

**Maricopa County
Department of Transportation
Inspection Guidelines**



**Maricopa County
Department of Transportation
2901 West Durango Street
Phoenix, AZ 85009
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Gender Usage: The use of terms he, she, his, her as used in this document are intended to be gender neutral and should not be interpreted as a gender bias.

DEFINITIONS / ABBREVIATIONS

- A. Centerline- imaginary line that is equidistance from the sides of the roadway.
- B. General Contractor - Party contracted to construct the infrastructure improvements. Responsible to obtain all permit and bonds necessary for project. Designated as the developer's field representative for the project. The Contractor shall warrant his/her work for a period of one year from date of acceptance of improvements by MCDOT.
- C. Certified Testing Laboratory - Party contracted to test construction materials, document and report the results. Test results are, typically, provided directly to the Engineer of Record.
- D. Date of Acceptance - Start date of warranty period as indicated on MCDOT letter, inspection punch list has been completed and final inspection accomplished.
- E. Developer - Party owning the subdivision property, responsible for completion and acceptance of the infrastructure improvements by Maricopa County, typically, the permit holder (permittee).
- F. Engineer of Record (EOR) ('Engineer') - Registered Civil Engineer hired by the Developer to investigate site, address concerns, design and assure infrastructure is completed in accordance with approved plans. The Engineer is responsible for addressing any design changes that may become necessary during construction, act as prime professional for the project, collaborate work between other professionals, assures that as-built plans submitted to MCDOT at completion of project accurately reflect existing conditions and provides an as-built certification for the subdivision.
- G. Engineer's Field Representative: Individual designated in writing by Engineer of Record to be his/her representative at the job site. The individual is required to be certified in the construction area(s) delegated to him/her for oversight and **not be an employee of the Contractor or Developer.**
- H. MAG - Maricopa Association of Governments
- I. MCDOT - Maricopa County Department of Transportation
- J. MCDOT Engineer - MCDOT representative (Engineer or their representative) who reviews and approves improvements plans. He/she coordinates with MCDOT Inspector on field progress. Reviews and approves plan changes (revisions/modifications) submitted by Engineer of Record, during construction.

- K. MOD-Map of Dedication
- L. MCDOT Inspector - Maricopa County field representative responsible for assuring project is completed safely and per approved plans/specifications or approved changes. He/she assures all documentation is provided and makes progression inspections to assure compliance. He/she provides regular progress reports and direct communication to the MCDOT Engineer and Engineer's Field Representative.
- M. Monument Line-Alignment nominally at 1/8 mile increments that bisect a section within a given Township and Range.
- N. MUTCD - Manual on Uniform Traffic Control Devices.
- O. P.I.- Plasticity Index
- P. R.L.S- Registered Land Surveyor
- Q. R/W.- Right-Of-Way
- R. R.R.S. - Roads of Regional Significance.
- S. Section Line-Alignment along the perimeter of any section within a given Township and Range
- T. S.L.I.D – Street Light Improvement District. Separate from subdivision improvements. SLID is for the construction, operation and maintenance of the subdivision street light system. The SLID is established through the Superintendent of Streets.
- U. Sub-Contractor: Party contracted by general contractor to accomplish portions of infrastructure improvement. Concerns/questions regarding project plans or specifications are directed to the general contractor who is responsible to present issues to the MCDOT Inspector.
- V. Testing Laboratory Representative - Individual who is certified to perform field tests. Collects construction material samples for laboratory analysis and reports results to Engineer's Field Representative.
- W. TCP - Traffic Control Plan

NOTICE TO PERMIT HOLDER

CONSTRUCTION

IN

MARICOPA COUNTY RIGHT-OF-WAY

- **PRIOR TO STARTING WORK:** You are required to contact Maricopa County Department of Transportation (MCDOT) to determine if a preconstruction conference is required for your project. The permit for work in the County Right-Of-Way (ROW) will be issued after the preconstruction meeting. Notify the MCDOT Permits Section at least two complete workdays in advance of commencing work in the ROW. Contact 506-8609 or 506-8794 and provide your permit number, start date, contact name and telephone number. The Permits Representative will notify the Engineering Inspector in your area and provide you his name and telephone number for future contact.

- **ALL WORK IN MCDOT ROW SHALL REQUIRE A TRAFFIC CONTROL PLAN (TCP):** The Permit Holder shall submit a TCP to Development Services at fax number 506-1021 at least 2 workdays (48 hours) prior to need. Approval/denial of the TCP will be given within TWO workdays. Work within the County ROW **shall not occur** without a TCP approved by Maricopa County. **TRAFFIC CONTROL IS THE RESPONSIBILITY OF THE PERMIT HOLDER.**

- **FOR CONSTRUCTION CHANGES:** During the course of a project, it may become necessary to deviate from the plans and specifications. To deviate from the plans and specifications the following must be performed.
 1. The request shall be submitted to Development Services by the Engineer of Record.
 2. If the change is deemed significant, a resubmission to the One Stop Shop may be required.
 2. A drawing must be attached to the request and the reason for the change noted.
 3. The request must be approved by Development Services **prior to performing the work.**

- **UPON COMPLETION OF THE WORK:** The Permit Holder shall schedule a pre-final inspection with the MCDOT Engineering Inspector once work is complete to assure timely release of the permit and bond. No partial acceptance of any project shall be authorized.

SEQUENCE OF EVENTS FOR CONDUCTING A PRE-JOB CONFERENCE

1. Introduction of Key Personnel - Attendees at meeting shall be Engineer of Record, Developer, Owner, Testing Lab Representative, Contractor and MCDOT Inspector.
2. Exchange individual business cards and meeting agenda.
3. Pass around the sign in sheet.
4. Roles and Responsibilities - The following items that should be clearly understood by all parties involved.
 - All correspondence shall go through the Engineer of Record.
 - Complete testing of the materials per MAG and County Resolutions are provided by the permittee.
 - The Engineer of Record or his designee provides the quality control (QC) on the project.
 - The County Inspector provides the quality assurance (QA) for the County prior to acceptance.
 - All work on and offsite will be the sole responsibility of the Contractor and will be monitored by the MCDOT Engineering inspector for compliance.
5. MCDOT Issues.
 - a. The MCDOT Resolution takes precedence over the MAG Specifications and the MCDOT Supplement to MAG.
 - b. The Developer shall designate the Engineer of Record PRIOR to the start of construction. The EOR shall submit to MCDOT a letter acknowledging this designation.
 - c. The Engineer of Record will be the point of contact for coordination and resolution of all design changes. He/she will coordinate the inspection dates and times with the MCDOT inspector. For design changes to the subdivision plans, he shall follow "For Construction Changes" as outlined in Notice to Permit Holder. Any changes to the working set of plans must be reflected on the as-builts.

The Engineer or his/her representative is responsible for continuous field inspection as per Maricopa County Resolution for Street Improvements, Installation of Utilities and Traffic Control (Resolution 93-03).

The EOR may, at his discretion, appoint a person to be his direct representative for field inspection of asphalt concrete and concrete. This person must be designated by an appointing letter from the EOR addressed to the MCDOT area inspector. The designated persons' qualifications shall be outlined in the appointing letter. This person shall not be a partner/stake holder in the project. The EOR shall provide progressive inspection certifications at each stage of construction to the MCDOT Inspector prior to commencing with subsequent construction. The stages of construction that require certification shall be determined by MCDOT.

- d. When underground utilities (water and sewer) are installed under a roadway, an operational letter or certification from the utility owner shall be required assuring that the new lines have been tested and accepted prior to start of asphalt paving.
- e. The Contractor shall notify the MCDOT Inspector when key construction is planned to begin. Key construction includes: grubbing, installation of underground utilities (water, sewer, and storm drain), subgrade preparation, and placement of ABC, blue top, concrete placement and AC placement. Additionally, the contractor will submit an asphalt concrete mix design for approval by fax (506-1021) a minimum of 2 workdays (48 hours) prior to commencement of paving. The Engineer of Record and the testing laboratory shall be on site prior to the start of any paving operations.
- f. All new pavement mixes shall be Super-pave in accordance with approved plans.
- g. All construction traffic is the responsibility of the Contractor. The Contractor will ensure that his traffic will follow designated routes set aside for construction traffic, approved by MCDOT and all vehicles are within legal size and weight limits for use on public streets. Additionally the contractor is responsible for dust control and the cleanliness of the streets. An earthmoving and dust control permit may also be required by Maricopa County Environmental Services (602) 506-8727. PM-10 Regulation (Dust Control) A dust control permit shall be required from Environmental Services. Submit your plan and obtain your dust control permit prior to start of construction. Traffic control plans shall be submitted to MCDOT and approved prior to commencement of any permitted construction in Maricopa County right-of-way. A 24-hour emergency telephone number shall be provided for traffic control. The telephone number shall be on each traffic control device.

- h. A grading and drainage clearance (permit) may be required by the Maricopa County Flood Control District (602) 506-7149.
- i. Contractor shall install all regulatory signs (i.e., stop, yield, speed limit, etc.) Street name signs are the responsibility of the developer, as are traffic barricades. All signs shall be installed to latest MCDOT supplement to MAG standards.
- j. Mailbox installation is the responsibility of the permittee.
- k. All work in Maricopa County ROW requires a permit. Before construction begins in Maricopa County right-of-way, a permit shall be obtained from MCDOT Development Services.
- l. Street Light Improvement District (SLID) is part of dry utility construction. The SLID is established with the Superintendent of Streets. SLID documentation is required prior to paving of roadway.

FLOW CHART FOR PERMITS

1. Final plat and infrastructure improvement plans must be approved prior to a permit being issued by MCDOT.
2. Typical infrastructure improvement plans should include, but not be limited to:
 - a. Dry Utilities (electric, telephone, fiber optics, cable television)
 - b. Natural Gas
 - c. Water & Sewer
 - d. Paving
 - e. Storm drainage
 - f. Landscaping
 - g. Signing and Striping
 - h. Documented legal access to the site (in first phase of project)
3. Reviewing agencies within Maricopa County
 - a. Flood Control District
 - b. Environmental Services
 - c. Planning and Development
 - d. MCDOT: review plans for conformance to current specifications.
 - e. Air Quality Division
4. Other Permits - MCDOT may require that other permits or clearance be obtained prior to issuing a construction permit. These may include but are not limited to, National Pollutant Discharge Elimination System (NPDES), SWPPP, Arizona Department of Agriculture, State Historic Preservation officer (SHPO) Dust permit etc.
5. Permit applicant is responsible and shall provide:
 - a. Provide Certificate of Insurance.
 - b. Performance Bond
 - c. Pay permit fee.
6. Construction Sequence
 - a. Phase certifications by Engineer of Record (page 14-16).
 - b. Progression (Q/A) inspections by MCDOT Inspector.
 - c. Applicant calls MCDOT Area Inspector 2 weeks in advance for pre-final inspection.

7. Pre-Final Inspection (First Inspection) (page 10-11).
 - a. Pre-final letter written to applicant with punch list.
 - b. Approval certification or punch list from Planning and Development and MCDOT Traffic Division included.
 - c. **Maximum of 45 calendar days to complete punch list or total re-inspection.**
 - d. Re-inspections by MCDOT Inspector.
 - e. Applicant posts a 10% warranty bond when prefinal punch list has been completed and calls for final inspection.
 - f. MCDOT acceptance letter to start warranty.
8. Final inspection letter written to applicant (Second Inspection) (page 12).
 - a. All punch list items completed and accepted.
 - b. MCDOT accepts streets for traffic control and one year warranty period begins.
9. Warranty Inspection (at 9th month of warranty)
 - a. Applicant notifies MCDOT to schedule one year warranty inspection (10% pre-final) within 90 days prior to bond expiration.
 - b. Warranty inspection is held. Punch list items given to applicant.
 - c. Within 45 days, final inspection held for completion of punch list items.
 - d. Letter written for acceptance.

PRE-FINAL INSPECTION

Permittee shall notify inspector a minimum of 2 weeks prior to date of requested pre-final. All work must be completed and ready for inspection. Pre-Finals will be scheduled on Tuesday, Wednesday, or Thursday. The Inspector will notify MCDOT Traffic Division to perform inspection for signs, pavement markings and any unforeseen traffic hazards.

The Engineer of Record must attend the pre-final inspection. If the Engineer is unable to attend, he will designate in writing his/her representative for the pre-final inspection. If the EOR or his representative is not present for the pre-final inspection, the inspection shall be rescheduled and additional inspection fees prior to the inspection.

Other suggested attendees: owner, concrete contractor, paving contractor and testing laboratory representative.

The following **items are required** prior to scheduling of the pre-final **or the inspection will not take place:**

- A water truck shall apply water to the streets one hour before start time of pre-final inspection
- EOR certified test reports for all phases of construction.
- Drainage Clearance letter from Planning and Development
- Letter of final acceptance from owning utility company for underground utilities (wet only).
- Inspection report from Traffic Engineering Division
- 3 copies of as-built plans
- 1 electronic copy of as-built plans in latest version of Micro-station
- Final letter of certification from Engineer of Record
- 8 ½"x11" Final Plat/MOD (3 copies)

During the inspection the project will be walked. The items to be inspected include, but are not limited to the following:

- A. Concrete work.
- B. Asphalt.
- C. Street name/traffic signs.
- D. Parkway grading.
- E. Striping.
- F. Drainage
- G. Landscaping

At the completion of the pre-final inspection, a punch list will be generated by MCDOT. The punch list will be typed and mailed to the Permittee and a copy sent to the Engineer of Record. The punch list items shall be completed within 45 days.

FINAL INSPECTION

Schedule final inspection as noted above for pre-final.

The following items are required at the time of the final inspection:

- Completed punch list.
- A water truck shall be required and a flow test performed.

At completion of the final inspection, if no additional items were noted as deficient, the project will be accepted for traffic control and an acceptance letter will be mailed. The subdivision/performance bond will be returned once a 10% warranty bond is posted. At this time the project enters the one-year warranty period.

WARRANTY INSPECTION

The Permittee will schedule the warranty inspection 90 days prior to the end of the warranty period. At this time the project will be inspected again. If no deficiencies are encountered, the warranty bond will be returned. If deficiencies are encountered, these deficiencies must be corrected within the warranty period before the bond is returned.

**MARICOPA COUNTY
DEPARTMENT OF TRANSPORTATION**

Design Engineer Construction Phase Certification

Permit No.
Description:

As Engineer of Record, I certify that the **Mass Grading** in the County Right-Of-Way, and storm water detention areas, have been completed in substantial conformance with the approved plans and specifications, as verified by actual field measurements performed in accordance with standard industry practices, and MAG and/or County Specifications. After underground utilities have been installed, the geo-technical engineering consultant, in accordance with standard industry practices, shall test all areas in the County Right-Of-Way for P.I. and percent passing #200 sieve. The test results shall be prepared by the geo-technical engineering consultant and forwarded to MCDOT for review and approval. The designed pavement structure has been modified based on the soil test results in accordance with standard industry practices, and MAG and/or County Specifications.

Signature

AZ Registration No.

Date

As Engineer of Record, I certify that the following listed **Underground Utilities** have been installed in substantial conformance with the approved plans and specifications, as verified by actual field measurements performed in accordance with standard industry practices, and MAG and/or County Specifications. Invert elevations and slope of line have been verified based upon the field measurements, and will be reflected on the as-built plans. Materials and installation procedures for sewer and water have been inspected by private utility company inspectors (at the Developer's expense) to verify compliance with the plans and specifications, in accordance with the terms and conditions of formal Main Extension Agreements approved by, and on file with, the Arizona Corporation Commission. Backfill material and compaction in County Right-Of-Way have been tested and verified by the geo-technical engineering consultant in accordance with standard industry practices, and MAG and/or County Specifications. Underground utilities installed were _____

Signature

AZ Registration No.

Date

January 25, 2010

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As Engineer of Record, I certify that all **Forms and Reinforcement** were installed in substantial conformance with the approved plans and specifications, as determined by actual field measurements performed in accordance with standard industry practices, and MAG and/or County Specifications. Field measurements will be reflected on the as-built plans. Material testing and structural inspections were performed by the geo-technical engineering consultant, in accordance with standard industry practices, Section 505 of the latest MAG Uniform Standard Specifications for Public Works Construction, and MCDOT Supplement. Box Culverts were constructed in accordance with ADOT Standard Details. Concrete structures installed were _____

Signature

AZ Registration No.

Date

As Engineer of Record, I certify that all **Sidewalks, Curb and Gutter, and ADA Ramps** were installed in substantial conformance with the approved plans and project specifications, as determined by actual field measurements performed in accordance with standard industry practices, and MAG and/or County Specifications. Field measurements will be reflected on the as-built plans. Material testing was performed by the geo-technical engineering consultant, in accordance with standard industry practices, Section 340 of the latest MAG Uniform Standard Specifications for Public Works Construction, and MCDOT Supplement.

Signature

AZ Registration No.

Date

As Engineer of Record, I certify that the **Drainage Structures** (catch basins, spillways, box culverts, etc.) were installed in substantial conformance with the approved plans and specifications, as determined by actual field measurements performed in accordance with standard industry practices, and MAG and/or County Specifications. Field measurements will be reflected on the as-built plans. Material testing and structural inspections were performed by the geo-technical engineering consultant, in accordance with standard industry practices and Section 505 of the latest MAG Uniform Standard Specifications for Public Works Construction and MCDOT Supplement. The geo-technical engineering consultant will submit special inspection certificates to the County, if required.

Signature

AZ Registration No.

Date

As Engineer of Record, I certify that the **backfill for sewer manholes** was installed per MAG specification sections 206.4.4 and 206.4.5.

January 25, 2010

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Signature

AZ Registration No.

Date

As Engineer of Record, I certify that the **Sub-grade under Pavement, Curb and Gutter, and Sidewalk Sections** has been tested for compaction by the geo-technical engineering consultant in accordance with standard industry practices, and as required in MAG Section 211 and MAG Section 301 and the Public Right-Of-way Resolutions for Unincorporated Areas of Maricopa County.

Signature

AZ Registration No.

Date

As Engineer of Record, I certify that the **Base Course Material** has been inspected and tested for compaction and thickness, as determined by the plans and specifications, by the geo-technical engineering consultant in accordance with standard industry practices, and as required in MAG Section 702 and Public Right-Of-way Resolutions for Unincorporated Areas of Maricopa County.

Signature

AZ Registration No.

Date

As Engineer of Record, I certify that the **Base Course of Asphalt Concrete** has been inspected and tested by the geo-technical engineering consultant in accordance with standard industry practices for minimum course thickness, density, cross-section and grade as determined by the plans and specifications, and as required in MAG Section 710.

Signature

AZ Registration No.

Date

As Engineer of Record, I certify that the **Wear Course of Asphalt Concrete** has been inspected and tested by the geo-technical engineering consultant in accordance with standard industry practices for minimum course thickness, density, cross-section and grade as determined by the plans and specifications, and as required in MAG Section 710.

Signature

AZ Registration No.

Date

**FINAL
AS-BUILT CERTIFICATION FORMAT**

As the Engineer of Record, I certify that these improvements were built in accordance with the approved plans and specifications. Test reports and as-built plans are submitted with this certification to your office.

I recommend approval and acceptance of these improvements as constructed under permit._____. For the project titled: _____, located at _____, S # _____ (Subdivisions Only)

Engineer's Signature

(Seal)

Date

Instruction to Engineer for completion of As-built Certification:

1. Fill in number from permit issued to Developer/Owner by Maricopa County Department of Transportation.
2. Fill in project title from plans cover sheet. If the project is a subdivision include the subdivision name and "S" number.
3. Fill in nearest major intersection or start of construction point. Example: Cotton Lane north of Bell Road.
4. Include all required test reports and as-built plans.
5. Sign, seal and date the as-built certification.
6. Submit packet to: Development Services Division

Maricopa County Department of Transportation
2901 West Durango Street
Phoenix, AZ 85009

ASPHALT MIX DESIGN NOTIFICATION

Submit asphalt concrete mix design to:

Chief Engineering Inspector
Development Services Division
Maricopa County Department of Transportation
2901 W. Durango St.
Phoenix, AZ 85009

The mix design must be submitted to MCDOT and approved 2 working days prior to commencement of paving.

Fax (602) 506-1021