

Maricopa County
Department of Transportation
Resolution



Maricopa County
Department of Transportation
2901 West Durango Street
Phoenix, AZ 85009
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**MARICOPA COUNTY RESOLUTION
FOR
PERMITS TO WORK IN DEDICATED
MARICOPA COUNTY RIGHT-OF-WAY
(RESOLUTION 2001-01)**

WHEREAS, it is necessary in the public interest that all uses within the right-of-way for public roads, streets, alleys and way by individuals, corporations, associations, and political subdivisions be regulated and controlled so that said public roads, streets alleys and way may be effectively utilized and maintained for their primary purposes as public ways, and

WHEREAS, the laws of the State of Arizona authorize the Board of Supervisors of Maricopa County to control and manage said public roads, streets and alleys within Maricopa County.

NOW, THEREFORE, BE IT RESOLVED that no person, corporation, association or other political subdivision shall, without obtaining a permit therefore, enter upon any public road, street, alley or way or upon the right-of-way of any public road, street, alley or way, not a State Highway, outside the corporate limits of any city or town for the purpose of performing construction, reconstruction, removal, repair, maintenance or any other work, including, but not limited to the following:

1. Pavement, curbs, gutters, driveways, sidewalks;
2. Drainage or flood control facilities;
3. Grading, oiling, graveling or any surfacing of any road, street, alley or way;
4. Water, gas, sewer or other types of pipelines;
5. Irrigation and waste water facilities;
6. Utility lines such as electric, television, telephones, communications and other franchised facilities;
7. Structures, signs (whether temporary or permanent);
8. Plantings, landscaping, watering and/or drainage systems, and decorative placements;
9. Any of the above which may overhang the public road, street, alley or way.
10. Stockpiling of material.
11. Special Events, i.e. parades, filming, events that obstruct or impact traffic.
12. Blanket permit for emergency repair and maintenance of existing utilities.

BE IT FURTHER RESOLVED that the Board of Supervisors of Maricopa County hereby authorizes the County Engineer to issue such permits.

BE IT FURTHER RESOLVED that all applications for such permits shall be in writing on such form as required by the Maricopa County Department of Transportation, unless waived in writing, by the County Engineer. The application shall be accompanied by no less than three (3) copies of plans, or similar exhibits of a size and in the quantity

prescribed by the Maricopa County Department of Transportation, sufficient to clearly illustrate the location, dimension, motive, method and purpose of the proposed work. Upon submittal, the applicant shall pay the applicable plan review fee as set forth in **Exhibit A**, herein.

Applicants for such permits may be either an owner or a contractor; however, the work may be performed only by (1) a contractor, (2) utility company, (3) governmental agency, or (4) resident owner of residential property, where the property owner proposes to do the work. **If the improvement to be constructed under the permit is not to become the property of the County of Maricopa, and if the applicant is someone other than the owner, the owner shall also sign the permit form indicating that he/she agrees to the conditions of the permit.** Permits shall be issued only to the person, corporation, association or political subdivision making application therefor and may not be assigned to another person, corporation, association or political subdivision by the permittee. If a permittee assigns his permit to another, the permit shall become void. A permit shall be valid for a maximum of one year from date of issue, or as indicated on the permit, unless cancelled sooner. If work is not completed within one year, or the allotted time period, a new permit must be obtained for such uncompleted work. The permit fee shall be based on the value of uncompleted work from the original permit, but in no case shall the new permit fee be less than twenty (20) percent of the original permit fee. If no work is performed after a permit is obtained, the permittee may apply for cancellation of the permit in writing, prior to expiration. If approved, the fee, less processing and twenty (20) percent review fee charged, shall be refunded to the permittee.

BE IT FURTHER RESOLVED that if any work is undertaken prior to securing a permit, the Maricopa County Department of Transportation may require the county road to be restored to its original condition prior to granting a permit, or may charge a reasonable fee not to exceed \$1,500, in addition to the normal permit fee for inspection and examination of the work completed prior to issuance of a permit. All work shall cease until the Maricopa County Department of Transportation determines whether the public road should be restored to its original condition or grants a permit in accordance with this resolution.

BE IT FURTHER RESOLVED that this resolution shall not prevent any person, corporation, association or political subdivision from maintaining any pipe or conduit lawfully on or under any public street, or from making excavation as may be necessary for the preservation of life or property when an urgent necessity therefor arises during the hours the offices of the Maricopa County Department of Transportation are closed, except that those making emergency use shall apply for a permit within one (1) business day after the offices are again opened. Traffic control as specified by MCDOT shall be provided by owner during such work.

BE IT FURTHER RESOLVED that all work done in said public roads, streets, alleys or ways shall be done in accordance with the permit and specifications of Maricopa County for such installation.

BE IT FURTHER RESOLVED that the Maricopa County Department of Transportation shall furnish to the applicants such engineering and inspection services as will determine if the improvements constructed are in accordance with permits granted and the specifications and details mentioned in this resolution. Any persons or corporation, association, or political subdivision, doing work under any permit as set forth in this resolution **shall notify the Department of Transportation at least one full working day in advance of the time and place the work will begin.**

BE IT FURTHER RESOLVED that the applicant shall, before any permit is issued, deposit with the Maricopa County Department of Transportation a permit fee as determined from the schedule of fees set forth in **Exhibit B**, herein.

BE IT FURTHER RESOLVED that the Maricopa County Department of Transportation shall require each applicant referred to in this resolution, before granting the permit, to deposit with this office an amount in cash or a performance bond of a sum up to 100% of the amount of the cost of work proposed in the application, as determined by the Maricopa County Department of Transportation, as a guarantee that the work will be completed in accordance with the permit and the County's adopted or approved details and specifications. The applicant shall be issued a receipt for a cash bond. Work bonded to Maricopa County under the provisions of the Subdivision Regulations is not required to be bonded under the provisions of this paragraph.

The bond shall be joint and several in form and made payable to Maricopa County Department of Transportation. The bond shall be signed by the applicant or the property owner if he/she is not the applicant, and a qualified surety company authorized to transact business in the State of Arizona. The condition shall be that the applicant will faithfully complete the work described in the application in accordance with the plans, specifications and conditions thereof.

The bond shall be released upon satisfactory completion and acceptance of the work, or may be cancelled after the applicant has provided other security satisfactory to the County which will cover obligations that remain.

No deposit shall be less than Two Hundred Fifty Dollars (\$250.00) on work done under this article.

In instances where an applicant is issued numerous small permits throughout the year, he may post a continuing bond to cover work under more than one permit; however, this continuing bond provision is not intended for use on new subdivision type work. The continuing bond shall be of value sufficient to cover all work under construction by the

permittee at any time and shall be satisfactory to the Maricopa County Department of Transportation.

The bond is subject to cancellation as noted above, or may be terminated after all obligations are fulfilled which were "permitted" prior to the Maricopa County Department of Transportation receiving cancellation notice from Surety. Surety shall not cancel, change or amend any bond without fifteen days prior written notice having been served on the Maricopa County Department of Transportation.

BE IT FURTHER RESOLVED that the permittee shall be responsible for all liability imposed by law for personal injury or property damage arising out of or related to work performed by the permittee under permit, or arising out of the claim of such liability is made against the County, its officers, agents, boards or employees. The permittee shall defend, indemnify and hold them, and each of them, harmless from such claim, including claims alleging the joint negligence of the County, its officers and employees and the permittee.

No applicant shall be entitled to a permit under this resolution unless and until he/she has filed and maintains on file with the Maricopa County Department of Transportation, a certificate certifying that he/she, and /or his/she company or business firm carries public liability and property damage insurance issued by an insurance carrier authorized to do business in the State of Arizona, insuring the applicant and the County and its agents, against loss by reason of injuries to, or death of persons or damages to property arising out of or related to work performed by the applicant, its agent's subcontractors or employees while performing any work under such permit. Such insurance shall be primary and provide coverage for all liability assumed by the applicant under this section, and shall be provided by any permittee in the following minimum amounts:

\$500,000 for death of, or injury to, any one person in any one accident;

\$1,000,000 for death of, or injuries to, more than one person in any one accident.

\$500,000 for damages to property.

Failure by the applicant to provide the Maricopa County Department of Transportation with such a certificate, and failure by the Maricopa County Department of Transportation to demand the filing by permittee of such a certificate before such a permit is issued, shall not be deemed to waive permittee's obligation to provide the insurance specified herein. Such insurance certificate shall remain in effect and be kept on file with the Maricopa County Department of Transportation until all work to be performed by the permittee under the permit has been completed.

Where an encroachment involves a permanent obstruction, such insurance certificate requirements and other resolution stipulations shall remain in effect until such obstruction is removed.

The insurance certificate shall provide that coverage cannot be cancelled or expire without providing fifteen days written notice of such action to the Maricopa County Department of Transportation.

No evidence of liability insurance or surety bond shall be required as a condition precedent to the issuance of a permit to: (1) a federal, state, county or municipal agency or political subdivision; or (2) any public service corporation with a net worth of more than \$1,000,000 as reflected by its most current balance sheet, or (3) a resident owner of a residential property where he/she proposes to perform construction himself/herself, in front of his/her own property which does not obstruct the public street.

No permit shall be issued for work within the right-of-way in which a contractor is engaged in a county road project without written permission from the contractor accompanying the application for permit.

BE IF FURTHER RESOLVED that installation of any permanent improvement that must be removed or relocated at a later time, due to a public improvement, as directed by the County Engineer, shall be accomplished within a reasonable time so as not to cause undo delay to Maricopa County. A separate permit shall be applied for and issued prior to removing or relocating the improvement in conflict and the owner shall bear all expenses.

FURTHERMORE, issue of permits as herein provided shall not eliminate any obligation by the applicant for any other permits that may be required by either federal, state, local or other county jurisdictions.

BE IT FURTHER RESOLVED that this Resolution is intended to replace the Resolutions of the Board of Supervisors dated October 5, 1970, October 20, 1975, August 2, 1982, and February 16, 1994.

BE IT FURTHER RESOLVED that the effective date of the revised provisions of this Resolution shall be the date of adoption.

Dated this day of , .

BY: _____
Chairman, Board of Supervisors

ATTEST: _____
Clerk, Board of Supervisors

EXHIBIT A
PLAN REVIEW FEES

Type of Review

Fee

Construction Plans

Commercial/ Residential Development	\$ 100.00 per sheet
Second and subsequent reviews	\$ 50.00 per sheet
Traffic Control Plan Review	\$ 30.00 each review
Public Utility Company	No charge
Home Owner Improvement (Own Frontage)	No charge
Municipalities with reciprocal agreement	No charge

Development Proposals

Zoning Cases	\$ 250.00 each
Development Master Plan Review (DPM)	\$ 500.00 each
Subdivision Plats	\$ 100.00 each
Existing Right-Of-Way Abandonment	\$ 250.00 each
Future Right-Of-Way Waivers	\$ 75.00 each

EXHIBIT B

SCHEDULE OF PERMIT FEES

Permit fee shall be based on 3 percent of the approved Engineer's cost estimate or project assurance bond.

Permit processing fee shall be \$ 50.00 per permit.

Early pavement cut fee shall be \$ 20.00 per linear foot.

**MARICOPA COUNTY RESOLUTION
FOR
STREET IMPROVEMENTS,
INSTALLATION OF UTILITIES AND TRAFFIC CONTROL
(RESOLUTION 2001-02)**

WHEREAS, it is necessary in the interest of public health, safety, welfare and convenience that standards and specifications be adopted for the construction and improvement of streets and utilities and for the safe use of the rights-of-way in areas under the jurisdiction of the Maricopa County Board of Supervisors, and

WHEREAS, the laws of the State of Arizona authorize the Board of Supervisors to regulate the extent and conditions of these improvements.

NOW THEREFORE BE IT RESOLVED that the "Maricopa County Special Provisions for Construction of Street Improvements", the "Maricopa County Special Provisions for Installation of Underground Utilities", and the "Maricopa County Special Provisions for Traffic Control Under Permit"; attached hereto and made part hereof as though recited in their entirety, are hereby declared adopted.

BE IT FURTHER RESOLVED that adoption of these aforementioned Special Provisions replaces the requirements of the Special Provisions originally adopted by the Board of Supervisors on February 7, 1972 and subsequently revised on July 17, 1972, October 20, 1975 August 2, 1982, and November 3, 1993.

BE IT FURTHER RESOLVED that these Special Provisions are intended to compliment the Subdivision Regulations for Maricopa County, the Maricopa County Department of Transportation (MCDOT) Roadway Design Manual the Maricopa Association of Governments (MAG) Uniform Standard Specifications for Public Works Construction and MCDOT Supplements as may be currently in effect.

BE IT FURTHER RESOLVED that these Special Provisions shall be effective immediately upon adoption.

ADOPTED by the Maricopa County Board of Supervisors in public session this ___ day of __, .

BY:

Chairman, Board of Supervisors

ATTEST:

Clerk, Board of Supervisors

MARICOPA COUNTY SPECIAL PROVISIONS

**FOR
CONSTRUCTION OF STREET IMPROVEMENTS**

I. STREET IMPROVEMENTS

A. Subdivisions

1. a. Streets in residential subdivisions with net lot areas of 18,000 square feet or less shall be improved consistent with their functional classification and to urban standards according to the cross sections shown in the Maricopa County Department of Transportation (MCDOT) Roadway Design Manual. Streets in residential subdivisions with net lot areas greater than 18,000 square feet shall be improved to either urban or rural standards according to the MCDOT Roadway Design Manual. Where grades exceed five percent (5%) or the roadway accommodates cross drainage, penetration chip seal surfaces shall not be used.
- b. Roadways for Industrial Parks and Commercial Lots shall be improved per the MCDOT Roadway Design Manual (Figure 5.5).
2. Access to subdivisions shall be provided as required by the Maricopa County Special Provisions for Perimeter Street Improvements. Sufficient lane capacity shall be provided to accommodate the subdivision. Chip seal pavement shall not be used for access roads where the built out development traffic volume, will exceed 300 vehicles per day.
3. All utility services in new subdivisions shall be installed, tested for operation and trench compaction test approved prior to placement of pavement.
4. Curb returns shall be vertical curb, (four or six inches high) consistent with adjacent curb. Transitioning between different height curbs may be done in curb transitions of lesser height curb.
5. Inverted crown designs are prohibited.
6. Perimeter streets shall be improved as required by an approved Traffic Study, consistent with the future functional roadway classification or as directed by the County Engineer. A half street shall be constructed on the subdivision side, but shall be no less than 24 feet in travel width.
7. Sidewalk ramps shall be included on all curb returns at intersections and at locations where pedestrian traffic is invited to cross-traveled ways. Ramps shall comply with MCDOT Standard Details.

8. Sidewalks shall be provided in all urban subdivisions and be of the width and location specified in the MCDOT Roadway Design Manual.
9. At intersections where drainage is transferred across the roadway at a cross slope of less than 0.3 percent, a valley gutter shall be installed a minimum four (4) foot wide and constructed of concrete.

B. General

1. Improvements within County right-of-way shall conform to applicable Standards and Specifications of MAG, the MCDOT Roadway Design Manual and these Special Provisions.
2. a. Typical roadway sections shall conform to the latest MCDOT Roadway Design Manual according to design roadway classification. The pavement section shall be a minimum of two and one half (2 1/2) inches compacted depth of asphalt concrete (AC) over six (6) inches aggregate base course (ABC). Normal crown pavement cross-slopes shall not exceed a minimum of 1.5% or a maximum of 2.5% unless approved by MCDOT.

Before placing ABC material, all vegetation shall be removed and the soil sterilized.
- b. Street pavement in Industrial Parks and Commercial Subdivisions shall consist of a minimum of four (4) inches of compacted depth of asphalt concrete over ABC as determined from laboratory soil test results, with ten (10) inches as a minimum compacted depth of ABC.
3. All asphalt concrete shall receive a preservative seal (SS-1H) in accordance with Sections 334 and 713 of the MAG Uniform Standard Specifications.
4. Channels and natural washes that flow across roadways as surface drainage onto a paved street shall be lined with a non-erosive material or improved as required by the County Engineer within the right-of-way.
5. Drainage must be provided as per the approved plans. Design frequencies and street flow requirements shall conform to the Drainage Regulations of Maricopa County Flood Control District. As a minimum, storm drain collection shall be designed for a 10 year storm and discharge a minimum of 100 feet from edge of roadway.
6. Irrigation and Utilities
 - a. All private irrigation facilities and other private utilities must be relocated onto private easements at no cost to the County. Unused or abandoned

facilities in the right-of-way must be removed to the satisfaction of the County Engineer.

- b. Public utility facilities existing at the time of the improvements shall be relocated to non-conflicting locations at no cost to the County, or as required by the County Engineer.
- c. Appropriate notification to utilities is required prior to the start of excavation operations (Blue Stake telephone no. 602-263-1100).

II. SPECIFICATIONS

All work and materials shall conform to the current Maricopa Association of Governments (MAG) Uniform Standard Specifications and Details for Public Works Construction, the MCDOT Supplement to MAG, and the MCDOT Roadway Design Manual; EXCEPT as noted in these Special Provisions. In case of conflict between the Uniform Standard Specifications and the Special Provisions, these Special Provisions shall govern.

It is not the intention of the Maricopa County Department of Transportation to prohibit use of other materials, methods or designs for street improvements. Other specifications will be considered as satisfactory alternates upon **written approval** of the County Engineer, based on prior submission and review of structural data, designs, tests and other supporting data.

III. CONSTRUCTION DEFICIENCIES

A. Asphalt Concrete

1. Penalties for deficiencies shall be per MAG Section 321.6
2. All pavement projects shall require core samples. Cost of taking core samples and related testing to determine compliance with this Specification shall be paid for by the General Contractor.
3. The wearing surface, when ready for acceptance, shall be thoroughly compacted, smooth and even, true to grade and cross-section, and free from ruts, humps, depressions, or irregularities. When a 10-foot straightedge is laid on the finished surface and parallel (longitudinal) or perpendicular (transverse) with the centerline of the road, the surface shall vary in no place more than 1/8 inch from the lower edge of the straightedge.

B. Concrete Work

Concrete curb, gutter, and sidewalk shall be constructed within 1/2 inch of the specific dimensions.

No utility valve caps, clean outs or valve boxes shall be located in the curb or gutter.

The curb and gutter shall be tested with a 10-foot straightedge, longitudinally along the surface. Any deviation in excess of 1/4 inch shall be corrected at no additional cost to Maricopa County.

No damaged (e.g. chipped, cracked, imprinted) items will be accepted. When curb, gutter, or sidewalk does not meet the above requirements, the work will be rejected and remedial action specified.

If roadway pavement is damaged during replacement of curb, gutter, or sidewalk the roadway shall be repaired to the satisfaction of the County Engineer.

IV. ENGINEERING

A. All preparation of plans, staking, construction, and inspection within County right-of-way shall be performed under the supervision of a civil engineer, registered in the State of Arizona. Staking may also be performed under the supervision of a Land Surveyor, registered in the State of Arizona.

B. Plans shall be submitted on a consistent sheet size not to exceed 24" x 36" and must be neat, clear, legible and complete in all respects.

Improvement plans shall be submitted on plan and profile sheets with a horizontal scale no smaller than 1" = 50' and a vertical scale no smaller than 1" = 5'. The scale must be adequate to clearly show all grade breaks and details.

A signage and striping plan shall be required for work on roadways classified as a collector road or greater.

Pre-development profile grade line shall be shown as broken lines..

Final profile grade line shall be shown as solid lines.

Plans should be submitted for approval at least fifteen (15) working days prior to any submission of an application for a construction permit.

C. Continuous field inspection shall be required during construction operations. The field inspections shall be provided by the permittee and shall be performed under the supervision of a civil engineer, registered in the State of Arizona.

D. Upon completion of the following phases of construction (mass grading, underground utilities, concrete structures, sidewalk, curb and gutter, and sidewalk ramps, drainage structures, sub-grade under pavement, base course, and asphalt concrete) the engineer shall certify in writing to the Maricopa County Department of Transportation that the work was accomplished in accordance with the approved plans and specifications.

V. PERMITS

All work performed within County right-of-way shall be under a permit from the Maricopa County Department of Transportation. A minimum of 3 sets of approved improvement plans must be submitted with the permit application at least three (3) working days before work is scheduled to begin. If plans not previously approved are submitted with the permit application, additional review time may be required (See Section IV). Work shall not begin until a permit is issued and the traffic control plan has been submitted and approved.

The Contractor is responsible for securing any and all necessary permits from other jurisdictions prior to commencing work. Conformance to other permit requirements and coordination of any conflicts between permits is the responsibility of the Contractor.

Prior to moving or destroying protected native plant species, the Contractor shall file a formal Notice of Intent with the Arizona Department of Agriculture and obtain all necessary permits.

Prior to conducting excavation operations, the Contractor shall obtain from the Arizona State Environmental Planning Group recommendations regarding the need for cultural resources (archaeological) clearance.

If the work is subject to the National Pollutant Discharge Elimination System (NPDES) storm water requirements for construction sites, a Storm Water Pollution Prevention Plan (SWPPP) must be filed and approved prior to issuance of a permit.

VI. PUBLIC UTILITIES

It shall be the permittee responsibility to arrange for all necessary installation, relocation or removal of conflicting public utilities. Abandoned utilities that are exposed shall be removed from the project site, both ends capped, location noted on as-built plans and the affected utility company shall maintain a permanent log of the abandoned facilities remaining in place. Satisfactory test reports, as required by the "Maricopa County Special Provisions for Installation of Underground Utilities", must be received by the Maricopa County Department of Transportation prior to approval for paving or concrete operations over any utility. The County Engineer or his

designee shall give approval for paving operations only after compliance with all requirements for utility installation, grading and subgrade compaction. The latest edition of "Maricopa County Special provisions for Installation of Underground Utilities" is incorporated herein and made a part hereof.

VII. DUST CONTROL

Existing regulations, (namely Regulation II, Rule 20-A-3 of the Maricopa County Environmental Services, Bureau of Air Pollution Control and the MAG 1991 Particulate Plan for PM-10 for the Maricopa County Area together with all current revisions), shall be rigidly observed and enforced. Water or other approved dust palliatives in sufficient quantities shall be applied during all phases of construction involving open earthwork to prevent the unnecessary discharge of dust and dirt into the air.

VIII. COMPACTION

A. Subgrade – The top six inches (6") of pavement subgrade shall be scarified and compacted per MAG Uniform Standard Specification Section 301 and the Maricopa County Department of Transportation Supplement to MAG. Rock six inches (6") or greater shall be removed from the scarified subgrade.

B. Base Material – The base course shall not be placed on subgrade until compaction tests of the subgrade have been completed and the subgrade has been found to meet the specifications in Section XII of this resolution and average grade and cross slope is per MAG Specification Section 301.4. Base material shall be compacted, full depth, to a minimum density of one hundred percent (100%) of the maximum density for the material being used.

C. Surface Course – The surface course shall not be placed on base material until compaction tests of the base material have been completed and the base material has been found to meet the specification in Section XII and Section XV of this resolution and required grade and cross section per MAG Specification Section 310.2. Asphalt concrete pavement shall be compacted per MAG Specification Section 321.5.4. The

Engineer of Record shall establish a rolling pattern for required density.

D. Requests for variances from the above will require certified material tests and designs to be reviewed and approved by the County Engineer in advance.

IX. CONTRACTION AND EXPANSION JOINTS FOR CURB, GUTTER AND SIDEWALK

Contraction and expansion joints shall conform to Sections 340 and 729 of the MAG Uniform Standard Specifications and be spaced no greater than five feet (5') apart.

X. TESTING

All testing herein required shall be performed under the supervision of a civil engineer registered in the State of Arizona. Laboratory tests shall be performed in an Arizona State certified laboratory. A laboratory technician certified for the tests being performed shall perform field tests. All test reports are to be submitted to the Maricopa County Department of Transportation. Each report shall indicate the location of the test, type and source of material tested, test designation being used and the name of the person performing the test.

XI. PAVEMENT DESIGN

- A. Improvements within County Right-Of-Way shall conform to the applicable standards in the Uniform Standards and Specifications for Public Works Construction sponsored and distributed by the Maricopa Association of Governments (MAG), the MCDOT Roadway Design Manual, and these special provisions. All roadway pavement improvements within the County Right-Of-Way shall have the pavement thickness designed by an Engineer registered in the State of Arizona who specializes in pavement design and geotechnical engineering. Neither this design nor the associated tests will be provided by Maricopa County.
- B. Pavements shall be designed in accordance with the methods established by the current version of the MCDOT Roadway Design Manual. The following additional requirements shall also be incorporated into the design and construction.
1. Test holes for soil investigation phase of the pavement design shall be spaced at one (1) per eight hundred (800) lineal feet with at least one per proposed street. Each test hole shall be advanced to the following minimum depths if there is no significant cut or fill required. These depths represent distance below the elevation of proposed subgrade.

Residential Streets 18 inches

Arterial or Collector Streets 36 inches

In areas of cut or fill, the Engineer shall use his professional judgment to determine the depth of each test hole. Additional test holes shall be taken at apparent changes in soil type.

2. As a minimum, at least one soil sample from each test hole shall be tested for sieve analysis (AASHTO T27) with results reported as percent passing each sieve, plus a plasticity index and liquid limit (AASHTO T89 and T90).
3. For all asphalt concrete pavements (AC), the minimum thickness of AC shall be two and one half (2 ½) inches.

4. Asphalt concrete pavements of streets in industrial parks and commercial subdivisions shall consist of a minimum thickness of four (4) inches AC over ABC. The ABC thickness shall be determined by the soils investigation, but it shall not be less than ten (10) inches.
 5. The Engineer shall prepare a pavement design report that includes results of all of the tests and pavement structure design calculations. This report shall be forwarded to the County together with the paving plans.
 6. Before placing aggregate base course (ABC) material, all vegetation shall be removed and the soil sterilized.
 7. Prior to moving or destroying protected native plant species, the Contractor shall file a formal Notice of Intent with the Arizona Department of Agriculture and obtain all necessary permits.
- C. Additional tests may be ordered by the County Engineer for purposes of assuring design information when the pavement design method is other than the standard.

XII.COMPACTION TESTS

- A. The following tests shall be performed:
1. Pavement Subgrade - 1 test per 800 lineal feet of roadway with at least 1 test per street.
 2. Curb Subgrade - 1 test per 500 lineal feet of curb with at least 1 test per street, per side.
 3. Base Material - 1 test per 800 lineal feet of roadway with at least 1 test per street.
 4. Sidewalk Subgrade - 1 test per 500 lineal feet of sidewalk with at least 1 test per street, per side.
- B. Maximum densities for the materials being compacted shall be determined in the laboratory on the same materials in accordance with AASHTO Designations T-99, Method A. Field density tests shall be performed in accordance with AASHTO Designation T-191, T-238 or T-239. At least one density test per subdivision/roadway shall be accomplished using ASTM 1556. One density test using ASTM 1556 shall be accomplished for every ten nuclear density test.

- C. Test locations shall be staggered within the limits of the improvements.

XIII. CONCRETE TESTS

See Section 725 of the MAG Uniform Standard Specifications for required concrete tests.

XIV. ASPHALT CONCRETE TESTS

- A. The contractor shall furnish the asphalt mix formula to Maricopa County Department of Transportation for approval 48 hours prior to placing any asphalt courses.

1. All asphalt mix design shall be superpave unless approved by MCDOT.
2. Gradation designation greater than 19.0 mm is not permitted for work in the County right-of-way. Gradation to thickness ratio shall not exceed 1:3.

- B. The following tests shall be taken:

1. Gradation – Express as % size passing sieve control points.
2. Asphalt content – Expressed as % by weight of total mixed material, sample and tested per AASHTO T-164 and T-168.
3. Compaction – As previously specified above in Section VIII.C.
4. Asphalt Core – One per 800 lineal feet of roadway with at least 1 test per street. Additional testing and correction required per Section IIIA herein due to thickness deficiencies shall be per MAG Specification Section 321.6.

XV. MATERIALS

- A. Base Material - Material shall meet Section 702.2 of the MAG Uniform Standard Specifications. If "Select" material is used, the upper four inches (4") of base shall be Aggregate Base. The balance of the required thickness may be select material, Type B. The total thickness shall be determined by laboratory tests of the subgrade materials, with the minimum as specified in the Maricopa County Department of Transportation Roadway Design Manual.
- B. Asphalt Concrete - Material shall meet Section 710 of the MAG Uniform Standard Specifications. Use Superpave -19mm or

12.5mm. Minimum lift thickness shall be per Table 710-1 of the MAG Uniform Standard Specifications.

- C. Preservative Seal Coat – Seal Coat shall meet Section 718 of MAG Uniform Standard Specifications (SS-1H).
- D. Concrete - Concrete construction within the right-of-way shall be of the class specified in the MAG Uniform Standard Details and conform to the applicable requirements of Section 725 of the MAG Uniform Standard Specifications, unless otherwise required by MCDOT.
- E. Reinforced Concrete Pipe - Shall meet Section 735 of the MAG Uniform Standard Specifications. Rubber gaskets are required whenever pipe is under existing or proposed roadway.
- F. Corrugated Metal Pipe - Shall meet Section 621 of the MAG Uniform Standard Specifications. Pipes under existing or proposed roadways shall be bituminous coated or aluminized.
- G. Miscellaneous - Any other items shall conform to the applicable sections of the MAG Uniform Standard Specifications, unless approved otherwise.

XVI. CONSTRUCTION

All construction shall conform to the applicable sections of the MAG Uniform Standard Specifications, Manual of Uniform Traffic Control Devices, MUTCD, MCDOT Resolutions, and MCDOT Supplements to MAG unless modified in writing by the County Engineer.

XVII. STREET SIGNS AND SURVEY MONUMENTS

- A. The developer of a subdivision shall be responsible for purchase and erection of street name signs at all intersections within the subdivision, including intersections with perimeter streets. All street name signs shall conform to MCDOT Standard Detail 2054-1 and 2054-2 of the MCDOT Supplement to MAG Uniform Standard Specifications and Details for Public Works Construction. Signs shall be furnished and installed, at no cost to the County, at locations shown on the approved plans.
- B. Survey monuments shall conform to the applicable MAG Standard Detail 120-1 or 120-2 and shall be furnished and set by the owner at no cost to the County. Monuments shall be located as shown on the approved plans or as required by

the Maricopa County Department of Transportation and shall be properly punched by a registered land surveyor.

- C. No approval or acceptance of a project will be given until these items are complete in place.**

XVIII. TRAFFIC CONTROL REQUIREMENTS

Traffic control shall conform to the MUTCD and the "Maricopa County Special Provisions for Traffic Control Under Permit," incorporated herein and made a part hereof. Any signs removed by a contractor shall be maintained on a portable stand during construction. All signs shall be reinstalled by the contractor to MCDOT standards at the end of the project.

XIX. SIDEWALKS, BICYCLE PATHS AND SPECIAL USES

- A. When sidewalks are required, they shall be installed to the widths and at the locations indicated in the Maricopa County Department of Transportation Roadway Design Manual, unless otherwise approved.
- B. Bicycle paths, equestrian and hiking trails are not required by Maricopa County. If constructed in County rights-of-way, such construction must be approved by the County Engineer and under permit from the Maricopa County Department of Transportation. Bicycle lanes as an integral part of the roadway, required for arterial roads shall comply with the latest edition of the Maricopa County Department of Transportation Roadway Design Manual

XX. MAIL BOXES

Individual mailboxes are permitted to be placed only in such locations that will not interfere with traffic, either vehicular, bicycle or pedestrian, or create a hazard of any nature.

If a sidewalk is constructed adjacent to the curb, the mailbox shall be located behind the sidewalk and clear of the vertical projection of the back edge of the sidewalk by a minimum of one (1) foot. If no sidewalk is constructed, the box must clear the vertical projection of the back edge of the curb by a minimum of one (1) foot. If no curb is constructed, the box must clear the vertical projection of the edge of the pavement by a minimum of three (3) feet. Installation of individual mailboxes in the County right-of-way shall be done under permit from the Maricopa County Department of Transportation. It is the permittee's responsibility to satisfy any requirements of the local postmaster and provide uninterrupted mail service during construction.

XXI. STREET LIGHTS AND POWER POLES

Street lights and power poles are permitted to be placed only in such locations that will not interfere with traffic, either vehicular or pedestrian, or create a hazard of any nature.

If a sidewalk is constructed adjacent to the curb, the above mentioned objects shall be located behind the sidewalk by a minimum of one (1) foot. If no sidewalk is constructed, the objects must clear the back edge of the curb by a minimum of six (6) foot on section line and major streets or five (5) foot on mid-section and residential street alignments. If no curb is constructed, the objects must clear the vertical projection of the edge of the pavement as outlined in the Maricopa County Department of Transportation Roadway Design Manual Figure 5.30 Clear Zone Width Criteria. Installation of street lights and power poles in the County Right-Of-Way shall be done under permit from the Maricopa County Department of Transportation.

XXII. PROJECT APPROVAL

The project will not be considered ready for final inspection until all drainage items, grading, and backfill are complete and pavement, curbs and sidewalks are swept clean of all dirt and debris. The area behind curbs shall be totally backfilled to top of curb, compacted and neatly dressed to a maximum 4:1 slope within the Right-Of-Way. The contractor shall furnish a water truck at the time of final inspection for the purpose of testing street drainage. Any ponding in excess of ten square feet in surface area or 1/2 inch in depth shall require corrective action by the contractor. The "as-built" plans and all test reports must be submitted before final project approval.

XXIII. DECLARATION

Prior to one year after approval of the improvements in a subdivision, an inspection will be made by the Maricopa County Department of Transportation to determine to what extent, if any, damage may have been caused by construction operations. Any such damaged sections must be repaired or replaced at no cost to the County prior to being eligible for declaration into the County System for permanent maintenance.

XXIV. CHANGES

No variation from these Special Provisions or approved plans and specifications will be permitted unless submitted to and approved in advance by the County Engineer.

XXV. GUARANTEES

The contractor shall guarantee all work against defective workmanship or materials for a period of one (1) year from the date of acceptance, as evidenced by release of the permit, except for ordinary wear and tear or unusual abuse or neglect by parties other than the Contractor.

**MARICOPA COUNTY SPECIAL PROVISIONS
FOR
PERIMETER STREET IMPROVEMENTS**

The improvement of perimeter streets for new developments shall follow the guidelines shown below. The criteria for the level of improvements required is a function of the existing roadway condition prior to the improvement, whether or not Maricopa County Department of Transportation (MCDOT) has a project for improvement of the roads in the vicinity in its Traffic Improvement Program (TIP) and the intensity of the proposed development. Terms used are defined as follows:

(1) Present Improvements:

- None: Unopened; graded and drained; no stabilized wearing course.
- BST: Bituminous Surface Treatment, usually penetration and chip seal pavement or equivalent.
- Strip: Strip pavement, usually asphalt concrete, generally 28' wide over full aggregate base.
- Full: Asphalt concrete pavement with curbs, to full ultimate width.

(2) Proposed Improvements:

- Ultimate Section: As per MCDOT Roadway Design Manual for specified roadway classification.
- Strip: Strip pavement, asphalt concrete over full aggregate base, Width based on roadway classification, but no less than 5' paved shoulders
- TIP: The approved five-year transportation improvement program of MCDOT.

(3) General Guidelines

- A. Minimum asphalt thickness is 2 ½ inches.
- B. Corrective requirements for asphalt deficiencies shall be per MAG Specification Section 321.6.

ARTERIAL TYPE ROADS (SECTION LINES)

General right-of-way width is 55' to 70' half-width or 75' to 90' half-width with a frontage road (required if lots face arterial road). The frontage road, if required, shall be improved to the same specifications as the interior streets of the subdivision. The arterial roadway shall be improved as follows:

Present Improvements				TIP		
None	BST	Strip	Full	Yes	No	
x					x	34 feet Strip Paving (Shall be centered on Section Line if possible).
x				X		Bond for 1/2 width improvement (not to exceed cost of 34 feet of strip paving).
	x				x	Remove existing BST for one-half width and improve as specified above.
	x			X		Bond for 1/2 width improvement (not to exceed cost of 34 feet of strip paving).
		x			x	Widen to ultimate section on side of subdivision in accordance with specification of MCDOT, complete with concrete curb, gutter and sidewalk.
		x		X		Same as above, except the developer may be required to post bond for the improvement until such time as the plans for the improvement are fully approved.
			x	N/A	N/A	No further improvements to arterial road required.

MAJOR COLLECTOR TYPE ROADS (MIDSECTION LINE)

General right-of-way width is a 40-foot half width. The ultimate, fully improved section consists of 48-62 feet of pavement, plus two feet (2') wide vertical concrete curb and gutter and sidewalk on both sides. If the subdivision borders on a midsection line or major collector type road, the improvements required are as follows:

Present Improvements

None	BST	Strip	Full	Improvement to Perimeter Road Required
x				For subdivisions with lot sizes of 18,000 square feet or less, 24-31 foot half-width pavement to full specification, plus vertical concrete curb and gutter (and sidewalks where applicable). For subdivisions with lot sizes greater than 18,000 square feet; 24 foot half-width strip pavement. Structures per roadway classification.
	x			Remove existing BST for half-width and improve as specified above.
		X		Regardless of lot size in the subdivision, the road is to be improved to the ultimate section of half-width pavement, plus vertical concrete curb and gutter (and sidewalk where applicable).
			x	No further improvements required.

RESIDENTIAL COLLECTOR TYPE STREETS (QUARTER MILE)

General right-of-way width is a 30-foot half-width. The ultimate fully improved section consists of 36 feet of pavement, plus two feet (2') wide curbs and sidewalk on both sides.

If the subdivision borders on a quarter mile or residential collector type road, the improvements required are as follows:

Present Improvements

None	BST	Strip	Full	Improvement to Perimeter Road Required
x				If lot size is 18,000 sf or less, improve with 24 feet of pavement (22' on curb side of monument line), plus two feet (2') wide concrete curb. If lot size is greater than 18,000 sf, improve with 24 feet of strip pavement.
	x			Remove existing BST for half-width and improve as specified above for all subdivisions.
		x		If subdivision lot size is 18,000 sf or smaller, the road shall be widened to a 22-foot half-width pavement, if applicable, plus two-foot (2') wide concrete curb (and sidewalk where applicable) on subdivision side. For lot sizes greater than 18,000 sf, no further improvements are required.
			x	No further improvements required.

RESIDENTIAL STREETS

General right-of-way width is a 25-foot half-width. The ultimate, fully improved section consists of 28-feet of pavement, plus two feet (2') wide curbs and sidewalks on both sides. If the subdivision borders on a residential street, the improvements required are as follows:

Present Improvements

None	BST	Strp	Full	Improvement to Perimeter Road Required
x				If lot size is 18,000 sf or less, improve with a 22-foot width of full pavement, plus two feet (2') wide concrete curb (and sidewalk as applicable). If lot size is greater than 18,000 sf, improve with a 20-foot half-width of strip pavement. 2 ½" AC on 6" ABC pavement.
	x			Remove existing BST for half-width and improve as specified above for all subdivisions. Widen on the subdivision side to a minimum half-width of 14 feet with a minimum total width of 20 feet.
		x		If lot size 18,000 sf or less, the road shall be widened to a 14-foot half-width, if applicable, plus two feet (2') wide concrete curb (and sidewalk as applicable) on the subdivision side. For lot sizes of greater than 18,000 sf, no further improvements are required, provided existing pavement is a 28-foot minimum width.
			x	No further improvements required.

**MARICOPA COUNTY SPECIAL PROVISIONS
FOR
INSTALLATION OF UNDERGROUND UTILITIES**

I. SPECIFICATIONS AND DETAILS

All work and materials shall conform to the "Maricopa Association of Governments (MAG) Uniform Standard Specifications for Public Works Construction", with adopted Maricopa County Department of Transportation (MCDOT) supplements thereto, except as modified by these Special Provisions. In case of conflict between the Uniform Standard Specifications, MCDOT Supplements and the Special Provisions, these Special Provisions shall govern.

The construction site shall be in accordance with all applicable OSHA regulations.

Other agency specifications for construction material or methods which are equal to or better than the MAG Uniform Standard Specifications, may be substituted as satisfactory alternates only with prior written approval of the County Engineer.

Engineering reports and laboratory tests may be required by the County Engineer to substantiate alternate materials or specifications at no cost to Maricopa County.

II. PLANS, SPECIFICATIONS, ENGINEERING

A. Preparation of plans, specifications, construction and inspection shall be performed under the supervision of a civil engineer, registered in the State of Arizona and employed by the owner. Plans prepared by utility companies for distribution of gas, electric power or for communication service need not be prepared by a registered Civil Engineer, but, shall be inspected by the utility company for compliance with MAG and MCDOT requirements.

B. Plans shall be submitted on a maximum size sheet of 24" x 36" and must be neat, clear, legible and complete in all respects. The scale shall be commensurate with the detail and in no case smaller than 1" = 200' plan, and 1" = 5' profile. Profiles will be required on projects involving installation of sewer, effluent, water, and underground irrigation lines in dedicated right-of-way. Power facilities must also be submitted in profile where the trade size of a single conduit exceeds six inches (6") in diameter or where multiple conduits including the concrete encasements are sixty (60) square inches or greater in cross-sectional area. In addition, profiles may be required by the County Engineer in cases of possible alignment or grade conflicts, cover problems or crossing conflicts. Plans may be submitted concurrently with the application for a construction permit but at least ten (10) working days will be required for review.

The County may require submission of a set of "as-built" plans, if any field changes were affected.

III. EXCAVATION, BACKFILL, COMPACTION, LINE DEPTH AND TESTING

A. Excavation - All excavation shall conform to the requirements of Section 601 of the MAG Uniform Standard Specifications, except as modified in these Special

Provisions. Attention is called to the necessary notification of all utilities (Blue Stake, telephone number 602-263-1100).

The maximum length of open trench shall not exceed 1,320 feet and shall not remain open for longer than 10 working days. Trenches across streets shall be completely backfilled within 3 working days after pipe laying. When steel plates are used to bridge across a trench on streets with a posted speed of 35 MPH or greater, the steel plates shall be recessed into the asphalt to provide a smooth travel path.

- B. Backfill Materials - Backfill shall be per MAG Section 601.4.3. When "select" material or "aggregate base course (ABC)" is substituted or specified, it shall conform to the applicable sections of the MAG Uniform Standard Specification.

Cement slurry backfill, in accordance with Section 728 of the MAG Uniform Standard Specifications, may be substituted for trenches within paved areas. It shall be placed to the bottom of the existing pavement layer, or two and one-half (2½) inches minimum from the surface, whichever is greater, and shall be properly plated until sufficiently set to accommodate traffic loads and allow for placement of the asphalt concrete surface. Cement slurry backfill may be used at other locations with prior approval from the County Engineer.

Backfill material for utility trenches in subdivisions shall be "aggregate base course (ABC)."

C. Compaction

1. MINIMUM DENSITY REQUIRED

Compaction Type	Location	From Surface to 2' Below Surface	From 2' Below Surface to 1' Above Top of Pipe	From 1' Above Top of Pipe to Bottom of Trench
I	Under any existing or proposed pavement, curb, gutter, sidewalk, or such construction included in the contract, or when any part of the trench excavation is within 2' of the above.	100% granular 95% for non-granular	95%	95%
II	On any utility easement, street, road or alley right-of-way when any part of the trench excavation is more than 2' from the above.	95%	95%	95%
III	Around any structure or exposed utilities.	95%	In all cases	In all cases

(1) Note: Where full-depth asphalt is placed on native material, the pavement subgrade shall be compacted to 100%.

2. For trenches in unpaved alleys, utility easements or other unimproved traveled way; water jetting (as defined in MAG Specifications and herein) is permissible.
3. Water consolidation by jetting shall be accomplished with a 1-1/2" pipe of sufficient length to reach the bottom of the lift being settled with adequate hose attached and a water pressure of not less than 30 psi. Lifts shall not exceed six feet (6') loose. The backfill shall be leveled, the trench saturated and the material jetted to:
 - a. Within one foot (1') of the pipe if the lift is six feet (6') or less from the top of the pipe, or
 - b. At least one foot (1') into the previous lift if multiple lifts are necessary.

All jetting shall be accomplished transversely across the trench at intervals of not more

Than five (5) feet with the jetting locations on one side of the trench, offset to the jetting locations on the other side of the trench. The entire lift shall be leveled and completely saturated working from top to bottom. Each lift shall be tested and pass required compaction test(s) prior to any more fill or lifts being added to the trench.

4. Water jetting is permitted in new subdivision, but no paving will be permitted over water settled trenches until compaction test results have been approved by the County Engineer.

D. Minimum Depth of Lines

<u>Type</u>	<u>Minimum Depth **</u>
1. Direct Bury Cable	36" *
2. Water Line in Major Street or > 12" Diameter	48"
3. Other Water Lines or Irrigation Lines	36"
4. Storm Drain Lines	18"
5. Fiber Optic Cable	36" #
6. Other, television, telephone, cable	36"
7. Gas	36"

* When installed a minimum of fifteen feet (15') beyond the edge of roadway.

** Without protective cap.

With warning tape, 60" depth when crossing or within fifteen feet (15') of roadway.

Cover is defined as the difference in elevation between the top of the line or pipe and the ultimate gutter grade of the roadway if paving will follow or to top of existing pavement.

For facilities outside the limits as defined in paragraph III.C.1, cover is defined as the difference in elevation between the top of the line or pipe and the natural or regraded ground surface, whichever is less.

E. Testing

1. Procedures
 - a. AASHTO T99, Method A – Maximum Density
 - b. AASHTO T191, T238 – Field Density
 - c. AASHTO T27 – Sieve analysis

2. Frequency

The tests shall be made at the locations and depths specified by the County Engineer or his representative. A minimum of one set of tests will be required for each four feet (4') of trench depth for trenches within two feet (2') of a paved road or back of curb. Otherwise, one set of tests will be required for each six feet (6') of trench depth.

The minimum number of passing tests per set anticipated for specification compliance may be estimated as follows:

- a. Pavement cut crossing – one (1) set of tests per crossing (one test each direction).
 - b. Longitudinal pavement cuts or the edge of the trench within two feet (2') as previously explained – one set of tests per five hundred feet (500'), with one set of tests minimum per block.
 - c. All other locations – one set of tests per eight hundred feet (800'), with one set of tests minimum per block.
3. Tests shall be taken at four-foot (4') or six-foot (6') vertical increments in the same vertical plane. Copies of all test reports shall be identified as to project and location by the testing laboratory and forwarded to the MCDOT inspector, who shall forward one set of all test results to the Maricopa County Department of Transportation.

The compaction test(s) shall meet required compaction prior to the installation of additional lifts of fill material and all lifts shall meet compaction prior to paving.

4. At his/her discretion, the County Engineer may order load tests performed to determine the suitability and adequacy of backfill, before placement of pavement. Such tests shall be performed with a vehicle, loaded to approximately an eighteen thousand (18,000) pound axle load. Movement or settlement of backfill shall be cause for rejection of the work by the County. Load retest and corrective measures as necessary shall be at the expense of the owner or contractor.

IV. PAVEMENT CUTTING, PAVEMENT RESTORATION & BORING

- A. All cuts in asphalt or concrete pavement shall have saw cut or neat and straight edges. All transverse or diagonal pavement cuts shall extend at least one foot (1') beyond each side of the trench ("T" – Top). Excavated pavement material shall be removed from the site and properly disposed of.

- B. Pavement cut replacement: The asphalt material used for replacement of pavement cuts shall conform to Section 710 of the MAG Uniform Standard Specification or as directed by MCDOT. The thickness of the pavement and aggregate base replaced shall be consistent with the thickness of the existing asphalt pavement and base but shall not be less than 2 1/2" AC or 6" ABC. Minimum thickness requirements for asphalt pavement and aggregate base shall be measured compacted to 100% maximum density for the material.
- C. Pavement cuts shall conform to MAG Section 336. A polymer modified Slurry Seal shall be applied in accordance with Section 332 on all cuts when the total pavement cut length is greater than 600 feet.
- D. All concrete replacement shall be Class A (3000 psi). No site batch concrete is allowed.

The thickness of Portland Cement concrete pavement replacement shall be consistent with the thickness of the existing section, but in no case less than six inches (6"). The concrete shall be Class A, in accordance with MAG specifications. The existing pavement shall be trimmed to a neat edge and the joint shall be sealed in accordance with Section 729 of the MAG Uniform Standard Specifications to insure a proper bond between the existing and new pavements.

It is required that all roadway crossing of lines four inches (4') in diameter or less be bored or pushed under pavement which is less than two years old (including surface treatment). If a pavement less than two years old is required to be cut to install an underground utility, approval of the Transportation Engineer shall be required and an "early cut fee" assessed. **Water boring is not permitted under a paved roadway.**

E. Surface Tolerance

The completed surface, when ready for acceptance, shall be thoroughly compacted, smooth and even, true to grade and cross-section, and free from ruts, humps, depressions, or irregularities. When a 10-foot straightedge is laid on the finished surface and parallel or perpendicular with the centerline of the road, the surface shall vary in no place more than 1/8 inch from the lower edge of the straightedge.

No "burning or infrared heating" is allowed to lower pavement high points.

V. SURFACE RESTORATION OF GRAVELED OR EARTH SURFACE ROADS

The surface replacement for gravel surfaced roads shall be consistent with the existing surface material in place, and may consist of Select Material or ABC as directed by the County Engineer.

Fill placed on existing gravel surfaced roads or earth surfaced roads to obtain minimum allowable cover over the pipe or utility lines shall be placed to proper grade for the full widths of the existing roadway and shall be compacted and graded to the satisfaction of the County Engineer. Care shall be taken to avoid altering or impeding natural drainage and creating dust or maintenance problems that did not exist prior to work.

VI. MISCELLANEOUS

The contractor shall secure a permit from the Maricopa County Department of Transportation prior to start of any construction operations within County right-of-way. Three (3) sets of approved plans must be submitted with the application at least three (3) working days before work is scheduled to begin.

The permittee shall notify the property owner or resident of adjoining occupied property at least twenty-four (24) hours prior to disruption of access to the property, and at no time deny access to the property longer than eight (8) consecutive hours, and shall provide adequate means for crossings, if necessary.

The permittee shall notify the inspector twenty-four (24) hours prior to beginning any work or testing. The inspector will inform the permittee which stages of construction will require inspection.

The permittee is responsible for insuring the natural drainage is not impeded during and after construction. Stormwater management within the construction site is the responsibility of the permittee. Where required, the permittee shall obtain a National Pollution Discharge Elimination System (NPDES) General Permit and conform to all applicable requirements therein.

Traffic control shall conform to the "Maricopa County, Special Provisions for Traffic Control Under Permit," incorporated herein and made a part thereof. The permittee shall submit a traffic control plan for approval prior to start of work and is responsible for maintaining the site in a safe condition for workers and the public. Should it become necessary for Maricopa County to barricade or otherwise protect the site due to a hazardous condition, the permittee shall be responsible for all incurred costs.

Only rubber-tired equipment shall be used on pavement, except that crawler equipment using street pads may be used.

Existing regulations, (namely Regulation II, Rule 20-A-3, of the Maricopa County Environmental Service, Bureau of Air Pollution Control), as applicable, shall be rigidly observed and enforced. Water or approved dust palliative, in sufficient quantities, shall be applied during all phases of construction involving open earthwork to prevent

the unnecessary discharge of dust and dirt into the air.

Oversize and overweight loads, as defined under Arizona Revised Statute, on county streets require a separate permit from MCDOT.

Compliance with the MAG 1991 Particulate Plan for PM-10, and all current revisions thereto, shall be the permittee's responsibility for any construction within the designated "Non-Attainment" area. A copy of this plan is available through the Maricopa County Department of Environmental Service.

During the course of work, the permittee shall maintain the work area in a clean and orderly condition. Excess excavation, debris, etc., will not be permitted to accumulate on the road surface or shoulders. Work shall progress in such a manner that no condition, such as soft trenches, drop-offs from the edge of pavement, unnecessary lane restrictions, etc., will exist. Upon completion of installation, the permittee shall clean the pavement surface, pull and dress shoulders, replace traffic signs and otherwise put in order the entire work area to the satisfaction of the Transportation Director.

**MARICOPA COUNTY SPECIAL PROVISIONS
FOR
TRAFFIC CONTROL UNDER PERMIT**

I. RESTRICTING COUNTY ROADS

Traffic control shall comply with these special provisions and follow the guidelines contained in the latest editions of the Manual on Uniform Traffic Control Devices (Federal Highway Administration) and the City of Phoenix Traffic Barricade Manual. Deviations from these specifications, except during emergency conditions, must have the prior approval of the County Engineer or his representative.

It shall be the permittee's responsibility to provide, erect, maintain and remove all necessary signs, barricades, barriers, sand berms, high level warning devices, off duty law enforcement personnel, lights, delineator, traffic plates, flagmen and other devices necessary to properly mark and control the construction areas for the safe and efficient movement of vehicular and pedestrian traffic. The permittee shall provide a 24-hour emergency telephone number for traffic control. The telephone number shall be on each traffic control device. The permittee shall provide other traffic control devices or measures as deemed necessary by the County Engineer or his representative.

All persons, contractors, utilities and other agencies must notify the Development Service, Inspection Section at phone (602) 506-4625 of all traffic restrictions of County roads and streets. The notification may be by FAX submittal, phone number (602) 506-4009, of the traffic control plans for review at least two workdays (48 hours) prior to start of construction. Construction is not authorized to proceed without MCDOT approval of the Traffic Control Plan (TCP) and concurrence that construction can proceed with minimum public and traffic impact.

II. GENERAL TRAFFIC REGULATIONS

The following are the minimum requirements for all traffic control, unless otherwise provided for in the permit or as directed by the County Engineer or his representative.

A. Traffic Control Plans

A Traffic Control Plan shall be required for all projects that;

- (a) Divert, detour, or interrupt normal flow of traffic;
- (b) work zone within 20 feet of the edge of pavement.

Traffic Control Plans may also be required for other projects. The purpose of a traffic control plan is to encourage forethought as to the time of day, sequence of construction, degree of restriction and traffic control needed. An approved Traffic Control Plan may be modified by MCDOT based on field conditions at the time of work.

Traffic Control Plans may range in complexity from use of typical illustrations in approved traffic control manual to a detailed site plan showing signing, type of intersection,

barricading, diversions, detours, and project phasing. In all cases, the required Traffic Control Plan shall satisfactorily address all construction restrictions, the requirements of the permit and these regulations.

B. Restriction Times

Traffic restrictions are not permitted on arterial or major collector streets during peak traffic hours of 6 a.m. to 8:30 a.m. and 4 p.m. to 7 p.m. weekdays. During off peak traffic hours, the minimum number of lanes shall be two lanes (one in each direction, plus left turn lanes at intersections) on streets with four lanes or less, and four lanes on streets with five or more lanes, unless otherwise approved.

In order to keep nighttime noise to acceptable levels, permittee's shall not conduct any work during the hours of 7:00 p.m. to 6:00 a.m. without the written approval of the County Engineer or his representative. Special noise abatement conditions and procedures will be required if nighttime work is approved.

C. Use of Off-Duty Officers

When the work zone is within 300 feet of an signalized or major intersection, the permittee shall provide uniformed off-duty law enforcement personnel to assist with traffic control. A deputy may be required at other times if construction conditions dictate or as directed by the County Engineer or his representative.

D. Lane Requirements

Traffic lanes shall normally be 12 feet in width and have a minimum safe operating speed of 25 miles per hour. When the traffic control plan calls for an asphalt or oil paved detour, the contractor shall provide and maintain it in a safe driveable condition. Where traffic is diverted from the pavement, the contractor shall provide a suitable graded traveling surface with proper dust control. If a diversion will exceed 5 working days, the diversion may require paving or other acceptable dust palliatives as determined by the County Engineer or his representative. When steel plates are used to cover open trenches, bump sign shall be installed to notify motorist. If posted speed is 35 MPH or greater, pinned recessed steel plates shall be required on AC pavement. The contractor shall maintain all traffic control devices 24 hours a day for the entire construction period.

E. Sheriff Department notification

On all major streets, the Maricopa County Department of Transportation and Maricopa County Sheriff's Office local substation shall be provided with the name and phone number of the person responsible for 24-hour maintenance of traffic control devices.

F. Closing Roads

Except under emergency conditions, roads shall not be closed for construction activity unless prior approval is obtained from the County Engineer or his representative. Request for

closure shall include an analysis of the impact of diverting traffic to alternate routes versus constructing a paved detour.

G. Access to Property

Access to all properties for normal services shall be maintained at all times where possible. When local access cannot be maintained, the contractor shall notify the affected property owner/resident at least 48 hours in advance of the access closure. In no case shall the access be restricted for more than eight hours. Access shall not be closed for fire stations, hospitals, sheriff stations and schools. The contractor shall give 48 hours notification to the responsible person for all affected parties, concerning all access restrictions.

H. Over Night Traffic Diversions

For trenching diversions that move traffic from normal lanes, temporary bypasses shall be utilized during daylight hours only and traffic shall be restored to their normal lanes over night if possible. The use of traffic plates and temporary pavement shall be used. If conditions warrant, exceptions may be granted by the County Engineer or his representative. In addition to barricading and signing, portable barriers and/or sand berms shall be utilized for overnight diversions.

I. Slurry Backfill

The use of one sack cement slurry backfill under pavement areas shall be required by MCDOT to expedite construction on high volume roads.

J. Sidewalk Closure

Pedestrian traffic shall be notified of sidewalk closure by signage at nearest intersections to the affected sidewalk.

K. Public Safety

If for public safety, MCDOT needs to install traffic barriers due to non-response by contractor, the contractor shall be charged for all time, material and equipment used.

L. Portable Barriers and sand berms

Portable Jersey Barriers shall be required when construction hazards warrant or when directed by the County Engineer or his representative. The traffic approach ends of all portable barriers shall be protected from vehicle impact by flaring the ends away from the traveled way at a rate consistent with the following table or by the use of approved attenuation devices

Taper	Posted Speed
8:1	35 MPH
9:1	40 MPH
11:1	50 MPH

When a construction hazard warrants and or when required by the County Engineer or his representative, the contractor shall install an approved impact attenuation device or a deceleration sand berm (washed sand approximately five feet high) in the blocked traffic path to prevent errant vehicles from entering the active work site.

M. Trench Plating

To cover hazards and restore normal traffic flow during non-work times, the use of traffic plates may be required. Use of plates shall be for short time periods, not to exceed three workdays. Extended use may be granted with the approval of the County Engineer or his representative.

III. EXISTING TRAFFIC SIGNAL AND SIGNING DEVICES

The permittee shall maintain and/or relocate all existing signal indications, warning signs, stop, yield and street name signs; erect, clean and in full view of the intended traffic at all times. Portable signs should be used to supplement blocked or removed signs. Signs in conflict with traffic control signs shall be covered.

The permittee is responsible for the cost of replacing lost signs and for the permanent repair or replacement of damaged signal equipment and loop detectors.

Should damage occur to existing signal equipment, contractor shall notify the MCDOT Inspector (602) 506-8609, immediately to make the necessary temporary repairs to restore traffic signal operations.

The contractor will reset all disturbed signs to permanent locations when construction is completed. The contractor shall notify the MCDOT Inspector when the work is complete. All necessary temporary signs shall remain in place until permanent signs are reset.

IV. TEMPORARY TRAFFIC CONTROL

A. A Traffic Control Plan shall be submitted and approved prior to start of work.

B. Signs, barricades and channeling devices.

- (a) installed prior to the start of any work;
- (b) properly maintained and operated when restrictions exist;
- (c) kept clean and fresh appearing at all times;
- (d) kept in place only as long as needed;
- (e) removed from traveled way during non-working hours when restriction no longer exists;
- (f) removed from the right-of-way within 48 hours of completing work;
- (g) in accordance with MUTCD standards.

The "SPEED LIMIT 25" sign is used where the existing pavement has been removed, traffic is being maintained on temporary detour or diversion roads, unpaved shoulders, or on traffic lanes that are severely restricted.

Channeling, including "KEEP RIGHT" signs, shall be provided whenever traffic is moved across the street center line, the existing center line is obliterated, or opposing traffic is maintained in other than the normal traffic lanes.

All temporary traffic control devices shall be ballasted with sandbags or other approved ballast when necessary. The use of rocks, concrete or asphalt chunks, concrete blocks, etc., as ballast is prohibited. Ballast shall not be placed on top of any traffic control device.

Flagging, orange fencing, and/or woven plastic tape may be required at open trenches/excavations and/or used between lighted barricades and channeling devices in construction areas to provide additional guidance and security. Open trench signs shall be installed on all open trenches.

Channeling devices are not intended to be physical barriers.

It shall be the permittee responsibility to inspect all traffic control devices at least once during each work day and immediately after a wind or rain storm. Any traffic control device not properly located shall be reinstalled immediately.

B. Temporary Pavement Markings

Temporary pavement markings may be used to guide traffic on pavement in construction and maintenance areas. Where temporary markings are required at other than final locations, removable temporary markings or traffic control devices shall be used on pavement that shall remain. Temporary markings shall be removed and permanent markings placed upon project completion.

Centerline markings shall be two, 4-inch wide yellow lines with a 4-inch space between them. Lane line markings shall be 4 inches wide, placed with 10 lineal feet of line and 30 lineal feet of space to form the lane line pattern. Other markings for barrier lines, edge lines, crosswalks and school zones, may be necessary to complete temporary marking installations. Edge lines shall be 4-inch wide continuous white lines. Barrier lines for mandatory turn lanes, pavement edge tapers and lane transitions, shall be 10-inch wide continuous white lines.

V. SHORT TERM RESTRICTION AND SERVICE VEHICLES

When service or maintenance vehicles must proceed at a slow pace or stop in the road lane or engage in slow moving work on the road shoulders for brief period, they will not have to set up advance warning but they shall display an operating high level warning light system in conjunction with hazard warning flashers.

Striping or sweeping vehicles shall set up warning signs at the beginning and end of their work zone and be equipped with a spray bar. Striping and sweeping operations shall be accomplished in such a manner as to not obscure traffic.

Vehicles equipped with one (1) high level rotating flashing light (8 feet above ground level) are permitted to stop in a travel lane a maximum of 15 minutes without setup of temporary traffic

control devices. Vehicles equipped with the above lights and a standard arrow panel are permitted to stop in a travel lane for a maximum of 30 minutes.

The above service vehicles working at signalized intersections, shall also utilize a short taper of cones (minimum 50 feet and 6 cones) in approaching lanes.

Flashing lights and arrow panels shall be located on service vehicles so that they are visible from all directions and are not obscured by truck beds, mounted equipment or work activities.

VI. Personnel / Detour Time

All traffic control flaggers shall be properly trained and certified by a recognized source, such as the International Municipal Signal Association (IMSA) and shall carry proof of training with them at all times. Flaggers shall use stop and slow paddles to control traffic.

Any detour intended to be in place 5 days or longer shall be accomplished by means of temporary pavement with a design life to complete the work.

Various Testing Requirements

Pavement Design

Asphalt mix design shall be forwarded to MCDOT for approval prior to placing any asphalt courses.

Forward test results to MCDOT along with paving plans.

Compaction Tests

1. Pavement Subgrade – 1 test per 800 l.f. with at least 1 test per street.
2. Curb Subgrade – 1 test per 500 l.f. with at least 1 test per street, per side.
3. Base Material – 1 test per 800 l.f. with at least 1 test per street, per side.
4. Sidewalk Subgrade – 1 test per 500 l.f. with at least 1 test per street, per side.

Maximum densities of the material compacted shall be determined in accordance with AASHTO T-99, Method A. Additional tests may be required if pavement design method is other than standard.

Materials

- A. Base Material – Mat'l shall meet MAG Section 702.2. If "Select" material is used, the upper 4 inches must be aggregate base. Total thickness determined by lab tests, with the minimum thickness per the Roadway Design Manual.
- B. Asphalt Concrete – Mat'l. shall meet MAG Section 710.
- C. Preservative Seal Coat – Mat'l. shall meet MAG Section 713.
- D. Concrete – Mat'l. shall be of the class specified in MAG Std. Details and shall conform to MAG Section 725, unless otherwise directed by the County Engineer.
- E. Reinforced Concrete Pipe – Shall meet MAG Section 735. Rubber gaskets required under existing or proposed roadways. Minimum reinforced concrete pipe class III.
- F. Corrugated Metal Pipe – Shall meet MAG Section 621. Bituminous coated or Aluminized required under existing or proposed roadways.

Utilities

- A. Excavation – Shall conform to MAG Section 601. Attention is called to the necessary notification of all utilities.
- B. Backfill Materials – Shall conform to MAG Section 601.4.3.
- C. Compaction -
 1. Trench under existing or proposed pavement, curb or gutter, paved alley, or when any part of the trench excavation is 2' or less
from edge of pvmt or back of curb, backfill shall consist of ABC or select mat'l. Compaction shall conform to MAG Section 601. Water may be added to raise moisture to optimum ONLY.
 2. Trench in an unpaved road where the distance from the edge of traveled way to any part of the trench is 2' or less, backfill shall consist of ABC or select material. Mat'l from 12" above pipe to 2' below finished grade shall be mechanically compacted to 95%. The upper 2' shall be mechanically compacted to 95%. Water may be added to raise moisture to optimum ONLY.

3. Trench where edge is more than 2' from edge of pvmt, back of curb, or edge of traveled way on an unpaved road, the mat'l. from 12" above the

pipe to finished grade shall consist sound earth mat'l., compacted to not less than 85%. Water setting is permissible.

4. Trenches in unpaved alleys or other unimproved traveled ways, backfill and compaction per paragraph C.3 above shall be followed.

5. Trenches in utility easements, backfill shall consist of sound material. Water setting is permissible.

6. Water setting shall be performed in lifts not exceeding 8'. The backfill leveled, the trench saturated and the mat'l. jetted to:

(a) Within 1' of the pipe if the lift is 8' or less from the top of pipe, or

(b) At least 1' into the previous lift if multiple lifts are necessary.

Sufficient water must be used, with at least 30 p.s.i. of pressure. Intervals of jetting shall not exceed 5'.

7. Water setting is permitted in new subdivisions. No paving is permitted over water settled trenches until compaction tests have been approved by

the County Engineer.

D. Frequency - Tests shall be made at the locations & depths specified by the County Engineer or his representative. A min. of 1 set of tests required for each

4' of trench depth for trenches within 2' of pavement or back of curb. Otherwise 1 set of tests for each 6' of trench depth.

The min. number of passing tests per set anticipated for spec. compliance is estimated as follows:

Pavement cut crossing - 1 set per crossing.

(a) Longitudinal pvmt cuts or trench edge within 2' as previously stated - 1 set per 300', with 1 min. per block

(b) All other locations - 1 set per 400', with 1 min. per block.

Tests may be taken at 4' vertical intervals in the same vertical plane at the inspector's option. The County Engineer may order load tests performed to determine the stability and adequacy of backfill before paving. Test is performed with approx. 18,000 lb. axle load vehicle. Excessive movement or settlement shall be cause for rejection. If rejected, retest shall be at the owners or contractors expense.