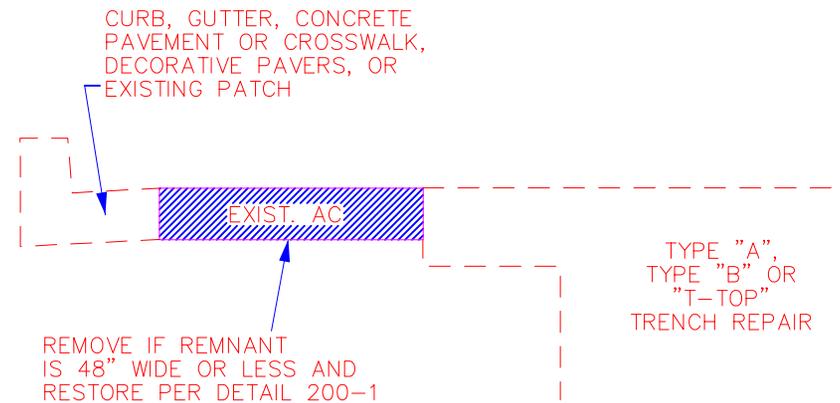


TRANSVERSE TRENCH

(TRENCH IN PAVEMENT NOT PARALLEL TO TRAFFIC)



TRENCH CROSS-SECTION DETAIL



REMNANT PAVEMENT REMOVAL

NOTES:

1. SEE SECTION 601 FOR RIGID PIPE INSTALLATION AND 603 FOR FLEXIBLE PIPE INSTALLATION.
2. SEE MAG DETAIL 200-1 FOR DETAILED TRENCH REPAIR REQUIREMENTS FOR TRENCH TYPES NOTED HEREIN.
3. SEE MAG DETAIL 211 FOR REQUIREMENTS REGARDING THE USE OF PLATING TRANSVERSE TRENCHES. USE OF STEEL PLATES SHALL NOT EXCEED 72 HOURS AFTER COMPLETION OF BACKFILL AND PRIOR TO FINAL PATCHING.

DETAIL NO.
200-2



STANDARD DETAIL
ENGLISH

**BACKFILL, PAVEMENT AND
SURFACE REPLACEMENT**

PROPOSED
01-01-2015

DETAIL NO.
200-2



TOWN OF BUCKEYE
Engineering Department

Case Number: 13-21

Date: 06-05-13

To: MAG Specifications and Details Committee

From: Craig Sharp

RE: Section 742 Pre Cast Manhole Bases

Purpose: Creating a new section and details for pre-cast manhole bases

Revisions:

Creating a new section and details for pre-cast manhole bases.

SECTION 742

PRE CAST MANHOLE BASES

742.1 GENERAL:

This specification covers the requirements of pre cast manhole bases for gravity sanitary sewer. When noted on the plans or in the special provisions pre cast manhole bases shall be constructed according to this specification. All pre cast manhole base manufacturers shall be NPCA (National Pre Cast Association) certified and shall provide all certifications upon request. Loading criteria for the pre cast base shall meet or exceed the AASHTO 1120 loading requirements. All pre cast manhole bases and risers shall be monolithically cast to ensure water tightness and have a certified structural design. An anti-float ring shall be cast with the base and riser during manufacturing.

742.2 MATERIALS:

742.2.1 Cementitious Materials: Cementitious materials shall conform to Section 725.2 and shall have a minimum compressive strength after 28 days of 4000 PSI.

742.2.2 Pre Cast Sections: Pre Cast sections shall conform to ASTM C478, AASHTO M199

742.2.3 Joints and Connections: Joints and connections shall conform to ASTM C425, C990 and C923.

742.3 CASTING TYPES:

All pre cast manhole bases shall be cast using either a dry cast or a wet cast system. Each manufacturer shall be proficient in their manner of casting and shall monitor and test the materials being used in the casting. The test results shall be available upon request by the contracting agency.

742.3.1 Wet Castings: Wet casting shall consist of pouring thoroughly mixed cementitious materials in its plastic form into a pre determined mold the size and shape required per the drawings or special provisions. Concrete shall be placed in forms and vibrated in such a manner to make a dense uniform product conforming to the plans and specifications.

742.3.2 Dry Castings: Dry casting shall consist of casting the base utilizing mechanized equipment with a zero (0) slump concrete between the core and jacket. Curing shall be by a kiln or a combination of tarps and moisture curing.

742.4 CUT OUT/KNOCK OUT:

Cut out of the precast base shall be done using a mechanical whole saw. The location of the whole shall be determined by the plans and specifications. After the core is removed from the casting the manufacturer shall coat all reinforcing with a corrosion inhibiting epoxy suitable for end use application. The thickness of the epoxy shall be per the manufacturer recommendation suitable for the end use application. Knock outs shall be formed in the location noted on the plans or specifications.

742.5 REINFORCING

Reinforcing for the base shall meet the following specifications:

- Wire ASTM A82 or A496
- Wire fabric A185 or A497

Design of the reinforcing shall be in accordance with ACI 318 and ASTM C890

742.6 GASKETS

A flexible pipe to manhole connector shall be used whenever a pipe penetrates into a pre cast concrete manhole or structure. The design of the connector shall provide a flexible, watertight seal between the pipe and the concrete. The connector shall assure that a seal is made between the structure wall and the pipe by:

- casting the connector integrally with the structure wall during the manufacturing process in a manor that will not pull out during pipe coupling.
- compressing the connector against the inside circumference of the structure by means of wedge or toggle style connection, expansion ring or other means approved by the engineer.

The connector shall be made of from materials that conform to the physical and chemical requirements outlined in the ASTM C923, and

The connector shall be sized specifically for the type of pipe being used and shall be installed in accordance with the recommendations of the manufacturer.

The connection hardware shall be constructed of a 316 stainless steel meeting ASTM A480. The hardware shall ensure a water tight connection between the concrete and the pipe material and shall provide an adequate seal enough to withstand the negative air pressure test per ASTM C-1244.

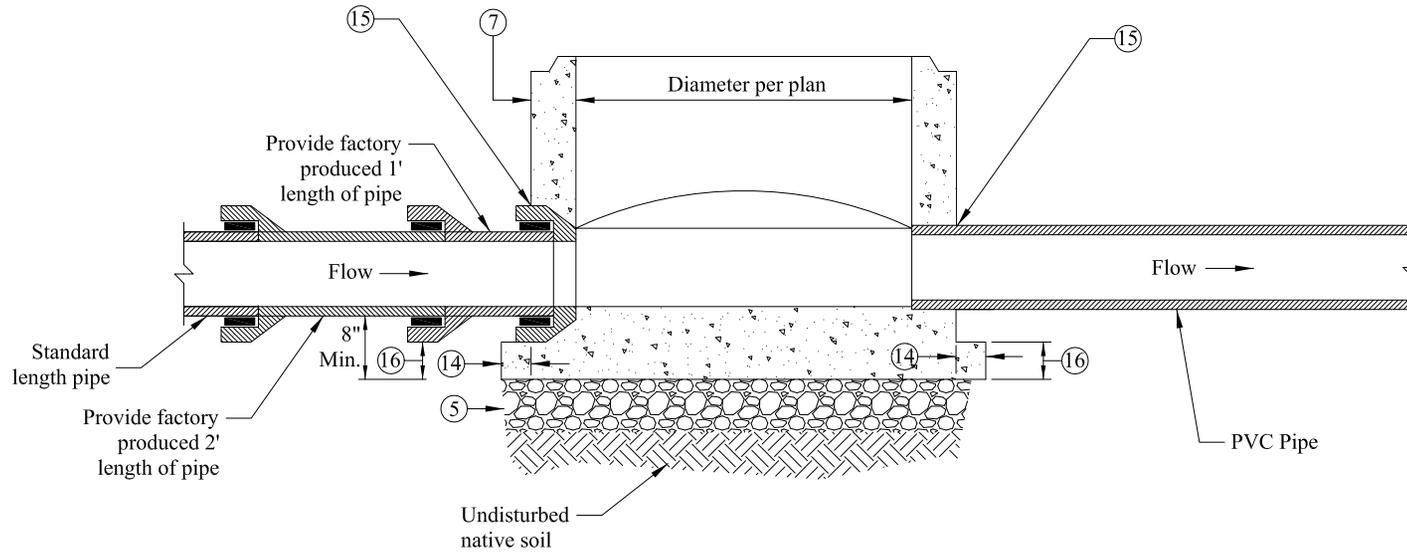
742.7 LIFTING DEVICES

Lifting devices shall be designed and evaluated by a registered professional engineer and have a minimum safety factor of 4. There shall be a minimum of 2 lifting points on every pre cast manhole base. After base installation, the lifting holes shall be thoroughly packed with a pre-packaged non-shrink grout. Bent reinforcing steel bars shall not be used as lifting devices. Through lifting holes will not be allowed.

742.8 IMPERFECTIONS

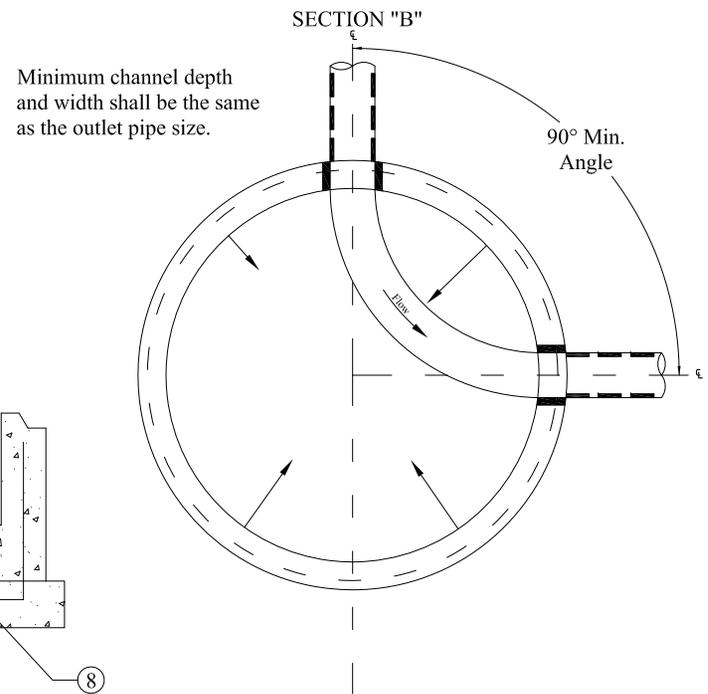
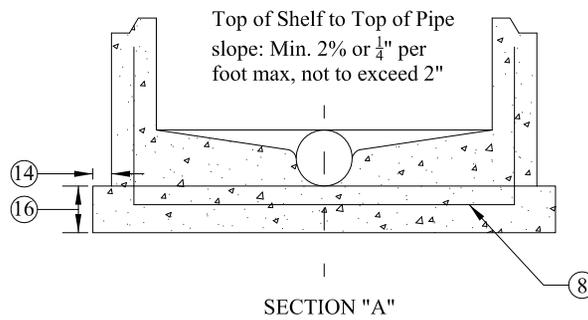
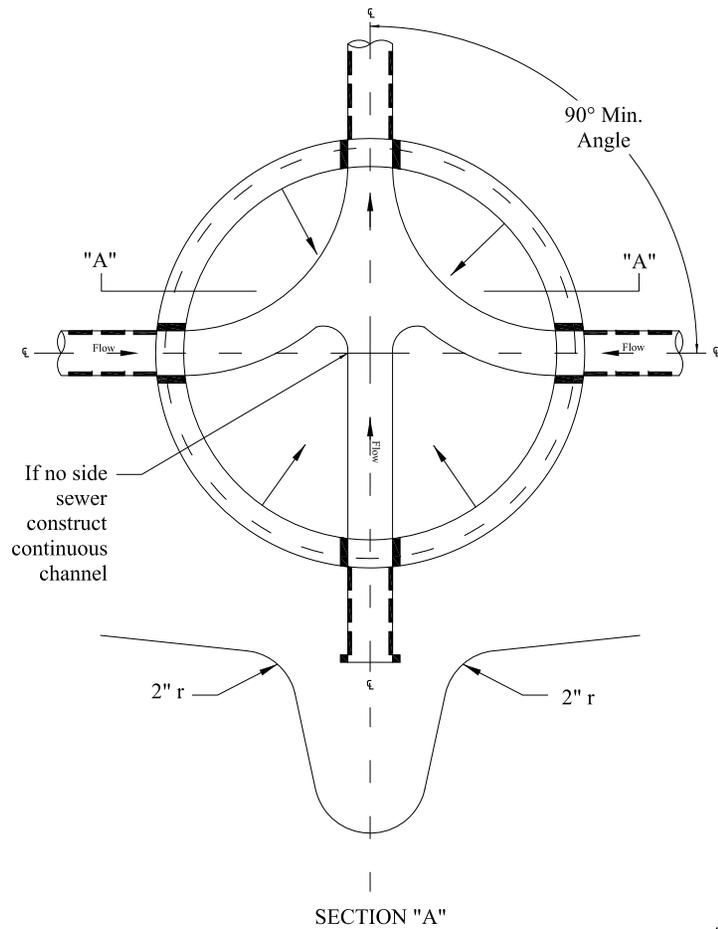
742.8.1 Imperfections: Any imperfections which in the opinion of the engineer may adversely affect the performance of the pre cast base shall be cause for rejection.

-End of Section -



GENERAL NOTES

- ①. Pre-Cast manufacturer shall be an NPCA certified plant.
- ②. MAG "A" 4000 PSI concrete shall be used for manhole bases per ASTM C478.
- ③. Spring line of cast-in-place bell shall stop at inside face of manhole.
- ④. Joints for barrel section shall be tongue and groove or lap joint. All lifting holes shall be sealed with non metallic non-shrink grout.
- ⑤. All pre-cast manhole bases shall be placed on 10" minimum of #57 crushed rock or 8" minimum ABC compacted to 100% relative density.
- ⑥. The contractor is liable for all invert alignment and shall not make any field modifications to the base.
- ⑦. Minimum wall thickness shall be 1/12 of the largest diameter of the pre-cast manhole base plus 1".
- ⑧. Reinforcement shall be designed by structural engineer.
- ⑨. Channel width shall remain constant through the manhole base.
- ⑩. There shall be no hard connections (grouted) into the manhole base.
- ⑪. All sewer service connections shall have the same connection types into the pre-cast manhole base.
- ⑫. All core holes into this structural pre-cast base shall be coated with approved coating material. All cores require special approval.
- ⑬. Base shall be cast monolithically with the manhole sides.
- ⑭. The minimum anti-float ring shall be 6" wide on 48" bases, 7" wide on 60" bases, and 8" wide on 72" bases.
- ⑮. Cast in place VCP bell w/ polyurethane joint per ASTM standard C425, A-Lok, Z-Lok field gaskets, pipe to manhole rubber boot, or approved equal per ASTM C425.
- ⑯. Anti-Float ring shall be a minimum of 5" thick.



DETAIL NO.
XXXX-2



STANDARD DETAIL
ENGLISH

PRE-CAST CONCRETE MANHOLE BASE

REVISED
01-01-2014

DETAIL NO.
XXXX-2



TOWN OF BUCKEYE
Engineering Department

Case Number: 13-22

Date : 06-05-13

Revised: 08-21-13

To: MAG Specifications and Details Committee

From: Craig Sharp

RE: Section 625 - Manhole construction and drop sewer connections

Section 775 – Bricks and masonry units

Purpose: Deleting references to bricks and steps in manholes

Revisions:

This revision is to delete references for the use of bricks and steps in sanitary sewer manholes.

SECTION 625

MANHOLE CONSTRUCTION AND DROP SEWER CONNECTIONS

625.1 DESCRIPTION:

625.1.1 Sewer Manholes: Construction shall consist of furnishing all materials and constructing manholes complete in place, as detailed, including foundation walls, ~~cast iron steps~~, manhole frames, covers, and any incidentals thereto, at locations shown on the plans.

625.1.2 Drop Sewer Connections: Construction shall consist of furnishing all materials and constructing drop sewer connections complete in place as detailed, including foundation materials, pipe, and any incidentals thereto, at locations shown on the plans.

625.2 MATERIALS:

Unless otherwise shown on the plans or specified in the special provisions, materials to be used shall conform with the following:

Bricks for manholes ~~Section 775 shall not be used.~~

Cement mortar for manholes Class D, Section [776](#).

Concrete for manholes Class A, for drop sewer connection Class C, Section [725](#).

Pipe used in manholes or drop sewer connections shall comply with pipe requirements of Section [615](#).

Manhole frame, cover ~~and steps~~ Section [787](#) and cast in accordance with standard details.

~~Plastic manhole steps, which conform to O.S.H.A. and A.S.T.M. C 487 requirements, and steel manhole steps, which are completely encapsulated in corrosion resistant rubber and conform to O.S.H.A. and A.S.T.M. C 478 requirements, may be substituted for cast iron manhole steps. The manufacturer shall furnish the Engineer a certification indicating conformance. Manhole steps shall not be used.~~

625.3 CONSTRUCTION METHODS:

625.3.1 Manholes: Manholes shall be constructed ~~of brick~~, of precast concrete sections, ~~or of~~ cast in place concrete, ~~with cast iron manhole steps~~, and frames and covers, in accordance with the standard details. The invert channels shall be smooth and semi-circular in shape, conforming to the inside of the adjacent sewer sections. Changes in direction of flow shall be made with a smooth curve, having a consistent radius as large as the manhole will permit with no angel points. Changes in size and grade of the channels shall be made gradually, ~~and evenly~~, and uniformly throughout the manhole base.

Invert channels ~~may shall~~ be formed of concrete and or brick masonry ~~having~~ a smooth mortared surface, may be half tile laid in concrete ~~or brick~~, or may be constructed by laying full section of sewer pipe through the manhole and breaking out the top half after the surrounding concrete ~~or brick masonry~~ has hardened. The floor bench of the manhole outside the channels shall be smoothed and shall slope towards the channels.

The excavation shall be in such a manor, access is maintained around the manhole base before, during, and after placement of the manhole. made cylindrical to a diameter sufficient in size to permit sheeting if necessary and leave room that the bricks may be laid in a workmanlike manner and the outside mortar coat properly applied or the precast concrete sections or forms may be properly assembled.

A concrete foundation of Class A concrete shall be poured in accordance with the Standard Details and Section [505](#).

~~Brickwork shall not be laid upon a concrete foundation less than 24 hours after such foundation has been poured. No brickwork shall be laid in water, nor, except as prescribed for curing, shall water be allowed to stand or run on any brickwork until the mortar has thoroughly set. Where new work is joined to existing unfinished work, the contact surfaces of the latter shall be thoroughly cleaned and moistened.~~

SECTION 625

~~Bricks shall be thoroughly moistened prior to placing, and shall be laid in full cement mortar beds. Every course may be a header course, but at least every fourth course shall be a header course. The horizontal cross section of the manhole shall be circular unless otherwise called for on the plans or standard details. An oval or egg shaped section will not be permitted. A double row lock course of brick in the manhole wall shall be arched over the top half of the circumference of all inlet and outlet pipes. The brick manholes shall be mortared outside with ½ inch of cement mortar as shown on the standard details. Inside of brick wall shall be neatly pointed. The mortar coat shall be cured with a liquid membrane forming compound conforming with Section 726 immediately after mortar has been placed and finished.~~

Frame and Cover. All machined surfaces on the frame and cover shall be such that the cover will lie flat in any position in the frame and have a uniform bearing through its entire circumference. Any frame and cover which creates any noise when passed over by automobiles shall be replaced. Frames shall be set firmly in a bed of mortar true to line and grade, all as shown on the plans and as called for in these specifications.

Backfilling shall be done in accordance with the requirements for trench backfilling as stated in Section [601](#).

625.3.2 Drop Sewer Connections: Drop sewer connections shall be constructed in conformance with standard details, as the case may be.

Backfilling shall be done in accordance with the requirements for trench backfilling as stated in Section [601](#).

625.4 MEASUREMENT:

Measurement will be per manhole installed, complete in place, regardless of depth.

625.5 PAYMENT:

Payment will be made at the contract unit price ~~bid~~ for each accepted manhole, and shall be compensation in full for furnishing and installing manhole, complete, with formed or pre-cast inverts, concrete foundation, sanitary sewer drop connections ladder rungs, sheeting and bracing, removal of obstructions cast iron frame and cover, excavation and backfill, paving cut replacement in excess of the applicable pay widths authorized in Section [336](#), and any incidentals thereto, in conformance with the plans and specifications.

~~Payment will be made at the unit price bid each, and shall be compensation in full for furnishing and installing vitrified clay pipe sanitary sewer drop connections, concrete encasement, excavation, backfilling, water settling, compaction, sheeting and bracing, removal of obstructions, paving cut replacement, in excess of the applicable pay widths authorized in Section [336](#), testing, and all work incidental thereto in conformance with the plans and specifications.~~

- End of Section -

SECTION 775

BRICK AND CONCRETE MASONRY UNITS (BLOCKS)

775.1 BRICK:

Brick shall be whole, sound, and hard burned and shall give a clear ringing sound when struck together. They shall be uniform in quality and shall be culled or sorted before delivery to the work.

775.1.1 Manhole Brick: ~~Sewer and water manhole b~~Brick shall conform, except for dimensional tolerances, to the requirements of ASTM C32, Grade MM.

~~Manhole b~~Brick shall conform to Table [775-1](#).

TABLE 775-1			
MANHOLE BRICK DIMENSIONS			
Brick	Inches Depth	Inches Width	Inches Length
Standard Size	2 1/4	3 1/2	7 1/2
Allowable Variations	±1/8	±1/8	±1/4

The following paragraphs shall be added to the section on visual inspection:

No individual brick shall be rejected unless it shows visual evidence of major cracking. A major crack is defined as one that has at least one complete separation, for a distance of 1 3/4 inches, through the brick in any direction, including any cored area. Such a crack shall be regarded as affecting the serviceability of the brick and shall be rejected and not used in the structure.

Fifty bricks may be sampled at random intervals from any cube for visual inspection. Of the 50 samples, 45 must pass visual inspection for major cracks. Should less than 45 pass, the cube of brick shall be rejected and the brick must not be used in the structure.

775.1.2 Building Brick: Building brick shall conform to the requirements of ASTM C62, grade MW.

775.1.3 Facing Brick: Facing brick shall conform to the requirements of ASTM C216, Grade MW, Type FBS. The size, color, and texture shall be as specified on the plans or as approved by the Engineer.

775.2 CONCRETE MASONRY UNITS:

Unless otherwise noted on the plans or special provisions, concrete masonry units shall conform to ASTM C90, Normal Weight, Type I with a minimum compressive strength of 1900 psi.

The units shall be fully cured and shall have been made not less than 28 days prior to delivery.

The moisture content at the time of delivery shall not exceed 30 percent of the minimum absorption value of the units. The Contractor shall provide any protection he deems necessary to maintain the units in this condition until time of use.

The linear change from saturated to cool oven dry shall not exceed 0.0054 inches per linear foot or 0.045 of 1 percent conducted in accordance with test method in ASTM C426.

The units shall be made with normal weight aggregate conforming to ASTM C33.

The nominal size of the units shall be as indicated on the plans. The overall dimensions for width, height and length shall differ by not more than ±1/8 inch from the specified standard dimensions. Standard dimensions of units are the manufacturer's designated dimensions. Nominal dimensions of units are equal to the standard dimensions plus the thickness of one mortar joint.

No less than 5 samples of the units shall be submitted to the Engineer for approval and to show the full variance of texture and full range of color. Units used in the work shall match the approved samples. These samples may be tested for strength.

SECTION 775

All units shall be sound and free of cracks or other defects that would interfere with the proper placing of the unit or would significantly impair the strength or permanence of the construction. When units are to be used in an exposed setting, the face or faces that are to be exposed shall not show chips or cracks, not otherwise permitted, or other imperfections when viewed from a distance of not less than 6 feet under diffused lighting.

Units that are intended to serve as a base for plaster or stucco shall have a sufficiently rough surface to afford a good bond.

End of Section -



SECTION 321

Longitudinal Joints of each course shall be staggered a minimum of 6 inches with relation to the longitudinal joint of the immediate underlying course cold ~~transverse~~ construction joint, the cold existing asphalt concrete shall be trimmed to a vertical face for its full depth and exposing a fresh face. The fresh face shall be tacked prior to placement of the adjacent course. After placement and finishing the new asphalt concrete, both sides of the joint shall be dense and the joint shall be smooth and tight. The surface in the area of the joint shall not deviate more than ¼ inch from a 12-foot straightedge, when tested with the straightedge placed across the joint, parallel to the centerline. The joint will be tack coated if required by the Engineer.

321.8.3 Asphalt Leveling Course: A leveling course shall be used when specified, or as directed in writing by the Engineer, to bring existing pavement to a uniform grade prior to placing an overlay or other course. If a leveling course is being applied on an Asphalt surface, a tack coat shall be applied. The compaction requirements contained in Section 321.10 do not apply to leveling courses.

321.8.4 Compaction; Asphalt Base Course and Surface Course: It is the contractor's responsibility to perform any desired Quality Control monitoring and/or testing during compaction operations to achieve the required compaction. The temperature of the asphalt concrete immediately behind the laydown machine shall meet the minimum requirements of Table 321-2. A probe type electronic thermometer with a current calibration sticker attached will be used to measure the temperature of the asphalt concrete mixture. When measuring the temperature of the mat, the probe shall be inserted at mid-depth and as horizontal as possible to the mat.

TABLE 321-2

MINIMUM ASPHALT CONCRETE PLACEMENT TEMPERATURE

Base ⁽¹⁾ Temp (°F)	Mat Thickness (inches)					
	½	¾	1	1 ½	2	3 and greater
40 - 50	---	---	310	300	285	275
50 - 60	---	310	300	295	280	270
60 - 70	310	300	290	285	275	265
70 - 80	300	290	285	280	270	265
80 - 90	290	280	270	270	265	260
+90	280	275	265	265	260	255

(1) Base on which mix is to be placed

Asphalt compaction equipment shall be of sufficient size and weight to accomplish the required compaction. All compaction equipment shall be operated and maintained in accordance with the manufacturer's recommendations and the project requirements. During the rolling operation, the speed of the roller shall not exceed 3 miles per hour, unless otherwise approved by the Engineer.

Pneumatic tired compactors shall be equipped with skirt-type devices mounted around the tires so that the temperature of the tires will be maintained during the compaction process.

The Engineer will determine the acceptability of the pavement compaction in accordance with Section 321.10.

321.8.5 Smoothness: The completed surfacing shall be thoroughly compacted, smooth and true to grade and cross-section and free from ruts, humps, depressions or irregularities. An acceptable surface shall not vary more than one-fourth (¼) inch from the lower edge of a 12-foot straightedge when the straightedge is placed parallel to the centerline of the roadway.

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

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



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: January 8, 2014

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Revision to Section 405 MONUMENTS

Case 14-02

PURPOSE: Update specification to match current details and requirements.

REVISION: See the attached redlined strike-out version of the specification for revisions followed by the proposed modified specification in final form.

SECTION 405**MONUMENTS****405.1 DESCRIPTION:**

This work shall consist of furnishing and installing ~~Portland cement concrete right-of-way monuments and~~ survey monuments at the locations shown on the plans or directed by the Engineer ~~and as specified~~.

Monuments shall conform to the standard details or details shown on the plan.

405.2 MATERIALS:

The concrete portion of monuments shall be constructed in accordance with the provisions in Sections 725 and 505.

Concrete shall be Class B.

Brass caps for survey monuments ~~will~~ shall be furnished by the Contractor unless otherwise specified ~~in the special provisions~~.

405.3 CONSTRUCTION:

In constructing precast monuments, the forms shall not be removed until after the concrete has hardened. Monuments that are ~~warped~~ improperly aligned will be rejected. The exposed surface of the finished monuments shall be uniform, of even texture, and shall be free from holes, cracks and chipped edges. The precast monuments shall not be transported to the work site until the concrete has cured.

Cast in place monuments shall be cast in drilled holes without the use of forms.

Survey monuments shall be aligned vertically in the ground.

The brass caps assembly shall be firmly embedded in the concrete cylinder placed in survey monuments before the concrete ~~block~~ has acquired its initial set ~~and shall be firmly bedded in the concrete~~. The concrete ~~block~~ cylinder shall be so located that, the reference point will fall within a 1 inch circle in the center of the brass cap.

405.4 INSTALLATION:

~~Right-of-way monuments shall be set firmly and vertically in the ground to a depth of at least 3 feet.~~

The tops of survey monument covers shall be set flush with the pavement surface.

~~Survey monuments shall be set in position after the first course of asphalt concrete.~~

405.4 MEASUREMENT:

Survey monuments will be measured by the number of each type of monument constructed and accepted.

405.5 PAYMENT:

Payment for monuments will be ~~at the contract unit price made on the basis of the prices bid~~ and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing the monuments, complete in place, ~~including asphalt seal and necessary excavation and backfill~~, as shown on the plans or as directed by the Engineer.

- End of Section -

PROPOSED SPECIFICATION IN FINAL FORM:

SECTION 405

MONUMENTS

405.1 DESCRIPTION:

This work shall consist of furnishing and installing survey monuments at the locations shown on the plans or directed by the Engineer.

Monuments shall conform to the standard details or details shown on the plan.

405.2 MATERIALS:

The concrete portion of monuments shall be constructed in accordance with the provisions in Sections 725 and 505. Concrete shall be Class B.

Brass caps for survey monuments shall be furnished by the Contractor unless otherwise specified.

405.3 CONSTRUCTION:

In constructing precast monuments, the forms shall not be removed until after the concrete has hardened. Monuments that are improperly aligned will be rejected. The exposed surface of the finished monuments shall be uniform, of even texture, and shall be free from holes, cracks and chipped edges. The precast monuments shall not be transported to the work site until the concrete has cured.

Cast in place monuments shall be cast in drilled holes without the use of forms.

Survey monuments shall be aligned vertically in the ground.

The brass cap assembly shall be firmly embedded in the concrete cylinder before the concrete has acquired its initial set. The concrete cylinder shall be so located that, the reference point will fall within a 1 inch circle in the center of the brass cap.

The tops of survey monument covers shall be set flush with the pavement surface.

405.4 MEASUREMENT:

Survey monuments will be measured by the number of each type of monument constructed and accepted.

405.5 PAYMENT:

Payment for monuments will be at the contract unit price and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing the monuments, complete in place, as shown on the plans or as directed by the Engineer.

- End of Section -



MARICOPA COUNTY
Department of Transportation

MEMORANDUM

Date: January 8, 2014

To: MAG Specifications and Details Committee

From: Robert Herz, MCDOT Representative

Subject: Guardrail Details and revisions to Section 415 FLEXIBLE METAL GUARDRAIL **Case 14-03**

PURPOSE: Notification of MCDOT's intention of revising its guardrail details.

REVISION: To be determined.

DISCUSSION: MCDOT will be revising the standard details for guardrail to have new guardrail installed with the top of rail height to be 31-inches, the current details have the top of rail height set at 28-inches. The revised details will be in the 2015 MCDOT Supplement to MAG Specifications and Details having a target publishing date of January 1, 2015. MAG Section 415 FLEXIBLE METAL GUARDRAIL references MCDOT guardrail details. If MAG agencies desire to keep the 28-inch guardrail height then MCDOT will provide its details to MAG for inclusion in the 2015 MAG Revisions.