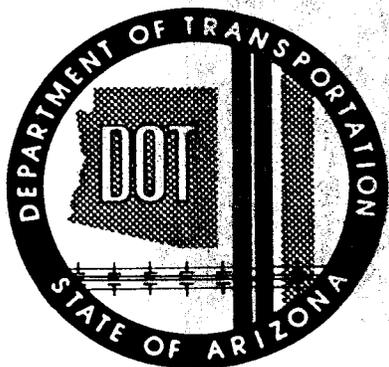


NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (N P D E S)

PART 2 PERMIT APPLICATION FOR THE PHOENIX AND TUCSON METROPOLITAN AREAS



ARIZONA DEPARTMENT OF TRANSPORTATION

NOVEMBER 1992

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- Appendix H: Section 107.15 of ADOT's Standard Specifications

1.0 GENERAL INFORMATION

1.1 APPLICANT AND CONTACT PERSON

Applicant: Arizona Department of Transportation (ADOT)
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Phoenix, Arizona 85007-3213

Contact Person: Mr. Roland Tang
Arizona Department of Transportation
Environmental Planning Services
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Room 240 E
Phoenix, Arizona 85007-3212
(602) 255-7769

1.2 OWNERSHIP STATUS AND APPLICATION TYPE

Ownership Status: Arizona Department of Transportation
State Government

Application Type: Individual

1.3 ROADWAYS COVERED BY APPLICATION

Included in this application are ADOT's roadways and drainage systems within the Metropolitan Areas of Phoenix and Tucson. The limits of the roadways covered in this application extend to, and in some cases beyond, the boundaries of the municipalities and counties within the State of Arizona which are required to submit a NPDES permit application.

1.3.1 Phoenix Metropolitan Area (Refer to the following map which shows the limits of the application.)

In the Phoenix Area, the application covers ADOT's facilities which are within the Cities of Phoenix, Tempe, and Mesa. All three of these municipalities have been identified by the EPA as having populations greater than 100,000 and are required to submit applications.

The application also covers areas beyond the boundaries of Phoenix, Tempe and Mesa which are urban in character and which include municipalities which may be required to submit an application either as a result of the 1990 census or as a result of having interconnected storm sewers with the larger cities.

The following is a list of ADOT's roadways which are included in this application for the Phoenix Area.

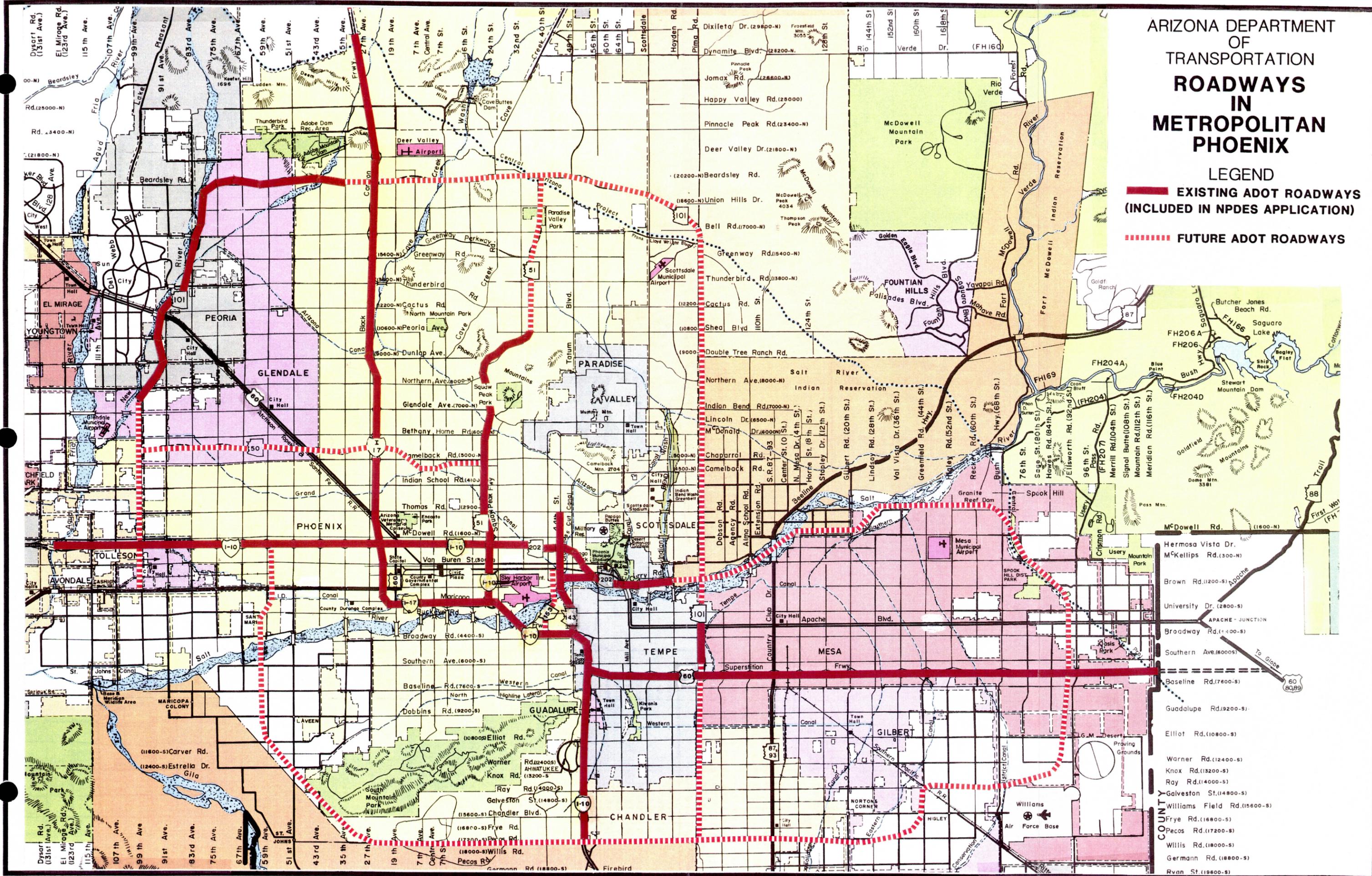
1. Interstate 10 - Agua Fria River to Pecos Road (Gila River Indian Reservation)
2. Interstate 17 - Interstate 10 to Dixileta Drive (Phoenix City Limit)
3. U.S. Highway 60 - Interstate 10 to Maricopa County Line (Mesa City Limit)
4. Loop 101
5. State Route 143
6. State Route 51
7. Loop 202

Loop 101, Loop 202, State Route 143, and State Route 51 are all urban highways which are only partially completed. For purposes of this application, only the portions which are completed or which are currently under construction are included herein.

The other State owned highways in the Phoenix Area include, Grand Avenue (U.S. 60, 89), Country Club Drive (S.R. 87), and Arizona Avenue (S.R. 87). ADOT is not aware of any major outfalls that are located in these roadways, therefore, they were not included in the application and are not shown on the "Drainage System and Major Outfall" maps presented herein.

ARIZONA DEPARTMENT
OF
TRANSPORTATION
**ROADWAYS
IN
METROPOLITAN
PHOENIX**

LEGEND
 **EXISTING ADOT ROADWAYS
(INCLUDED IN NPDES APPLICATION)**
 **FUTURE ADOT ROADWAYS**



- Hermosa Vista Dr.
- McKellips Rd.(300-N)
- Brown Rd.(1200-S)
- University Dr.(2800-S)
- BROADWAY JUNCTION
- Broadway Rd.(1400-S)
- Southern Ave.(6000-S)
- Baseline Rd.(7600-S)
- Guadalupe Rd.(9200-S)
- Elliot Rd.(10800-S)
- Warner Rd.(12400-S)
- Knox Rd.(13200-S)
- Ray Rd.(14000-S)
- Galveston St.(14800-S)
- Williams Field Rd.(15600-S)
- Frye Rd.(16800-S)
- Pecos Rd.(17200-S)
- Willis Rd.(18000-S)
- Germann Rd.(18800-S)
- Ryan St.(19600-S)

1.3.2 Tucson Metropolitan Area (Refer to the map on the following page)

The Tucson Metropolitan Area includes both the City of Tucson and Pima County, both of which are required to submit NPDES permit applications. The limits of the roadways included in this application correspond to the study area limits called out in Pima County's application.

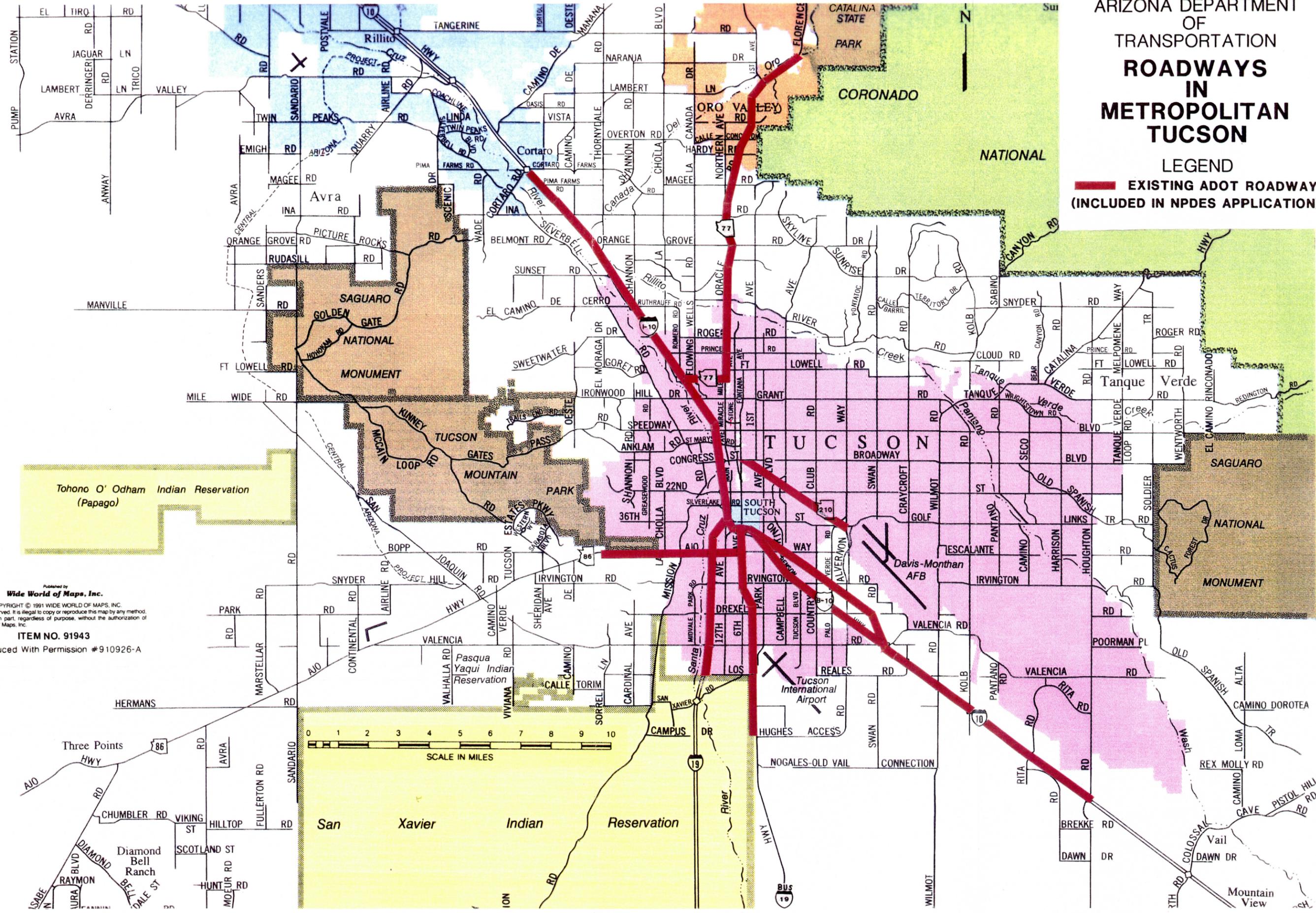
The following is a list of ADOT's roadways which are included in this application for the Tucson Metropolitan Area.

1. Interstate 10 - Cortaro Farms Road to Houghton Road
2. Interstate 19 - Interstate 10 to San Xavier Indian Reservation
3. State Route 77 - Catalina State Park to I-10 (Miracle Mile)
4. State Route 86 - U.S. Route 89 to Robles Pass (Tucson Mountains)
5. Business 10 (Benson Highway)
6. State Route 210
7. Business 19 - I-10 to Hughes Access Road

Construction on most of State Route 210 (Aviation Parkway) has not been completed. However, the storm drains were constructed in advance of the roadway and, therefore State Route 210 was included on the "Drainage System and Major Outfall" maps presented herein.

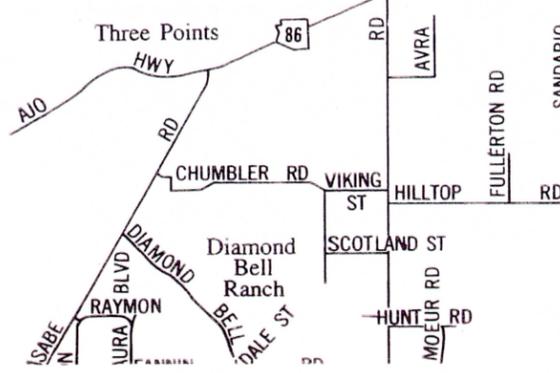
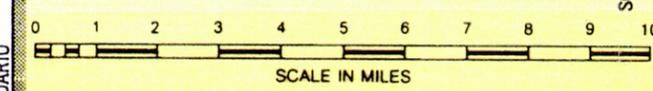
ARIZONA DEPARTMENT
OF
TRANSPORTATION
**ROADWAYS
IN
METROPOLITAN
TUCSON**

LEGEND
 EXISTING ADOT ROADWAYS
(INCLUDED IN NPDES APPLICATION)



Tohono O'odham Indian Reservation
(Papago)

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2.0 LEGAL AUTHORITY

The EPA's (Region 9) comments on ADOT's Part 1 permit application stated, "We have reviewed the description of existing legal authority which was provided in Section 2 of the Application. We believe that this information satisfies the requirements of both Part 1 and Part 2 of the permit application regulations." Based on that response from the EPA, no additional information with regard to legal authority is being provided in this Part 2 application. Refer to Appendix A for a copy of EPA's response to ADOT's Part 1 application.

3.0 SOURCE IDENTIFICATION

With respect to the identification of sources of pollutants, the Part 1 application explained that ADOT's only contribution is roadway drainage and therefore much of the land use data required by the EPA (i.e., description of land use, population density, location of landfills, NPDES permit holders, location of structural controls, and location of public lands) does not apply to ADOT. The EPA agreed and stated in their response to ADOT's Part 1 application that the land use data is not required from ADOT since it has already been gathered, or is being gathered, by the local cities. Refer to Appendix A for a copy of EPA's response to ADOT's Part 1 application.

The Part 1 application did, however, include information on the remaining EPA requirements which include: drainage system maps, location of outfalls, and historic use of ordinances to limit discharges of non-storm water into POTW's. The EPA stated in their response to the Part 1 application that the information submitted satisfies the permit application. However, the EPA requested additional information on the following two items regarding source identification.

Discharge Restrictions to Local POTW's

The EPA's letter of approval requested "examples (if any) of cases where pollutants from highways were discharged into the storm drain serving the highway system as a result of discharge restrictions to local POTW's." ADOT responded with the following statement:

ADOT is not aware of any case where pollutant discharges from the highways were denied discharge to the local POTW.

Location of Outfalls

The EPA's letter of approval stated that "the State of Arizona considers the Papago Channel to be a water of the U.S. Thus, the outfall locations are the points where the highway system discharges to the channel rather than the location where the channel discharges to the Agua Fria River." ADOT responded with the following:

ADOT does not consider the Papago Channel to be a Water of the U.S. Further, ADOT is not aware of any other agency that considers the Papago Channel to be a water of the U.S. The Arizona Department of Environmental Quality recently adopted new Water Quality Standards for Navigable Waters in which they list the waters of the United States; the Papago Channel was not listed.

Also, it is our understanding that in order for a channel to be considered a water of the U.S. it should either be natural or it should be a channelization of a natural occurring stream. The Papago Channel is not a natural occurring conveyance. It was constructed by ADOT to intercept diffuse surface flows that reach the Papago Freeway (I-10) and convey them to the Agua Fria River. In fact, the alignment of the channel runs nearly perpendicular to the natural direction of drainage.

3.1 PHOENIX METROPOLITAN AREA DRAINAGE SYSTEM AND MAJOR OUTFALLS

The drainage system and major outfall maps (Appendix B) have been updated since the Part 1 application to include the following data:

- a. **Outfalls Not Reported in Part 1**
One major outfall was inadvertently left off the maps included in Part 1. That outfall is the 36 inch pipe in I-17 (17-208.2) that discharges to the Arizona Canal Diversion Channel.
- b. **Outfalls Constructed Since Part 1**
The maps have also been updated to include all outfalls constructed since the Part 1 application was submitted. These include one new outfall on State Route 51 and two on Loop 202 (I.D. numbers 51-8.22, 202-8.28 and 202-8.65).
- c. **Interconnection with Other MS4's**
The information on the drainage system maps has been expanded to include an identification number for each point where the adjacent city storm drains discharge to the ADOT system and visa versa.

Appendix C contains a table summarizing ADOT's major outfalls in the Phoenix Metropolitan Area and Appendix D contains a table which summarizes the major interconnections.

3.2 TUCSON METROPOLITAN AREA DRAINAGE SYSTEM AND MAJOR OUTFALLS

The information on the drainage system and major outfall maps (Appendix E) has been expanded to include identification numbers on the interconnections with other MS4's. In addition, U.S. Highway 89 has been renamed and part of it (between Miracle Mile and I-10) has been abandoned to the City of Tucson.

Tables summarizing ADOT's major outfalls and interconnections can be found in Appendices F and G, respectively.

4.0 DISCHARGE CHARACTERIZATION

ADOT's Part 1 application explained that it was not necessary for ADOT to prepare a characterization plan. The reason is that ADOT's roadways represent one type of land use within the Metropolitan Areas which will be accounted for with each city's individual characterization plan. That is, roadway runoff will be included in the City's effort to characterize the storm water.

The EPA's response to the Part 1 application agreed and stated that a separate characterization plan (separate from the Cities) was not required from ADOT. Refer to Appendix A for EPA's response to Part 1.

5.0 STORM WATER MANAGEMENT PLAN

This storm water management plan describes both the current and planned best management practices that ADOT will incorporate into the construction and operation of the State's Highway system. These practices are continuously being reviewed and improved as new research and technology becomes available.

The plan is divided into four categories: Maintenance, Construction, Design and Transportation Control Measures.

Maintenance programs for the Phoenix Area (ADOT District 1) and the Tucson Area (ADOT District 2) are discussed separately since they are tailored to meet each individual District's needs. For instance, ADOT's storm sewer system in the Phoenix Area is quite extensive and includes pipes, open channels, pump stations and detention basins, whereas, the storm drainage system in the Tucson Area is primarily cross-drainage. Consequently, each metropolitan area requires its own unique system of highway storm sewer and storm drainage maintenance. Also the volume of traffic in the Phoenix Area is much greater which results in a more frequent street sweeping and litter pick-up program.

5.1 MAINTENANCE (PHOENIX METROPOLITAN AREA)

5.1.1 Street Sweeping and Litter Pick-Up

Street Sweeping

Highways are swept at least once each week. This is done on a contract basis with several local street sweeping companies.

Mechanized Litter Pick-Up

Litter, debris, dead animals and other discarded materials are picked up off the roadway surface on daily routes. This is done with a special truck that picks the litter and debris up off the roadway surface without the need for maintenance crews to walk into the highway traffic.

Manual Litter Pick-Up

Litter pickup is also done by ADOT personnel and contract labor on weekly, bi-weekly and monthly intervals based on location within the highway system (locations with higher traffic volumes require more frequent cleaning than others). The work includes cleaning up all types of litter and debris left at the roadway edge and within the right of way.

In the event that containers or other materials which appear to be hazardous are found during litter pickup, the crews are instructed to leave them in place so that they can be tested. If found to be hazardous, the wastes are properly disposed of. ADOT has a contract with a hazardous materials handler to test and dispose of such materials.

Adopt-A-Highway Program

The ADOT Adopt-A-Highway Program helps reduce litter on Arizona Highways by encouraging volunteers to clean up litter and by heightening public awareness of the need to keep the Highways clean.

The program allows organizations to adopt designated sections of highway for which they are responsible to pick up litter at least three times per year. ADOT erects signs which call the motorists attention to the litter control program. The signs also credit the adoptive organization for its effort in keeping the highway clean.

5.1.2 Storm Sewer System Maintenance

Pump Station Maintenance

All pump stations within ADOT's drainage system are inspected two or more times per year. If necessary, the wet wells are cleaned of sediment and debris. If, during the inspection, water is found in the wet well that appears to be polluted (evidenced by odor,

color, etc.) a sample is taken for immediate laboratory testing. If found to be polluted, the water is pumped out and properly disposed of. ADOT also endeavors to determine the source of the pollution to prevent future occurrences.

Tunnel Maintenance

ADOT owns and operates three large drainage tunnels (18' to 21' diameter) in the Phoenix Area. The profiles of the tunnels have sag points upstream from their outlet structures into the Salt River. The water in the tunnels is pumped out twice each year and the tunnel inspected and cleaned of debris and sediment.

Twice each year the water in the tunnels is laboratory tested to determine levels of pollutants being discharged to the Salt River.

Storm Sewer Maintenance

Large diameter storm sewers (those large enough to walk through) are inspected when needed. Required cleaning and maintenance is performed as found necessary from the inspection.

Storm Sewer Inlet/Catch Basin Maintenance

Inlets and catch basins on ADOT's drainage system are inspected and cleaned one or more times each year.

Open Channel Maintenance

Open channels within ADOT's drainage system are inspected annually and cleaned on a continuous basis. Maintenance crews observe the condition of the open channels on at least a weekly basis and they are cleaned of debris, vegetative growth, and sediment as required.

5.1.3 Control of Illicit Discharges

Permit System

Storm sewers which connect and drain into ADOT's drainage system are controlled by one of two means. If the connection is made during construction of the ADOT storm sewer, there is normally an Intergovernmental Agreement formed between ADOT and the city/agency which is discharging to ADOT's facility. If the connection is made subsequent to construction, the discharger is required to obtain a permit. In any case, the discharger is always required to either enter into an intergovernmental agreement with ADOT or obtain a permit from ADOT.

Inspection

ADOT District One, which operates and maintains ADOT highways in the Phoenix Metropolitan Area, has two full time employees which inspect for unpermitted activities within the ADOT's right of way. Their efforts include the identification of all types of illegal encroachments including construction work, dumping, and illicit discharges.

Pump Station Gas Detection

ADOT storm sewer pump stations are constructed with gas detection systems which sends an alarm signal to the District One office in the event that combustible substances are detected in the wet well. The alarm is monitored on a 24-hour basis. If the alarm is sounded, pump maintenance personnel can respond in 15 - 20 minutes to shut off the pump if necessary.

5.1.4 Emergency Response Program for Accidental Spills

The State of Arizona has a plan in place to respond to accidental spills of hazardous materials. The plan is called the State of Arizona Hazardous Materials Response and Recovery Plan. It defines authority and responsibility for individual State agencies in response to accidental spills. It also establishes an emergency management framework for joint state agency operations. ADOT signed a memorandum of understanding along with other State agencies, committees, and commissions, that indicated their concurrence with the plan. Since then ADOT has been actively carrying out its responsibilities under the plan.

ADOT District One has created its own response team called ALERT (an acronym for ADOT Local Emergency Response Team) that responds to all types of emergencies on ADOT's roadways including spills of hazardous material. The ALERT members are on call 24 hours a day, 7 days a week. Their duty in the event of a hazardous material spill is to contain the spill, take care of traffic problems, and manage the cleanup of the spill.

ADOT District One has prepared an ALERT Manual which designates individual responsibilities and lists key emergency personnel within ADOT and within the local communities. The District One traffic operation control center is manned 24-hours per day, 7-days per week for emergency calls and equipment monitoring. Four employees of the District Alert Team and 7 employees from District Maintenance are on call 24 hours a day, 7 days a week to respond to emergencies. In addition, the Safety and Health Section of ADOT has a statewide emergency response specialists who also responds.

In the event of an accidental spill, the Arizona Department of Public Safety (Highway Patrol) contacts the ADOT on-call ALERT members directly. The Arizona Department of Public Safety, the Arizona Department of Environmental Quality and the Arizona Department of Transportation district maintenance crews all respond to the accidental spill. ADOT's responsibilities include:

1. Coordinate with local fire and police departments.
2. Contain spill by blocking storm drains, building dikes, etc.
3. Take care of traffic problems.
4. Manage the cleanup of the hazardous materials.

In most cases, the individual or company that is guilty of the spill is held responsible for contracting with a waste management company to clean it up. However, in the event that the guilty party either can not be identified or does not have the necessary resources; ADOT has risk management funds in place to have the spill properly cleaned up.

5.1.5 Erosion Control Practices

Erosion Control Maintenance

ADOT District One has an ongoing maintenance program to provide permanent erosion control in areas of erodible soils. These maintenance programs include soil stabilization, reseeding bare ground, turf renovation, landscape irrigation maintenance, granite erosion control, and landscaping.

Irrigation System Pressure Detection

Through the use of telemetry, ADOT's landscape irrigation system is continuously monitored for water pressure and flow. Any malfunctions or leaks in the irrigation system will be detected by the pressure sensors which in turn will be automatically sent to a computer terminal at the District One offices.

The main purpose of this system is for water conservation. The system provides immediate detection of broken sprinklers and water pipes and consequently repair crews can respond very quickly. A side benefit of this system is control of erosion. Since ADOT repair crews can respond almost immediately to water system failures, there is less chance of soil erosion as a result of broken water pipes.

5.1.6 Roadside Vegetation Management Program

ADOT has a statewide roadside vegetation management program to control annual weeds that tend to choke out more desirable perennial grasses. The annual weeds provide little if any erosion control since they do not have extensive root systems and since they die out and blow away each year. On the other hand, grasses and other perennial species have extensive root systems that hold the soil in place.

The vegetation management activities include chemical spraying, mowing, blading, reseeding/planting, fertilizing, and brush removal. In the case of chemical spraying, ADOT commissioned a study to determine environmentally acceptable methods of applying herbicides. The following is an excerpt from the Arizona Department of Transportation Roadside Vegetation Management Program:

*Summary
of the
Environmental Requirements and Mitigation Measures*

1. *Qualified specialist supervisory personnel will be available to each district. Program supervisory personnel will possess the appropriate Arizona Agricultural Pesticide Control Advisor License.*

2. *It is ADOT procedure that applicators will possess the appropriate Restricted Use Applicators license. Chemical applicators will be trained in the safe storage, mixing, application, container disposal and recordation of chemicals used.*
3. *Well maintained spray equipment will be used in the application of chemicals.*
4. *Only E.P.A. labeled and registered herbicides will be used.*
5. *No E.P.A. listed prohibited or restricted chemicals will be used.*
6. *Review of research and testing will occur on a continual basis, adjustments to the proposed chemical list will reflect continuing public and environmental concerns.*
7. *Testing of the chemicals requiring further evaluation (Figure 2) will follow established guidelines.*
8. *Substituting an above tested chemical into the scenario applications will occur only after concurrence of the Roadside Review Committee, and preparation of updated environmental assessment.*
9. *All recommended label directions for rates of application and species treated will be strictly followed.*
10. *Drift control agents will be used with all herbicides as appropriate.*
11. *Spraying will not be attempted in adverse weather conditions. Applications will stop when wind velocities negatively affect accurate application.*

12. *All chemical treatments will be recorded in a daily spray log, and records will be kept.*
13. *The phenoxy herbicides will not be used in proximity of susceptible agricultural crops during the crop season in strict compliance to the herbicide label.*
14. *Threatened or Endangered federally listed proposed or candidate plant species known locations will be designated restricted management areas.*
15. *Special consideration will be given to areas where an encroachment potential by livestock can be anticipated.*
16. *ADOT will obtain all necessary permits from agencies who retain ownership of the right of way.*

5.2 MAINTENANCE (TUCSON METROPOLITAN AREA)

5.2.1 Street Sweeping and Litter Pick-Up

Street Sweeping

Highways are swept once per month by District Two except for U.S. Route 89 and State Route 86. The City of Tucson, through an intergovernmental agreement with ADOT, is responsible for surface maintenance on U.S. 89 and S.R. 86 within the Tucson City limits. ADOT sweeps the portions of U.S. 89 and S.R. 86, that fall outside of the City, four times per year.

Mechanized Litter Pick-Up

Litter, debris, dead animals and other discarded materials are picked up off the roadway surface daily. This is done with a special truck that picks the litter and debris up off the highway without the need for maintenance crews to walk into the highway traffic.

Manual Litter Pick-Up

Litter pickup is also done by ADOT personnel and contract labor on a monthly basis. The work includes cleaning up all types of litter and debris left at the roadway edge and within the right of way.

In the event that containers or other materials which appear to be hazardous are found during litter pickup, the crews are instructed to leave them in place so that they can be tested. If found to be hazardous, the waste are properly disposed of. ADOT has a contract with a hazardous materials handler to test and dispose of such materials.

Adopt-A-Highway Program

The ADOT Adopt-A-Highway Program helps reduce litter on Arizona Highways by encouraging volunteers to clean up litter and by heightening public awareness of the need to keep the Highways clean.

The program allows organizations to adopt designated sections of highway for which they are responsible to pick up litter at least three times per year. ADOT erects signs which call the motorists attention to the litter control program. The signs also credit the adoptive organization for its effort in keeping the highway clean.

5.2.2 Storm Sewer System Maintenance

Pump Station Maintenance

ADOT does not have any pump stations in the Tucson Area.

Tunnel Maintenance

ADOT does not have any tunnels in the Tucson Area.

Storm Sewer Maintenance

Storm sewers are inspected after large flows occur or at least once every two years. Required cleaning and maintenance is performed as found necessary from the inspection.

Storm Sewer Inlet/Catch Basin Maintenance

Inlets and catch basins on ADOT's drainage system are inspected and cleaned after large flows or at least once every two years.

Open Channel Maintenance

Open channels within ADOT's drainage system are inspected and cleaned on a continuous basis. Maintenance crews observe the condition of the open channels on at least a weekly basis and they are cleaned of debris, vegetative growth, and sediment as required.

Culvert Maintenance

Cross drainage culverts under ADOT highways undergo a formal inspection once every two years. They are also inspected after large flows.

5.2.3 Control of Illicit Discharges

Permit System

The system of permitting storm sewer connections is the same as District One follows in the Phoenix Area (Refer to Section 5.1.3).

Inspection

ADOT District Two, which operates and maintains ADOT highways in the Tucson Metropolitan Area, has three maintenance supervisors which work in the Tucson Area. Each supervisor has a crew of 12 to 13 people. During their normal inspection and maintenance

routine they inspect for unpermitted uses within ADOT's right of way which includes the identification of all types of illegal encroachments including construction work, dumping, and illicit discharges.

Pump Station Gas Detection

ADOT does not have any pump stations in the Tucson Area.

5.2.4 Emergency Response Program for Accidental Spills

The emergency response program described in Section 5.1.4 also applies to the Tucson Area.

ADOT District Two has three separate maintenance groups that respond to all types of emergencies on ADOT's roadways including spills of hazardous material. Each maintenance group has three people who are available to the Department of Public Safety (Highway Patrol) 24-hours a day, 7 days a week. As is the case in the Phoenix Area, their duty in the event of a hazardous material spill is to contain the spill, take care of traffic problems, and manage the cleanup of the spill. In addition, the Safety and Health Section of ADOT has a statewide emergency response specialists who also responds.

5.2.5 Erosion Control Practices

ADOT District Two has an ongoing maintenance program to provide permanent erosion control in areas of erodible soils. These maintenance programs include soil stabilization, reseeding bare ground, landscape irrigation maintenance, granite erosion control, and landscaping.

5.2.6 Roadside Vegetation Management Program

The roadside vegetation management program described in Section 5.1.5 also applies to the Tucson Area.

5.3 CONSTRUCTION

5.3.1 ADOT Plan for Compliance with the NPDES Permit Requirements

After October 1, 1992, all of ADOT's construction projects which result in grading or clearing 5 or more acres of land must be covered by a permit from the Environmental Protection Agency (EPA) prior to construction.

The EPA has issued a general permit for construction activities which will cover ADOT's projects. However, in order to be covered by the general permit, ADOT must do the following for each project: 1) prepare a storm water pollution prevention plan (SWPPP) which meets the minimum requirements of the general permit, and 2) submit to the EPA a notice of intent (NOI) to comply with the general permit. The following paragraphs summarize the procedures ADOT will follow to meet this federal permit requirement.

Develop standards and typical special provisions for BMP's

ADOT will develop standard details and special provisions for Best Management Practices (BMP's) to be used on ADOT construction projects. These will include several typical BMP's such as silt fences, mulching, and temporary dikes. It will also include the contractor's "good housekeeping" procedures such as proper solid waste management and chemical storage.

Train ADOT District Personnel

In each District office of ADOT, the resident engineers and their staff will be trained in the area of storm water erosion control and "good housekeeping" procedures on construction sites. These individuals will participate in the preparation of the storm water pollution prevention plans (SWPPP's) and oversee the implementation of the plans.

Plan Review at 60% Plan Submittal Stage

The resident engineers will review the construction plans with the Highway Development Group designers and erosion control specialists at the 60% submittal stage to determine if there are any erosion control measures which will need to be incorporated into the plans. The design of the temporary and permanent sediment and erosion control measures will be an integral part of the design process.

Plan Review at 95% Submittal Stage

The resident engineers and the Highway Development Group designers and erosion control specialists will review the construction plans at the 95% submittal stage with the following objectives:

a. **Review Permanent Erosion Controls**

The proposed permanent erosion control measures will be reviewed and any necessary changes will be incorporated.

b. **Prepare Temporary Erosion Control Plan for Construction Activities**

The resident engineer and the Highway Development Group designers and erosion control specialists will mark up the roadway plan and profile sheets with the BMP's that they anticipate will be required to control erosion during the different stages of construction.

After Award of Contract

a. **Critique Erosion Control Plan**

After the award of the construction contract, the resident engineer will attend the partnering session or pre-construction meeting and go over the SWPPP with the contractor. At this meeting the proposed temporary control measures will be adjusted and revised, if necessary, to accommodate field conditions and the contractor's scheduling and phasing of the project.

b. Prepare Revised Plan

Any changes as a result of the discussion at the above meeting will be incorporated into the SWPPP. The resident engineer will keep the original and a copy will stay with the contractor on the job site.

c. Certification of SWPPP

The contractor and subcontractor must sign the standard EPA certification statement as part of the SWPPP before conducting any professional services at the site identified in the SWPPP. In addition, the ADOT resident engineer will sign the SWPPP and the local municipality will also sign in the case of a project with local government participation.

d. Prepare Notice of Intent (NOI)

The ADOT resident engineer and the contractor will each prepare separate NOI's and submit them to the EPA at least 48 hours before any construction begins. In accordance with the general permit, ADOT is required to submit an NOI because of its control over the job specifications and the contractor is also required to submit an NOI because he has day-to-day control over the job.

The NOI's will be delivered by means of certified mail to assure that it reaches the EPA. The NOI's submitted by ADOT shall be signed by the District Engineer or his representative. The NOI shall be mailed to: Storm Water Notice of Intent, P.O. Box 1215, Newington, VA 22122. Copies of the ADOT NOI shall be sent to: Mr. Roland Tang, Environmental Planning Services, Mail Drop 619E, Phoenix, Arizona 85007; and Storm Water Coordinator, ADEQ, P.O. Box 600, Phoenix, Arizona 85001-0600.

Installation of Erosion Control

The resident engineer will work closely with the contractor on the installation of the erosion control features. Revisions which occur as a result of changing field conditions or construction phasing and scheduling will be noted on each copy of the SWPPP.

The SWPPP is intended to be a dynamic plan which can be revised as a result of changing conditions in the field. If the plan is found to be deficient in meeting one or more of the minimum permit requirements of the EPA, ADOT will be notified and will have 7 calendar days after the notification to provide the EPA written certification that the requested changes have been made.

Inspections

- a. The NPDES permit is a self inspection program. The EPA will not do regular inspections.
- b. In arid and semi-arid areas (less than 20" mean annual rainfall), the resident engineer is to inspect the project monthly or within 24 hours after a rainfall of 1/2 inch or greater. In areas with greater than 20" mean annual rainfall, the requirement is to inspect every 7 days or within 24-hours after a rainfall of 1/2" or greater.

Notice of Termination (NOT)

ADOT and the contractor can each submit a NOT after all the bare ground has been seeded and mulched and the permanent erosion and sediment control measures are in place.

The ADOT NOT will be signed by the District Engineer or his representative and mailed by means of certified mail to the EPA at the following address: Storm Water Notice of Termination, P.O. Box 1185, Newington, VA 22122. Copies of the NOT are to be sent to: Mr. Roland Tang, Environmental Planning Services, ADOT, Mail Drop 619E, Phoenix, Arizona 85007; and Storm Water Coordinator, ADEQ, P.O. Box 600, Phoenix, Arizona 85001-0600.

In the case of an urban highway project, where the landscaping contract comes after the paving project, the following rules apply for submitting the NOT.

- a. If the bare ground is seeded and mulched as part of the paving project, ADOT and the contractor will submit NOT's when the contract is complete. Then, at the start of the subsequent landscaping contract, both ADOT and the landscaping contractor will submit NOI's to obtain a new permit to cover the landscaping activities.
- b. If seeding and mulching are not part of the paving project, ADOT can not submit a NOT until after the completion of the landscaping project. Therefore, ADOT will be required to maintain temporary erosion controls in the area and perform regular inspections (in accordance with the EPA general permit) during the interim period after the paving project is complete and before the landscape contract begins.

It should be noted that in this case the paving contractor will submit a NOT at the end of the paving contract and the landscape contractor will submit a NOI before he begins work. In the interim, ADOT will have sole responsibility for the project.

Retention of Records

All records are required to be kept for a minimum of 3 years after submittal of the NOT.

Other EPA Permit Requirements

a. Asphalt and Concrete Plants

Asphalt and concrete plants are not covered by the EPA general permit for construction sites. The EPA considers these facilities to be an industrial activity which requires separate coverage under EPA's general permit for industrial activities. This is true in all cases; including the case where the plants are portable and located within ADOT's right-of-way.

The contractor, or subcontractor, is responsible for filing the necessary documents with the EPA. ADOT cannot file the documents because ADOT does not own and operate the plants.

b. ADOT Materials Sources

As is the case with asphalt and concrete plants, materials sources are not covered by EPA's general permit for construction sites. The EPA considers these facilities to be an industrial activity which requires separate coverage under EPA's general permit for industrial activities.

In the case of commercial materials sources or contractor owned sources, the owner and/or operator is required to obtain permit coverage.

In the case of ADOT owned materials sources, ADOT will obtain a permit and require each contractor that works the source area to obtain a permit (much like permits for construction sites). The contractor will be required to leave the source area in a reclaimed state by finish grading the site and seeding the bare ground in a manner acceptable to ADOT.

5.3.2 ADOT Standard Specifications

Section 107.15 (Prevention of Landscape Defacement; Protection of Streams, Lakes and Reservoirs) of ADOT's Standard Specifications for Road and Bridge Construction have recently been rewritten to include the EPA's NPDES permit requirements. Among other things, the specification requires the contractor to carry out his responsibilities as described above in ADOT's plan for compliance with the NPDES permit requirements. These responsibilities include implementation of good housekeeping features; installation of erosion control measures; participation in preparing the storm water pollution prevention plan (SWPPP); submittal of the Notice of Intent; posting the SWPPP at the construction site; participation in the inspection of the SWPPP measures; and maintenance of the erosion control measures. In addition, the specification requires the contractor to obtain permit coverage for portable asphalt and concrete batch plants.

Refer to Appendix H for a copy of Section 107.15 of ADOT's Standard Specifications.

5.4 DESIGN

5.4.1 Landscaping

The design of ADOT highways includes landscaping to provide permanent erosion control on finish graded construction slopes. The type of the landscape design depends on the character of the adjacent land. For example, in urban areas all bare ground is covered with decomposed granite and trees and shrubs are planted to provide an aesthetically pleasing appearance and help to further stabilize the ground. Landscape irrigation systems are designed into these projects to foster plant growth and insure plant life in the arid environment. In the rural areas, the construction slopes are seeded with native seed mixes and treated with straw mulches. In both cases, urban and rural highways, bare ground is stabilized to provide permanent erosion control.

5.4.2 Retention/Detention Basins

Currently, ADOT's storm sewer system includes several retention and detention basins. The detention basins were designed to control storm water quantity rather than quality and; therefore, they were typically designed as offline type basins which store the peak of the flood and provide little in terms of reducing stormwater pollutants. There are; however, several retention basins which drain by infiltration and thereby reduce the amount of pollutants discharged to the receiving waters.

ADOT recognizes that detention basins which are designed for the dual purpose of managing stormwater quantity and quality can be quite effective in reducing pollutant loads. Therefore, where appropriate, future detention basins will be designed to provide stormwater retention and increased detention times to help remove pollutants.

5.4.3 Erosion Control

The design of ADOT's highways include many permanent erosion control features to protect areas subject to erosion. Examples of the features include channel linings, culvert outlet protection, slope drains, check dams, etc. These erosion control features are reviewed by ADOT on an on-going basis to determine their effectiveness and to consider new alternatives.

5.5 TRANSPORTATION CONTROL MEASURES

Transportation control measures include a number of programs aimed at reducing vehicle emissions. They include traffic control measures, vehicle emission controls and programs to reduce traffic volume. For the most part, these programs have been instituted for the purpose of improving air quality, however, an additional benefit is a reduction in pollutant deposition on the highways.

As one of four members of the decision making structure for air quality planning in Arizona, ADOT is committed to the following described pollution reduction strategies.

5.5.1 Vehicle Emissions Testing

The Arizona Department of Environmental Quality requires annual emissions testing of all vehicles registered in Maricopa (Phoenix Area) and Pima (Tucson Area) Counties. Vehicles that do not meet minimum requirements are not registered until appropriate repairs have been made and the vehicles are retested to insure compliance with emission standards.

5.5.2 High Occupancy Vehicle (HOV) Lanes

ADOT is incorporating HOV lanes into the design and construction of the urban highway system. These lanes are restricted to use by buses and carpools. ADOT also funds advertising campaigns to promote the use of the HOV lanes. The intent of providing these lanes is to encourage mass transit and thereby reduce traffic volume.

5.5.3 Intelligent Vehicle Highway System (IVHS)

IVHS is an electronic system of metering highway on-ramp traffic, coordinating traffic signals, controlling electronic billboards and monitoring traffic volumes. The system is monitored 24 hours per day at the traffic operation control center. This system helps to minimize stop-and-go traffic which reduces pollutant generation and deposition. Idling vehicles in traffic generate more pollutants because of incomplete fuel combustion.

5.5.4 Demonstration Projects

ADOT provides funding for demonstration projects which help to reduce pollution. Example projects include bike racks on City buses; bike lockers at bus stations; new and expanded bus routes and upgraded bus shelters. All of these programs are intended to help reduce the volume of traffic.

5.5.5 Clean Air Campaign

ADOT is an official sponsor of the Clean Air Campaign. This is the "don't drive one in five" campaign which encourages commuters to use an alternative means of transportation one day out of the week.

5.5.6 Bicycle Planning

ADOT has recently hired a bicycle coordinator to prepare a bicycle plan for the State and review highway plans for opportunities to provide bicycle and pedestrian paths. The idea is to help provide alternative means of transportation to reduce traffic volume.

5.5.7 Capitol Ride Share Program

ADOT provides promotional materials to encourage State employees to reduce travel. This includes flexible work schedules, assisting in carpooling, and providing mass transit information.

6.0 FISCAL RESOURCES

The Arizona Department of Transportation does not have a specific fund dedicated only for its storm water programs. There are, however, several sources available for adequate funding of this program which include: The Arizona Department of Transportation Five-Year Construction Program, The Highway Maintenance Program, and The Administrative Budget.

Five Year Construction Program

ADOT's Five-Year Construction Program is a source that will be used when a storm water issue or concern is related to a construction project that is in the existing program. The current budget for the Five-Year Program is \$2.1 billion. The Program is reviewed on an annual basis, and at that time, new projects and modifications to existing projects are made. There are several sources of funds that are identified to fund the program and they are: federal, state, local, and private. The approval process required for incorporation of the storm water issues into the program is the identification of the project and funding requirements and submittal to the Priority Planning Committee, and then in turn, to the Transportation Board for final approval. The Program is adopted July 1st of each year.

Highway Maintenance Program

Storm water issues related to maintenance will be covered under our Highway Maintenance Program which is state funds. The issues and costs are identified and submitted for approval to the legislature in August of each year. Funds for new issues are received on July 1st of the following year. Currently, we receive a total of approximately \$67 million in this program.

Administrative Budget

An additional source is our Administrative Budget which, again, is state funded and appropriated by the Arizona Legislature. The process is identical to the Maintenance Program. We receive a total of approximately \$44 million in state funds.

Correspondence



ARIZONA DEPARTMENT OF TRANSPORTATION



HIGHWAYS DIVISION

206 South Seventeenth Avenue - Phoenix, Arizona 85007-3213

FIFE SYMINGTON
Governor

GARY K. ROBINSON
State Engineer

CHARLES E. COWAN
Director

November 15, 1991

Mr. Eugene Bromley
U.S. Environmental Protection Agency
Region 9, Permits Issuance Section (W-5-1)
75 Hawthorne Street
San Francisco, CA 94105

Re: Arizona Department of Transportation
Part 1 NPDES Permit Application

Dear Mr. Bromley:

Enclosed are two (2) copies of the Part 1 NPDES Permit Application for the Arizona Department of Transportation (ADOT). It is an individual application that covers both the Phoenix and Tucson metropolitan areas.

As you know, the NPDES regulations were written for municipal and county governments, and, therefore, many of the application requirements do not apply to ADOT. We have attempted, however, to thoroughly cover the Part 1 requirements and have provided explanations within the application for those regulation requirements that do not apply.

We would like to thank you for the assistance you have given us and our consultant (The WLB Group, Inc.) during the preparation of this application. After you have had an opportunity to review the application, we believe a meeting would be in order to discuss the Part 2 requirements for ADOT.

Respectfully submitted,

ARIZONA DEPARTMENT OF TRANSPORTATION


GARY K. ROBINSON
State Engineer

GKR:RT:eh

Enclosures



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, Ca. 94105-3901

RECEIVED

FEB 27 1992

STATE ENGINEER

ARIZONA DEPT. OF TRANSPORTATION
HIGHWAYS DIVISION
ENVIRONMENTAL PLANNING SERVICES

In Reply
Refer To: W-5-1

MAR - 3 1992

RECEIVED

FEB 27 1992

STATE ENGINEER

FEB 21 1992

GR 3/2/92
Gary Robinson
State Engineer
Arizona Department of Transportation
Highways Division
206 South Seventeenth Avenue
Phoenix, Arizona 85007-3213

RECEIVED

Dear Mr. Robinson:

We have reviewed the Part 1 NPDES permit application submitted on November 15, 1991 by the Arizona Department of Transportation (ADOT) for discharges of storm water runoff from ADOT's municipal separate storm sewer system (MS4) located in the Phoenix and Tucson metropolitan areas. This application was submitted pursuant to the final permit application regulations promulgated by EPA on November 16, 1990 (55 Federal Register 47990) for industrial and municipal storm water discharges.

Region 9's specific comments on the Part 1 application are enclosed. We have organized our comments in accordance with the requirements of the permit application regulations which require submittal of information in the following basic areas:

- (1) general information
- (2) legal authority
- (3) source identification
- (4) discharge characterization
- (5) existing storm water management programs
- (6) fiscal resources

The information provided by ADOT very nearly completes the requirements of Part 1 of the permit application regulations. However, as discussed in the Enclosure, a small amount of additional information concerning possible sources of pollutants and fiscal resources is necessary to complete Part 1.

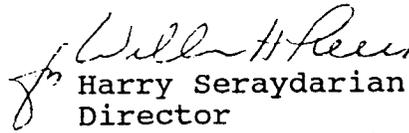
This letter formally approves Part 1 of ADOT's storm water permit application with the understanding that ADOT will supply the additional information where indicated in the Enclosure as soon as possible. We would also be happy to meet with ADOT to

-2-

discuss the Part 2 requirements as suggested in your November 15 letter.

Should you have any questions, or if you would like to arrange a meeting to discuss the Part 2 requirements, please refer your staff to Eugene Bromley of the Permits Issuance Section at (415) 744-1906.

Sincerely,



Harry Seraydarian
Director
Water Management Division

Enclosure

cc: Lionel Klikoff, Arizona DEQ (w/enclosure)
Valerie Rice, Maricopa County FCD (w/enclosure)
James Barry, Pima County FCD (w/enclosure)
Frank Fairbanks, City of Phoenix (w/enclosure)
Benny Young, City of Tucson (w/enclosure)

ENCLOSURE - EPA, REGION 9 COMMENTS ON ADOT PART 1 STORM WATER
NPDES PERMIT APPLICATION

(1) General Information

The final storm water regulations at 40 CFR 122.26(d)(1)(i) require the submittal of the name and address of the applicant, a contact person and telephone number, and information concerning the ownership of the MS4. We have reviewed the information which was submitted in this regard and believe that the application is complete with respect to these items.

(2) Legal Authority

For Part 1 of the application, the regulations at 40 CFR 122.26(d)(1)(ii) require a description of the applicant's existing legal authority to regulate pollutants entering municipal storm drains. If the existing authority is not sufficient to satisfy the criteria set forth for Part 2 of the application (40 CFR 122.26(d)(2)(i)), the applicant must acquire the necessary additional authority. The Part 2 regulations require that the applicant possess legal authority to do the following:

- a) control through ordinance, permit, contract, order or other means discharges of pollutants into the MS4 from storm water discharges associated with industrial activity;
- b) prohibit illicit connections to the MS4;
- c) control spills or the dumping of materials other than storm water into the MS4;
- d) control through interagency agreements the contribution of pollutants from one portion of the MS4 to another;
- e) require compliance with ordinances, permits, contracts or orders; and
- f) conduct inspections, surveillance and monitoring to ensure compliance with permits or ordinances.

We have reviewed the description of existing legal authority which was provided in Section 2 of the application. We believe that this information satisfies the requirements of both Part 1 and Part 2 of the permit application regulations.

(3) Source Identification

The storm water regulations at 40 CFR 122.26(d)(1)(iii) require a broad range of information concerning sources of pollutants into the MS4 and related information including:

- a) historic use of ordinances to limit discharges of non-storm water into POTWs;
- b) map of the drainage system;
- c) location of outfalls;
- d) description of land use activities;
- e) population density and growth projections;
- f) location of landfills and treatment, storage and disposal (TSD) facilities;
- g) NPDES permit holders which discharge to the MS4;
- h) location of major structural controls; and
- i) location of public lands.

As noted in your application, the intent of Item (a) above is to obtain information concerning possible discharges to the storm drains which occur as a result of discharge limitations to local POTWs. This may or may not have much relevance to pollutants in runoff from state highways. However, the application should include examples (if any) of cases where pollutants from highways were discharged into the storm drain serving the highway system as a result of discharge restrictions to local POTWs.

With regards to Items (b) and (c) above, we have reviewed the information submitted and believe that the application is complete. However, in the Phoenix area, the State of Arizona considers the Papago Channel to be a water of the U.S. Thus, the outfall locations are the points where the highway system discharges to the channel rather than the location where the channel discharges to the Aqua Fria River.

As noted in your application, in the Tucson area the distinction between the MS4 and waters of the U.S. is still being reviewed. However, we believe that the information which was provided regarding the highway drainage system in the Tucson area is sufficient to satisfy the Part 1 permit application requirements.

Additional information is not required from ADOT pursuant to Items (d) through (i) above since this information has already been gathered (or is being gathered) by the Cities of Phoenix and Tucson.

(4) Discharge Characterization

The storm water regulations at 40 CFR 122.26(d)(1)(iv) require the following information pertaining to storm water discharges from a municipal system:

- a) data on rainfall statistics and average number of storms;
- b) existing quantitative data on the volume and quality of the discharges;
- c) name of receiving waters and water quality assessment for the receiving waters;
- d) field screening analysis; and
- e) discharge characterization plan to be conducted for Part 2 of the application.

With regards to Items (a), (b) and (c), this information was provided by either the City of Phoenix or Tucson and does not need to be provided again by ADOT. These cities also conducted field screening analyses (as required by Item (d) above) which alone would satisfy the requirements of the permit application regulations. However, the field screening analysis conducted by ADOT provides a useful supplement to the information provided by the Cities of Phoenix and Tucson.

The Cities of Phoenix and Tucson have also submitted discharge characterization plans pursuant to Item (e) above and a separate plan is not required from ADOT.

(5) Existing Storm Water Management Program

The storm water regulations at 40 CFR 122.26(d)(1)(v) require a discussion of existing storm water management activities. Section 5 of the application provides a description of existing programs which we believe satisfies the requirements of the regulations.

(6) Fiscal Resources

The storm water regulations at 40 CFR 122.26(d)(1)(vi) require a discussion of the applicant's fiscal resources and capabilities for completing Part 2 of the application and ultimately implementing a storm water management program.

Section 6 of the application provides a discussion of the funding mechanism for current programs, including construction and maintenance of the highway system. However, additional clarification is needed regarding the funding for the storm water program over the longer term.

After submittal of Part 2 of the application by ADOT, Region 9 will issue an NPDES permit for the runoff from the state highway system. The permit will require the implementation of a

storm water management program and monitoring program over the 5 year term of the permit. The scope and cost of these programs may exceed the efforts which ADOT is already devoting to storm water pollution controls. The application needs to provide information concerning the funding available to ADOT if it turns out that additional funding is needed. For example, could funds be shifted to highway maintenance activities from some other source? Could the operating budget be increased if necessary? In addition, could highway construction funds be used for construction of structural controls such as detention/retention basins for storm water pollution control? Thus, in order to complete Part 1 of the application, this issue needs to be addressed.



ARIZONA DEPARTMENT OF TRANSPORTATION



HIGHWAYS DIVISION

ARIZONA DEPARTMENT OF TRANSPORTATION
206 South Central Avenue - Phoenix, Arizona 85007-3213
HIGHWAYS DIVISION
ENVIRONMENTAL PLANNING SERVICES



FIFE SYMINGTON
Governor

APR 30 1992

April 30, 1992

GARY K. ROBINSON
State Engineer

CHARLES E. COWAN
Director

RECEIVED



APR 30 1992

Mr. Eugene Bromley
U.S. Environmental Protection Agency
Region 9, Permits Issuance Section (W-5-1)
75 Hawthorne Street
San Francisco, CA 94105

DEPUTY STATE ENGINEER
HIGHWAY DEVELOPMENT

Re: Arizona Department of Transportation
Part 1 NPDES Permit Application
WLB No. 289027

Dear Mr. Bromley:

This letter is written to provide the additional information requested with EPA's letter of approval dated February 21, 1992. The following clarification to our Part 1 application should provide the EPA with the information requested.

SOURCE IDENTIFICATION

Historic Use of Ordinances to Limit Discharges of Non-Stormwater into POTWs.

EPA's letter of approval requested "examples (if any) of cases where pollutants from highways were discharged into the storm drain serving the highway system as a result of discharge restrictions to local POTWs."

ADOT is not aware of any case where pollutant discharges from the highway were denied discharge to the local POTW.

Location of Outfalls.

The letter of approval stated that "the State of Arizona considers the Papago Channel to be a water of the U.S. Thus, the outfall locations are the points where the highway system discharges to the channel rather than the location where the channel discharges to the Agua Fria River."

ADOT does not consider the Papago Channel to be a Water of the U.S. Further, ADOT is not aware of any other agency that considers the Papago Channel to be a water of the U.S. The Arizona Department of Environmental Quality recently adopted new Water Quality Standards for Navigable Waters in which they list the waters of the United States and the Papago Channel was not listed.

Also, it is our understanding that in order for a channel to be considered a water of the U.S., it should either be natural or it should be a channelization of a natural occurring stream. The Papago Channel is not a natural occurring conveyance. It was constructed by ADOT to intercept diffuse surface flows that reach the Papago Freeway (I-10) and convey them to the Agua Fria River. In fact, the alignment of the channel runs nearly perpendicular to the natural direction of drainage.

FISCAL RESOURCES

Your agency requested clarification regarding the funding for the stormwater program over the long term. The approval letter acknowledges the fact that the costs of any additional stormwater programs is unknown at this time. Therefore, the information required relates to the mechanism for funding these programs should additional funding be necessary. The following paragraphs explain ADOT's funding sources and how monies could be made available to the stormwater pollution program.

The Arizona Department of Transportation does not have a specific fund dedicated only for its stormwater programs. There are, however, several sources available for adequate funding of this program which include: The Arizona Department of Transportation Five-Year Construction Program, The Highway Maintenance Program and The Administrative Budget.

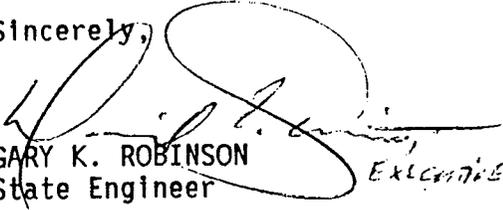
1. ADOT's Five-Year Construction Program is a source that will be used when a stormwater issue or concern is related to a construction project that is in the existing program. The current budget for the Five-Year Program is \$1.36 billion. The Program is reviewed on an annual basis, and at that time, new projects and modifications to existing projects are made. There are several sources of funds that are identified to fund the program and they are: federal, state, local, and private. The approval process required for incorporation of the stormwater issues into the program is the identification of the project and funding requirements and submittal to the Priority Planning Committee, and they in turn, to the Transportation Board for final approval. The Program is adopted July 1st of each year.
2. Stormwater issues related to maintenance will be covered under our Highway Maintenance Program which is state funds. The issues and costs are identified and submitted for approval to the legislature in August of each year. Funds for new issues are received on July 1st of the following year. Currently, we receive a total of approximately \$63 million in this program.
3. An additional source is our Administrative Budget which, again, is state funded and appropriated by the Arizona Legislature. The process is identical to the Maintenance Program. We receive a total of approximately \$49 million in state funds.

Mr. Eugene Bromley
Page 3
April 30, 1992

We hope that these clarifications to our Part 1 application satisfy your request. If you need any additional information, please contact Roland Tang of ADOT, Environmental Planning Services, at (602) 255-7769.

Sincerely,

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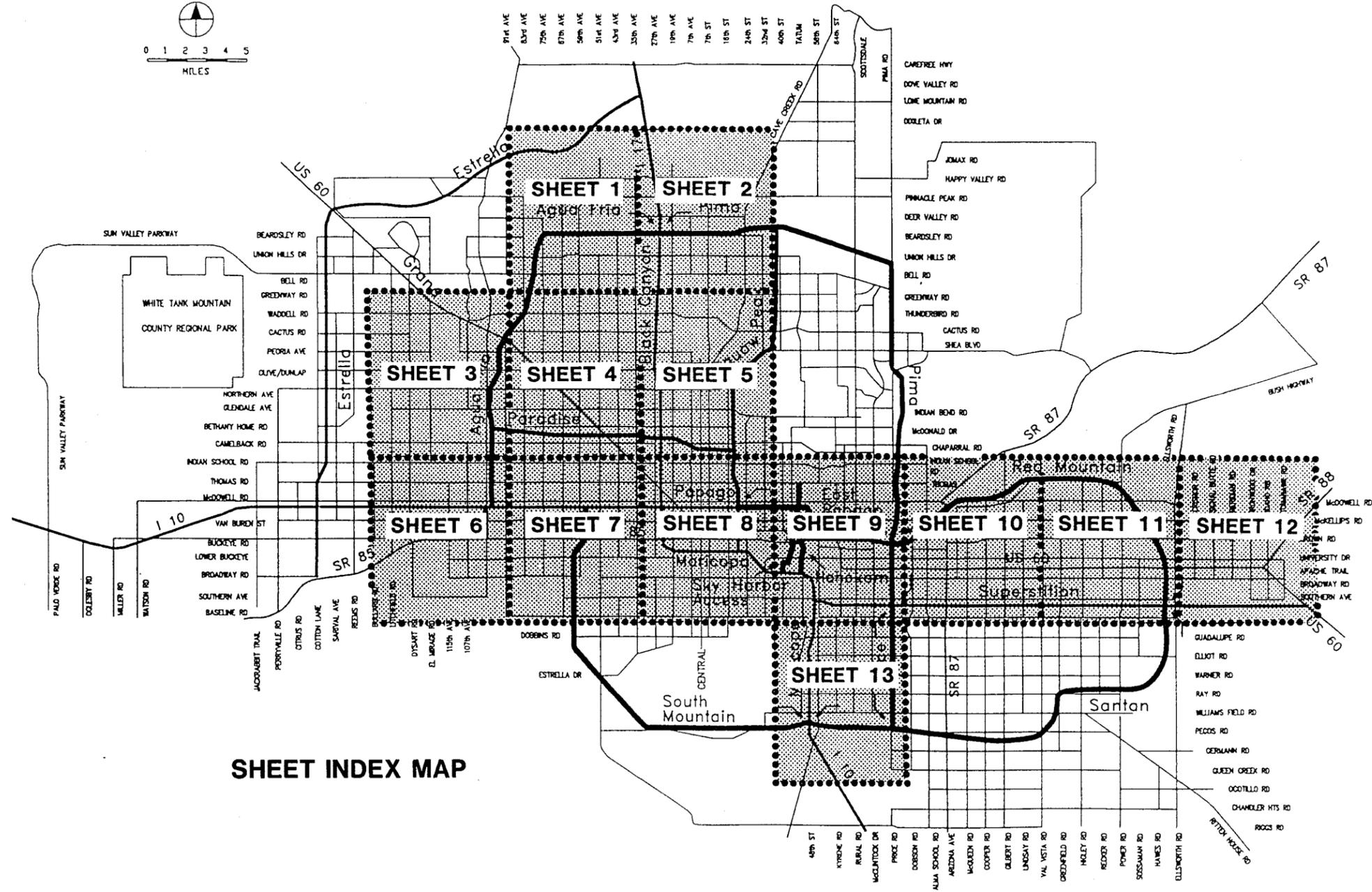
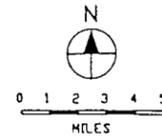

GARY K. ROBINSON
State Engineer

Executive Assistant

GKR:RT:eh
58+

**Drainage System
and Major Outfalls
(Phoenix Area)**

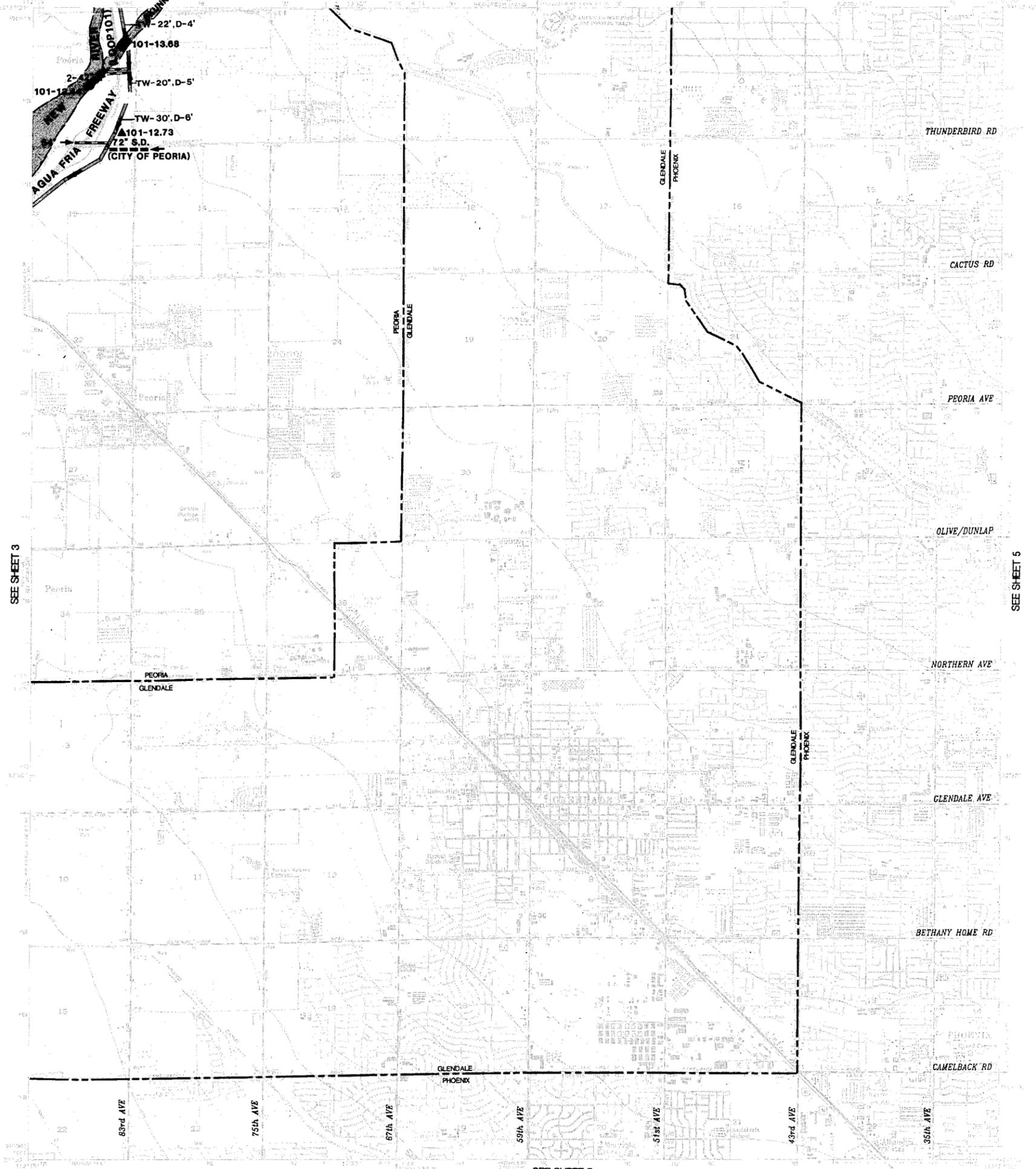
ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN PHOENIX



SHEET INDEX MAP

The WLB Group Inc. **WLB**

Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in Tucson, Phoenix,
Las Vegas and Rancho Cucamonga, CA
333 East Osborn Road Suite 300
Phoenix, Arizona 85012 (602) 279-7427



SEE SHEET 3

SEE SHEET 5

SEE SHEET 7

Map(s) edited, and published by the Geological Survey
Control by 1953 and 1954
Contours and drainage contours from aerial photographs
taken 1954. Topography by stereoscopic method 1957
Projection projection 12000 feet grid based on
Arizona coordinate system, central meridian
109° 00' W. Universal Transverse Mercator zone
12N, datum of 1929. 1929 North American Datum
The datum of the present map is the datum of 1983
The projection is the 2-parameter Gauss-Krüger
projection with the datum of 1983
The datum of the map is the datum of 1983
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ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN PHOENIX



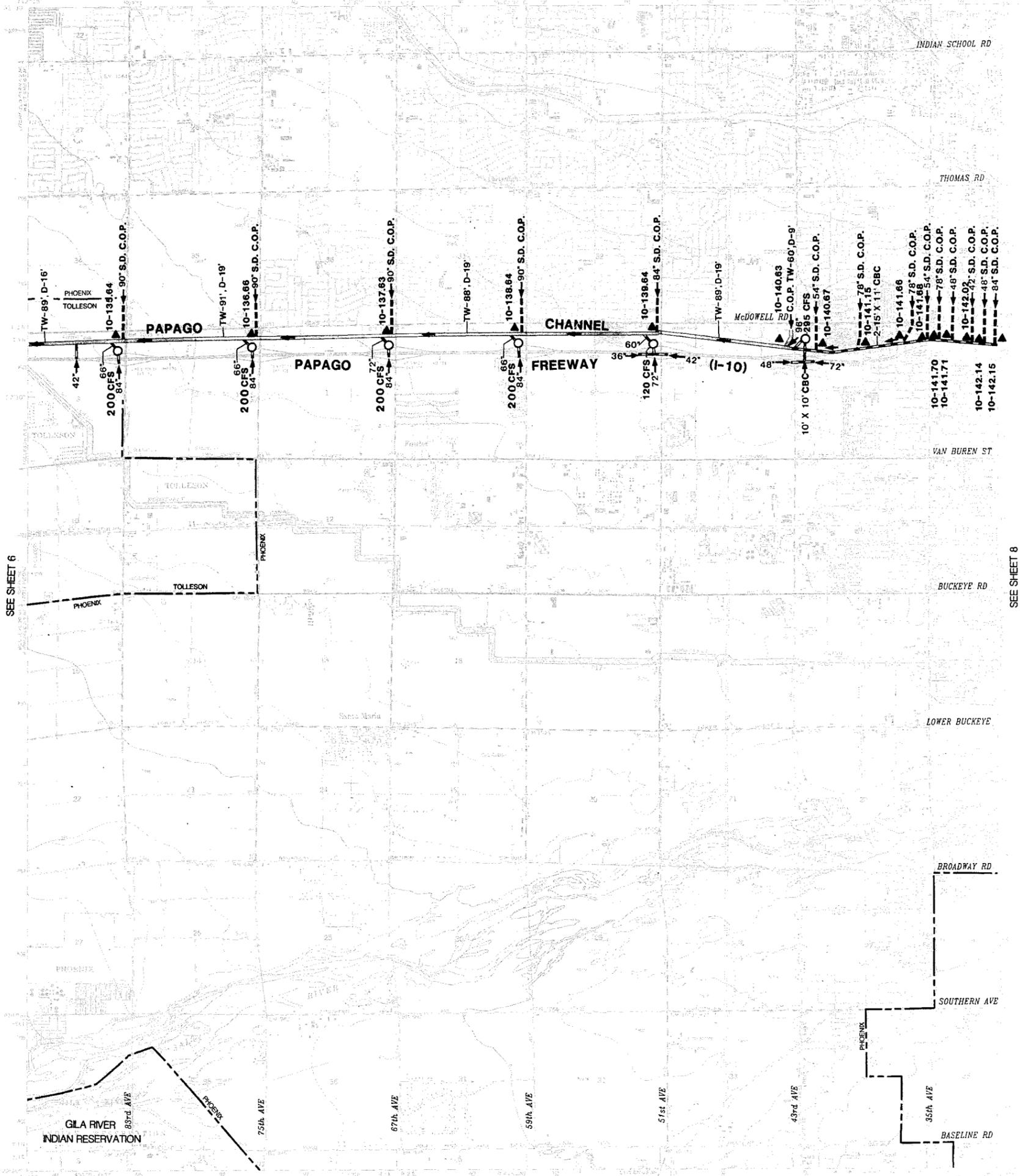
LEGEND	
	OPEN CHANNEL (TOP WIDTH 48', DEPTH 8')
	ADOT STORM DRAIN PIPE (48" DIA)
	OTHER AGENCY STORM DRAIN PIPE
	DRAINAGE TUNNEL
	PUMP STATION (15 CFS CAPACITY)
	MAJOR OUTFALL WITH IDENTIFIER
	DIRECTION OF FLOW
	CROSS DRAINAGE STRUCTURE
	DROP STRUCTURE
	MAJOR INTERCONNECTION WITH IDENTIFIER
	DETENTION BASIN
	RETENTION BASIN
	FLOODWAY BOUNDARY
	MUNICIPAL BOUNDARY
	CONCRETE BOX CULVERT
	REINFORCED CONCRETE PIPE
	CORRUGATED METAL PIPE
	STORM DRAIN
	CITY OF PHOENIX (TEMPE)

ROAD CLASSIFICATION
 Major Road
 Minor Road
 U.S. Route
 State Route
 GLENDALE, ARIZ.
 115500-115500
 115500-115500
 115500-115500



REVISED NOVEMBER 1992
NOVEMBER 1991





SEE SHEET 6

SEE SHEET 8

Obtained by the Aerial Map Service
Published for distribution by the Geological Survey
Copyright © 1992, 1988, 1984, and 1980
Topography by photogrammetric methods; original
photographs taken 1951. First edition 1957-1959.
This map is a reproduction of the original map based on
National Geographic Society's 1957-1959 edition of the
Arizona Department of Transportation's 1988 edition of the
1:25,000 scale map of the Phoenix-Tolleson area. It is
not intended to be used for navigation or other purposes
requiring high accuracy. It is intended for general
reference only. All distances are in statute miles unless
otherwise noted.
There may be some inconsistencies between the map
and the National Geographic Society's 1957-1959 edition of the map.

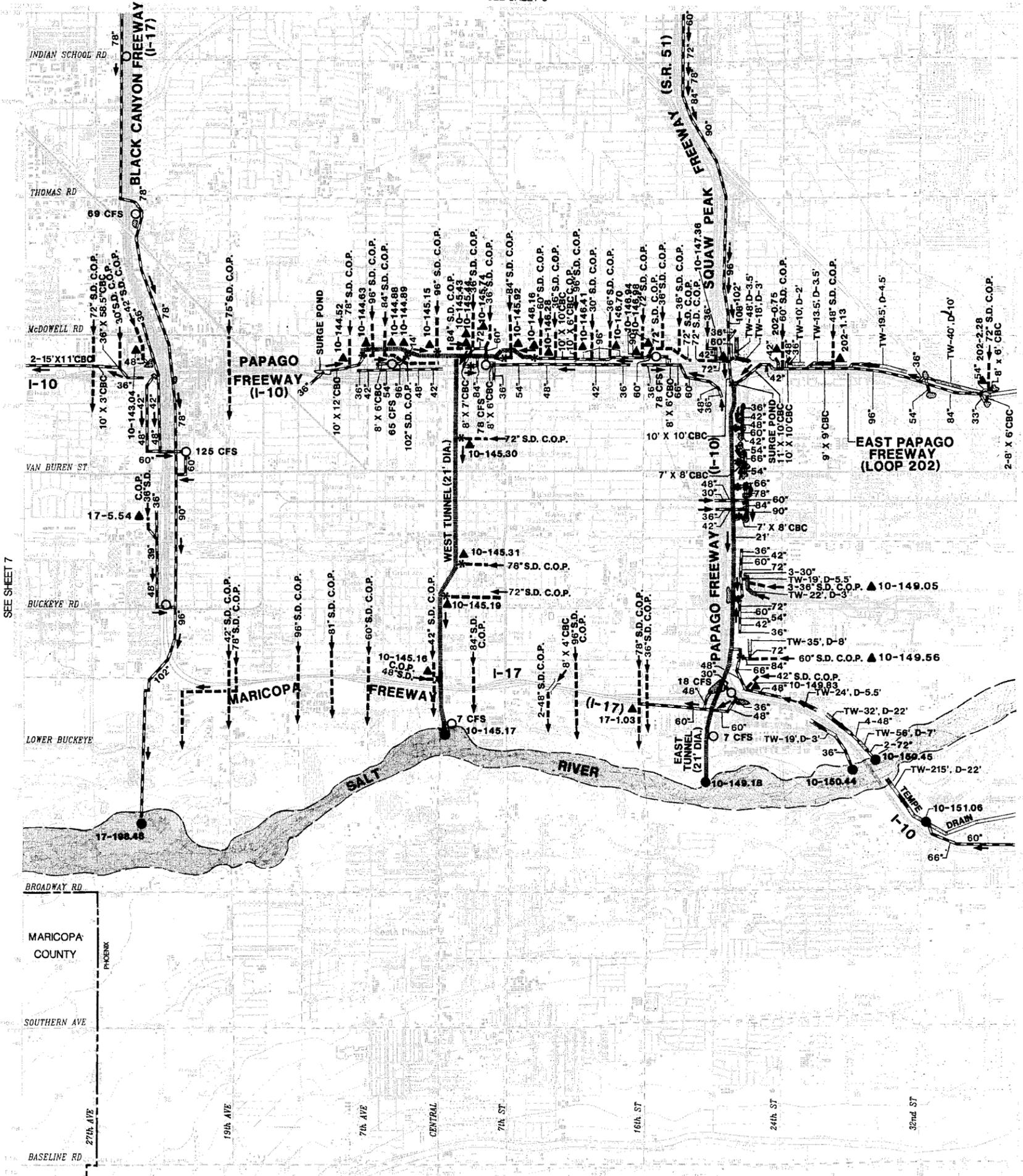
ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN PHOENIX



LEGEND	
	OPEN CHANNEL (TOP WIDTH 48", DEPTH 8")
	ADOT STORM DRAIN PIPE (48" DIA.)
	OTHER AGENCY STORM DRAIN PIPE
	DRAINAGE TUNNEL
	PUMP STATION (15 CFS CAPACITY)
	MAJOR OUTFALL WITH IDENTIFIER
	DIRECTION OF FLOW
	CROSS DRAINAGE STRUCTURE
	DROP STRUCTURE
	MAJOR INTERCONNECTION WITH IDENTIFIER
	DETENTION BASIN
	RETENTION BASIN
	FLOODWAY BOUNDARY
	MUNICIPAL BOUNDARY
	CONCRETE BOX CULVERT
	REINFORCED CONCRETE PIPE
	CORRUGATED METAL PIPE
	STORM DRAIN
	CITY OF PHOENIX (TEMPE)

REVISED NOVEMBER 1992
NOVEMBER 1991





SEE SHEET 7

SEE SHEET 9

ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN PHOENIX

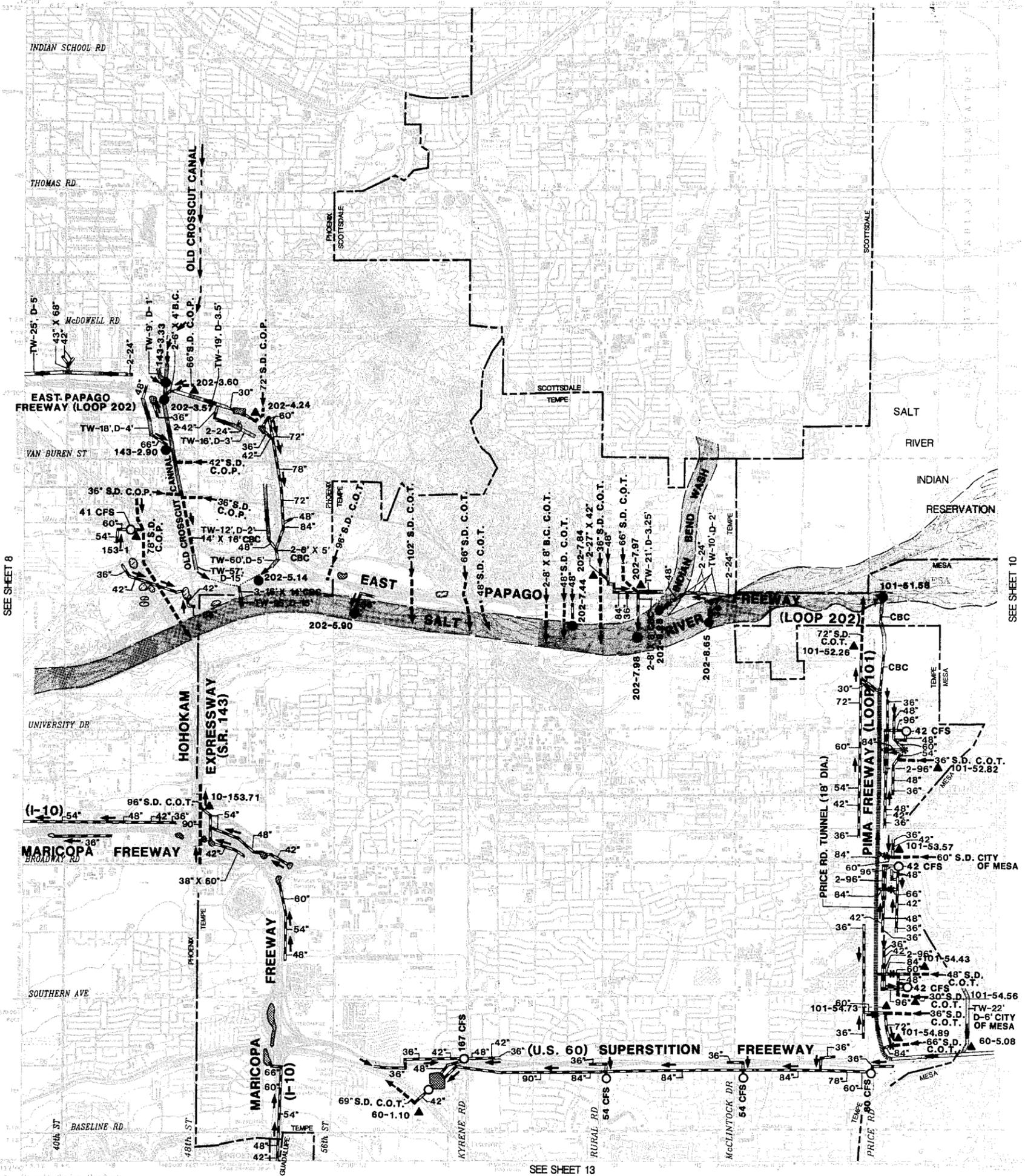


LEGEND	
	OPEN CHANNEL (TOP WIDTH 48', DEPTH 8')
	ADOT STORM DRAIN PIPE (48" DIA.)
	OTHER AGENCY STORM DRAIN PIPE
	DRAINAGE TUNNEL
	PUMP STATION (15 CFS CAPACITY)
	MAJOR OUTFALL WITH IDENTIFIER
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	DETENTION BASIN
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	MUNICIPAL BOUNDARY
	CONCRETE BOX CULVERT
	REINFORCED CONCRETE PIPE
	CORRUGATED METAL PIPE
	STORM DRAIN
	CITY OF PHOENIX (TEMPE)



REVISED NOVEMBER 1992
NOVEMBER 1991





SEE SHEET 8

SEE SHEET 10

SCALE 1:25000
SEE SHEET 13

Revised by the Army Map Service
Published for public use by the Geological Survey
Control by USGS, NCSN/GSA and USGS
Topography by photogrammetric methods from aerial
photographs taken 1951-1952
Photo scale reduction 100% (1 inch = 100 feet)
Planimetric projection
Vertical datum: Mean Sea Level
Horizontal datum: North American Datum 1983
Projection: UTM
Zone: 12N
Units: Meters
Scale: 1:25000
Map Date: 1983
This map is published with particular care and accuracy
and is intended for use as a reference map for the Phoenix
metropolitan area. It is not intended for use as a
navigation aid. No warranty is made for its use as a
navigation aid.
Purple and yellow colors are for other sheets.

ROAD CLASSIFICATION
Major Freeway (4 lanes, 60 mph)
Expressway (4 lanes, 55 mph)
Super Freeway (4 lanes, 65 mph)
Interstate (4 lanes, 65 mph)
State Route (2 lanes, 55 mph)
Local Road (2 lanes, 35 mph)
Municipal Boundary
Concrete Box Culvert
Reinforced Concrete Pipe
Corrugated Metal Pipe
Storm Drain
City of Phoenix (Tempe)

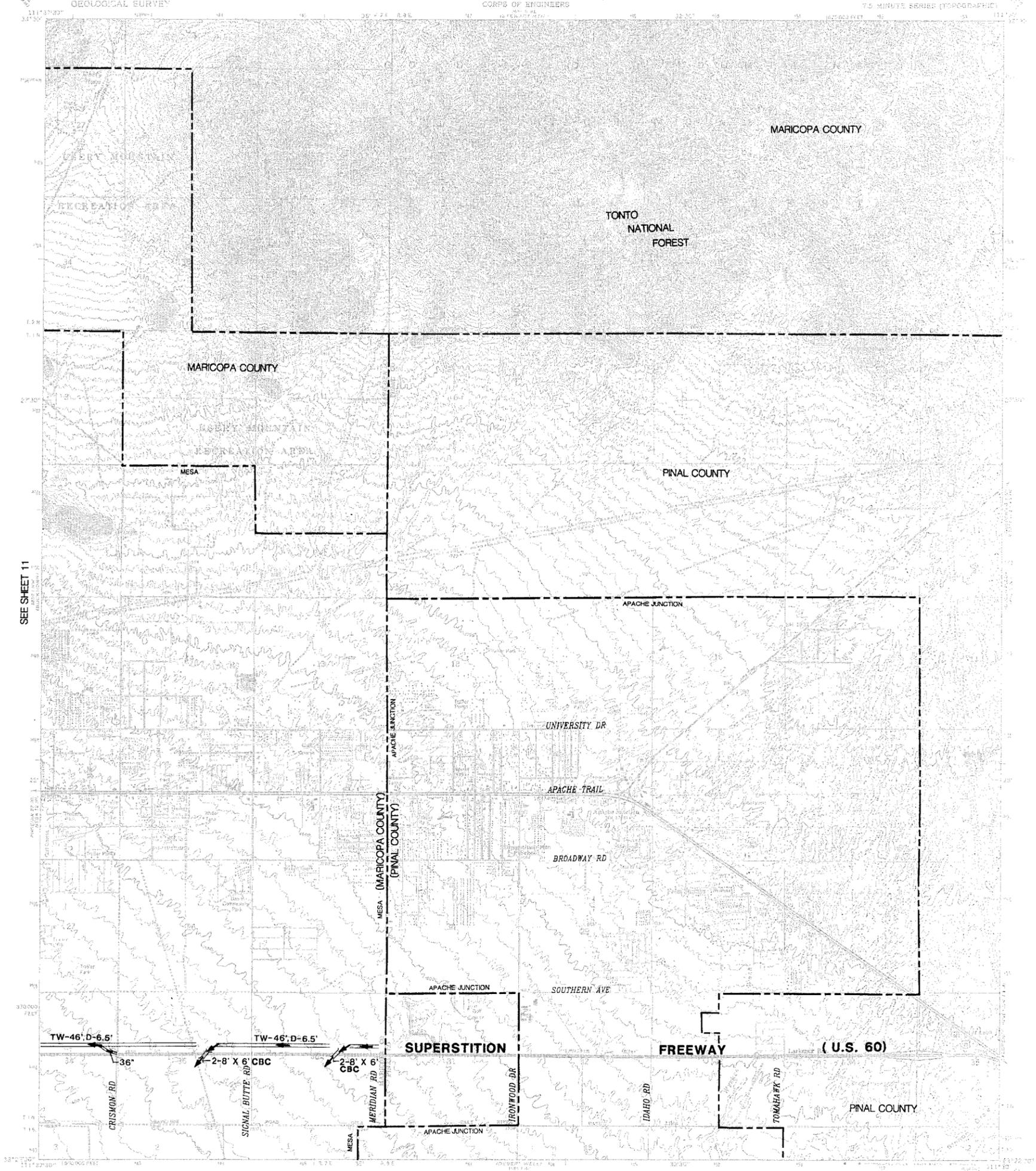


ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN PHOENIX

LEGEND	
	OPEN CHANNEL (TOP WIDTH 48', DEPTH 8')
	ADOT STORM DRAIN PIPE (48" DIA.)
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REVISED NOVEMBER 1992
NOVEMBER 1991



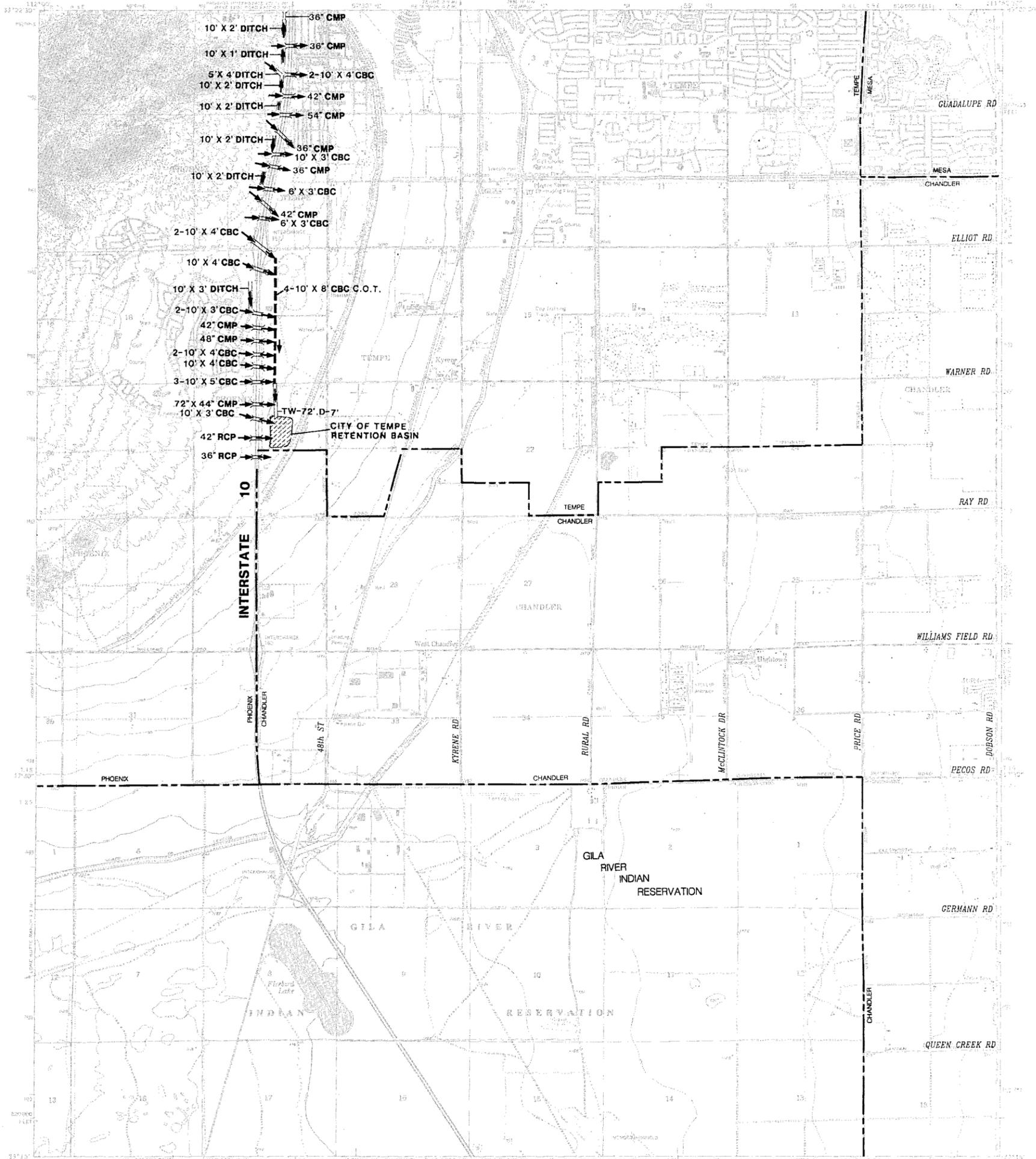


SEE SHEET 11

Map made by the Army Map Service
Published for use by the Geological Survey
Controlled by USGS, NDSONGAA, and USOC
Topography by photogrammetric methods from aerial
photographs taken 1955. Field checked 1975
Polyconic projection. 10,000-foot grid ticks based on
Arizona coordinate system. Control zone
1000-meter intervals. True north, magnetic north, and ticks
zone 82 shown in blue. 1925 North American Datum
To give an idea, projected North American Datum 1983
over the projected zone 82 ticks, scale and
69 meters must be shown by dashed center ticks.
Undrained elevations are shown in brown
There may be private landowners within the boundaries of
the National or State reservations shown on this map.

Revisions shown in purple are indicated by purple
Geological boundary from 1955. - Unchecked when 1975
were shown. This information not included
Map dated 1975

SCALE 1:24,000
CONTOUR INTERVAL 10 FEET
PUBLISHED BY U.S. GEOLOGICAL SURVEY DEPARTMENT OF THE INTERIOR
WASHINGTON, D.C. 20509
A POLAR PROJECTION TOPOGRAPHIC MAP. THIS MAP COMPARES WITH THE 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 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Map by the Army Map Service
Published for civil use by the Geological Survey
Control by USGS, NOS-NOAA and USCE
Topography by photogrammetric methods from aerial
photographs taken 1956. First edition 1958.
Projection: Universal Transverse Mercator (UTM),
Zone 12, shown in blue. 1927 North American Datum.
The ground on this projection differs from the actual 1985
ground by the projection error of 2 meters north and
40 meters east as shown by dashed border lines.
There may be errors and omissions within the boundaries of
the National or State reevaluation areas on this map.
Purple tick marks indicate extension of urban areas.

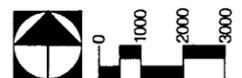
Scale: 1:24,000
Graphic scale: 0 to 1 mile
Vertical scale: 1 inch = 100 feet
Projection: UTM
Datum: 1927 North American Datum
Map dated 1982
For sale by U.S. Geological Survey, Denver, Colorado 80225. On request, with a 10% surcharge, a folder containing topographic maps and symbols is available for \$10.00.
Map of Arizona showing the location of the map area.

Scale: 1:24,000
Graphic scale: 0 to 1 mile
Vertical scale: 1 inch = 100 feet
Projection: UTM
Datum: 1927 North American Datum
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Map of Arizona showing the location of the map area.

ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN PHOENIX

LEGEND

- | | | | |
|--|--|--|--------------------|
| | OPEN CHANNEL (TOP WIDTH 48', DEPTH 8') | | DETENTION BASIN |
| | ADOT STORM DRAIN PIPE (48" DIA.) | | RETENTION BASIN |
| | OTHER AGENCY STORM DRAIN PIPE | | FLOODWAY BOUNDARY |
| | DRAINAGE TUNNEL | | MUNICIPAL BOUNDARY |
| | PUMP STATION (15 CFS CAPACITY) | | CBC |
| | MAJOR OUTFALL WITH IDENTIFIER | | RCP |
| | DIRECTION OF FLOW | | CMP |
| | CROSS DRAINAGE STRUCTURE | | S.D. |
| | DROP STRUCTURE | | C.O.P. (C.O.T.) |



NOVEMBER 1991

**Storm Sewer Outfalls
(Phoenix Area)**

MAJOR STORM SEWER OUTFALLS (Phoenix Metropolitan Area)

Outfall Identifier	Storm Sewer Data			Location Data					Construction Plan Data			
	Route No. - Mile Post	Type	Size/Depth	Material	Route No. - Route Name	Receiving Water	Location	State Plane Coordinates North East		City	Project I.D. No.	Project Station
10-130.3 (Papago Channel)	Trapezoidal Open Channel	TW=80' D=10'	Concrete	I-10 Papago Freeway	Agua Fria River	1/2 Mile W. of E1 Mirage Rd. & 100' N. of I-10.	894900	374000	Avondale	I-10-2(75)	6869+10	L
10-145.17 (West Tunnel)	Circular Tunnel	DIA=21'	Concrete	I-10 Papago Freeway	Salt River	Central Ave.-W. side @ N. bank of Salt River.	882000	452300	Phoenix	I-10-3(223)	7667+00	R
10-149.18 (East Tunnel)	Circular Tunnel	DIA=21'	Concrete	I-10 Papago Freeway	Salt River	20th St.-E. side @ N. bank of Salt River.	880500	462700	Phoenix	I-10-3(225)	7866+00	R
10-150.44	Circular Pipe	DIA=36"	Concrete	I-10 Maricopa Freeway	Salt River	N. Bank of Salt River @ W. side of I-10.	880300	468500	Phoenix	I-10-3(206)	7936+00	R
10-150.45	Dual Circular Pipes	DIA=72"	Concrete	I-10 Maricopa Freeway	Salt River	N. Bank of Salt River @ E. side of I-10.	880500	469100	Phoenix	I-10-3(206)	7936+00	L
10-151.06	Circular Pipe	DIA=66"	Concrete	I-10 Maricopa Freeway	Tempe - 48th St. Drain	N. Quadrant of I-10 & University Traffic Interchange.	878100	471100	Phoenix	I-10-3(206)	7945+00	L
17-198.48	Circular Pipe	DIA=102"	Concrete	I-17 Black Canyon Freeway	Salt River	2200' S. of Buckeye Rd. & 1700' E. of 27th Ave.	878950	440900	Phoenix	I-17-1(9)	69+60	L 6000
17-208.2	Circular Pipe	DIA=36"	Concrete	I-17 Black Canyon Freeway	ACDC	W. side of I-17 & Arizona Canal Diversion Channel Intersection	935400	440000	Phoenix	I-17-3-912	582+45	L 153
51-5.45	Circular Pipe	DIA=36"	Concrete	S.R. 51 Squaw Peak Parkway	ACDC	300' N. & W. of Intersection of 18th St. & Ocotillo.	922300	461900	Phoenix	C.O.P. BR-885442	270+55	L
51-7.04	Circular Pipe	DIA=48"	Concrete	S.R. 51 Squaw Peak Parkway	Dreamy Draw Wash	400' S. & E. of Intersection of Northern Ave. & Squaw Peak Highway.	930600	463500	Phoenix	M-600-Z-502	84+50	L

MAJOR STORM SEWER OUTFALLS (Phoenix Metropolitan Area)

Outfall Identifier	Storm Sewer Data			Location Data					Construction Plan Data				
	Route No.- Mile Post	Type	Size/ Depth	Material	Route No. - Route Name	Receiving Water	Location	State Plane Coordinates		City	Project I.D. No.	Project Station	Offset L/R
								North	East				
51-8.22	Concrete Box Culvert	10'x6'	Concrete	S.R. 51 Squaw Peak Parkway	Dreamy Draw Wash	E. side of Highway at 26th St.	935025	467270	Phoenix	M-600-2-506	146+85	R 170	
101-7.76	Trapezoidal Open Channel	TW=82' D=8'	Concrete	Loop 101 Agua Fria Freeway	New River	1/4 Mile S. of Northern Ave. & 1000' W. of 99th Ave.	927000	390800	Glendale	M-600-0-501	440+83	L 1650	
101-10.84	Trapezoidal Open Channel	TW=65' D=12'	Concrete & Soil Cement	Loop 101 Agua Fria Freeway	New River	1/2 Mile N. of Peoria Ave. along E. Bank of New River.	942500	394700	Peoria	M-600-0-502	603+68	L 920	
101-11.85	Trapezoidal Open Channel	TW=45' D=8'	Concrete	Loop 101 Agua Fria Freeway	New River	1/2 Mile S. of Thunderbird Rd. & 300' W.	947000	396500	Peoria	M-600-0-502	658+30	L 715	
101-13.44	Dual Circular Pipes	DIA=42"	Concrete	Loop 101 Agua Fria Freeway	Skunk Creek	200' S. of S.B. Bridge over Skunk Creek & 250' + W.	953100	401600	Peoria	M-600-0-502	742+10	L 260	
101-13.68	Trapezoidal Open Channel	TW=22' D=4'	Concrete	Loop 101 Agua Fria Freeway	Skunk Creek	30' N. of N.B. Bridge over Skunk Creek & 80' E.	953900	402000	Peoria	M-600-0-502	750+84	R 135	
101-14.38	Open Channel	TW=28' D=10'	Concrete	Loop 101 Agua Fria Freeway	New River	1200' S. of Bell Rd. Traffic Interchange & 300' W.	958700	401800	Peoria	M-600-0-502	800+00	L 300	
101-15.18	Circular Pipe	DIA=48"	Concrete	Loop 101 Agua Fria Freeway	New River	4/10 Mile N. of Bell Rd. & 500' W.	962000	402600	Glendale	M-600-0-502	834+00	L 560	
101-16.31	Circular Pipe	DIA=48"	Concrete	Loop 101 Agua Fria Freeway	New River	4/10 Mile S. of Beardsley Rd. & 300' W.	967900	403900	Glendale	M-600-0-503	895+00	L 340	
101-16.62	Circular Pipe	DIA=48"	Concrete	Loop 101 Agua Fria Freeway	New River	2/10 Mile S. of Beardsley Rd. & 500' W.	969600	404700	Glendale	M-600-0-503	908+25	L 560	
101-16.74	Trapezoidal Open Channel	TW=56' D=11'	Concrete	Loop 101 Agua Fria Freeway	New River	150' S. of Beardsley Rd. & 2800' W. of 75th Ave.	970200	405000	Glendale	M-600-0-503	917+50	L 550	

MAJOR STORM SEWER OUTFALLS (Phoenix Metropolitan Area)

Outfall Identifier	Storm Sewer Data			Location Data					Construction Plan Data				
	Route No. - Mile Post	Type	Size/Depth	Material	Route No. - Route Name	Receiving Water	Location	State Plane Coordinates		City	Project I.D. No.	Project Station	Offset L/R
								North	East				
101-20.19	Circular Pipe	DIA=36"	Concrete	Loop 101 Agua Fria Freeway	Skunk Creek	1/2 Mile S. of Beard- sley Rd. at 51st Ave.	968500	423400	Phoenix	RBA-600-0-505	1098+50		
101-21.236	Circular Pipe	DIA=42"	Concrete	Loop 101 Agua Fria Freeway	Skunk Creek	245' E. of 43rd Ave. & N. side of Beard- sley Rd.	971200	429900	Phoenix	RBA-600-0-505	1154+50		
101-21.239	Trapezoidal Open Channel	TH=20' D=2'	Earthen	Loop 101 Agua Fria Freeway (Frontage Road)	Skunk Creek	260' E. of 43rd Ave. & N. side of N. Frontage Rd.	971200	429900	Phoenix	RBA-600-0-505	1154+65		
101-21.83	Circular Pipe	DIA=96"	Concrete	Loop 101 Agua Fria Freeway (Frontage Road)	Scatter Wash	2000' W. of 35th Ave. & S. side of S. Frontage Rd.	970900	431900	Phoenix	RBA-600-0-505	1186+00		
101-21.869	Circular Pipe	DIA=36"	Concrete	Loop 101 Agua Fria Freeway (Frontage Road)	Scatter Wash	1600' W. of 35th Ave. & N. side of N. Frontage Rd.	971300	432200	Phoenix	RBA-600-0-505	1187+00		
101-21.873	Trapezoidal Open Channel	TH=32' D=8'	Concrete	Loop 101 Agua Fria Freeway (Frontage Road)	Scatter Wash	1500' W. of 35th Ave. & N. side of N. Frontage Rd.	971300	432200	Phoenix	RBA-600-0-505	1188+00		
101-51.58 (Price Rd. Tunnel)	Circular Tunnel	DIA=18'	Concrete	Loop 101 Pima Freeway	Salt River	1 Mile N. of Univer- sity Ave. & 200' E.	885400	508500	Tempe	M-600-1-507	2871+00	L 200	
143-2.90	Circular Pipe	DIA=66"	Concrete	S.R. 143 Hohokam Expressway	Old Cross Cut Canal	600' N. of Van Buren St. & 350' E. of S.R. 143 at Relocated Old Cross Cut Canal.	892400	480100	Phoenix	143-MA-H-0843-01D	166+71	R 350	
143-3.33	Trapezoidal Open Channel	TH=9' D=1'	Concrete	S.R. 143 Hohokam Expressway	Old Cross Cut Canal	350' N. of Loop 202 at W. bank of Relocated Old Cross Cut Canal.	894400	480000	Phoenix	143-MA-H-0843-01D	189-45	R 270	

MAJOR STORM SEWER OUTFALLS (Phoenix Metropolitan Area)

Outfall Identifier	Storm Sewer Data			Location Data					Construction Plan Data				
	Route No.- Mile Post	Type	Size/ Depth	Material	Route No. - Route Name	Receiving Water	Location	State Plane Coordinates		City	Project I.D. No.	Project Station	Offset L/R
								North	East				
202-3.57	Dual Box Culverts	TH=6' D=4'	Concrete	Loop 202 East Papago Freeway	Old Cross Cut Canal	N.E. Quadrant of S.R. 143 & Loop 202 Traffic Interchange @ bank of Relocated Old Cross Cut Canal.	894100	480100	Phoenix	202L-MA-H- 0858-01D	34+60	L 163	
202-5.14	Trapezoidal Open Channel	TH=60' D=5'	Concrete	Loop 202 East Papago Freeway	Salt River	1800' S. of Washing- ton St. & 2500' W. of 56th St.	887900	484200	Phoenix	202L-MA-H- 0858-01D	112+00	R 290	
202-5.90	Circular Pipe	DIA=36"	Concrete	Loop 202 East Papago Freeway	Salt River	1000' E. of Priest Dr. and 2200' N. of 1st St.	885900	487700	Tempe	202L-MA-H- 0858-01D	148+80	R 280	
202-7.44	Circular Pipe	DIA=48"	Concrete	Loop 202 East Papago Freeway	Salt River	1100' W. of Rural Rd. @ N. Bank of Salt River.	885100	496200	Tempe	202L-MA-H- 0858-01D	230+10	R 850	
202-7.98	Dual Box Culverts	TH=8' D=8'	Concrete	Loop 202 East Papago Freeway	Salt River	1100' E. of Rural Rd. @ N. Bank of Salt River.	885300	498300	Tempe	202L-MA-H- 0858-01D	258+60	R 865	
202-8.28	Circular Pipe	DIA=48"	Concrete	Loop 202 East Papago Freeway	Indian Bend Wash	Indian Bend Wash Grade Control Structure	886200	500250	Tempe	H-0861-04C	247+90	R 20	
202-8.65	Circular Pipe	DIA=36"	Concrete	Loop 202 East Papago Freeway	Salt River	N. side of Salt River, 750' E. of McClintock	886100	501800	Tempe	H-0861-04C	289+20	R 150	
60-15.42	Trapezoidal Open Channel	TH=12' D=8'	Concrete	U.S. 60 Superstition Freeway	East Maricopa Floodway	1/2 Mile E. of Highley Rd. & S.R. 360 Traffic Interchange on N. side of S.R. 360.	868300	565800	Mesa	BP-028-1-509	815+80	L 65	
60-17.63	Trapezoidal Open Channel		Concrete	U.S. 60 Superstition Freeway	Sossaman Channel	1/4 Mile E. of Soss- aman Rd. & S.R. 360 Traffic Interchange.	868100	569600	Mesa	F-028-1-514	939+80	L 130	

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA		
	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I. D. NO.	PROJECT STATION	OFFSET (CL) LEFT RIGHT
					NORTH	EAST			
ROUTE NO - MILE POST	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE							
10-131.66	City of Avondale, Storm Drain, 48" Dia.	ADOT, Trapezoidal Open Channel, TW=135' D=10'	I-10 Papago Freeway	115th Avenue	895200	381200	I-10-2(70)	6946+70	L 250
10-133.66	City of Avondale, Storm Drain, 42" Dia.	ADOT, Trapezoidal Open Channel, TW=89', D=16'	I-10 Papago Freeway	99th Avenue	896050	391600	I-10-2(70)	7050+75	L 250
10-134.65	City of Phoenix, Storm Drain, 90" Dia. (Stub)	ADOT, Trapezoidal Open Channel, TW=89', D=16'	I-10 Papago Freeway	91st Avenue	896325	396870	I-10-2(40)	7104+00	L 325
10-135.64	City of Phoenix, Storm Drain, 90" Dia. (Stub)	ADOT, Trapezoidal Open Channel, TW=78', D=16'	I-10 Papago Freeway	83rd Avenue	896200	402125	I-10-2(40)	7155+54	L 325
10-136.66	City of Phoenix, Storm Drain, 90" Dia.	ADOT, Trapezoidal Open Channel, TW=91', D=19'	I-10 Papago Freeway	75th Avenue	896300	407450	I-10-2(81)	7210+09	L 325
10-137.63	City of Phoenix, Storm Drain, 90" Dia.	ADOT, Trapezoidal Open Channel, TW=88', D=19'	I-10 Papago Freeway	67th Avenue	896350	412725	I-10-2(82)	7261+77	L 325
10-138.64	City of Phoenix, Storm Drain, 90" Dia.	ADOT, Trapezoidal Open Channel, TW=88', D=19'	I-10 Papago Freeway	59th Avenue	896400	417900	I-10-2(82)	7313+62	L 325
10-139.64	City of Phoenix, Storm Drain, 84" Dia.	ADOT, Trapezoidal Open Channel, TW=88', D=19'	I-10 Papago Freeway	51st Avenue	896400	423200	I-10-2(108)	7366+44	L 325

**Storm Sewer
Interconnections
(Phoenix Area)**

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA			
	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL)	
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			LEFT	RIGHT
10-140.63	City of Phoenix, Open Trapezoidal Channel, TH=60' D=9'	ADOT, Trapezoidal Open Channel, TH=70', D=15'	I-10 Papago Freeway	West of 43rd Avenue	896025	428475	I-10-2(109)	7418+50	L	316
10-140.67	City of Phoenix, Storm Drain, 54" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	East of 43rd Avenue	895975	428745	I-10-2(109)	7421+00	L	270
10-141.15	City of Phoenix, Storm Drain, 78" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	West of 39th Avenue	895675	431100	I-10-2(109)	7446+00	L	200
10-141.66	City of Phoenix, Storm Drain, 78" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	West of 35th Avenue	896225	433750	City of Phoenix	7471+30	L	200
10-141.68	City of Phoenix, Storm Drain, 54" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	35th Avenue	896225	433800	I-10-2(110)	7473+00	L	200
10-141.70	City of Phoenix, Storm Drain, 78" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	East of 35th Avenue	896225	433850	City of Phoenix	7473+60	L	200
10-141.71	City of Phoenix, Storm Drain, 48" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	East of 35th Avenue	896225	433875	City of Phoenix	7474+20	L	200
10-142.02	City of Phoenix, Storm Drain, 42" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	West of 32nd Avenue	895800	435950	I-10-2(110)	7493+80	L	150

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA			
	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL.)	
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			LEFT	RIGHT
10-142.14	City of Phoenix, Storm Drain, 48" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	West of 31st Avenue	895750	436375	I-10-2(110)	7498+70	L	150
10-142.15	City of Phoenix, Storm Drain, 84" Dia.	ADOT, Concrete Box Culvert, 15' x 11'	I-10 Papago Freeway	31st Avenue	895750	436430	I-10-2(110)	7499+25	L	150
10-143.04	City of Phoenix, Storm Drain, 42" Dia.	ADOT Storm Drain into Detention Basin, 48" Dia.	I-10 Papago Freeway	West of I-17	895950	441200	I-10-2(110)	7546+28	L	350
10-144.52	City of Phoenix, Storm Drain, 78" Dia.	ADOT, Concrete Box Culvert to 7th Avenue Drop Structure, 10' x 12'	I-10 Papago Freeway	9th Avenue	895500	448925	ACI-10-3(82)	7625+00	L	200
10-144.63	City of Phoenix, Storm Drain, 96" Dia.	ADOT, Concrete Box Culvert to 7th Avenue Drop Structure, 10' x 12'	I-10 Papago Freeway	West of 7th Avenue	895600	449575	ACI-10-3(82)	7630+75	L	300
10-144.88	City of Phoenix, Storm Drain, 84" Dia.	ADOT, 96" Pipe from 3rd Avenue Pump Station to 3rd Avenue Dropshaft	I-10 Papago Freeway	East of 3rd Avenue	895700	450700	I-10-3(223)	7644+00	L	200
10-144.89	City of Phoenix, Storm Drain, 102" Dia.	3rd Avenue Drop Shaft at Culver Street	I-10 Papago Freeway	West of 3rd Avenue	895725	450750	I-10-3(223)	7644+50	L	200

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		ROUTE NO. - ROUTE NAME	LOCATION DATA			CONSTRUCTION PLAN DATA		
	DISCHARGER	RECEIVER		LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL.) LEFT RIGHT
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			
10-145.15	City of Phoenix, Storm Drain, 96" Dia.	ADOT, Central Avenue Dropshaft	I-10 Papago Freeway	Central Avenue	895775	452300	I-10-3(307)	7658+00	L 300
10-145.16	City of Phoenix, Storm Drain, 48" Dia.	ADOT, Maricopa Freeway Drop Shaft to 21' Dia. Tunnel	I-10 Papago Freeway	I-17 & Central Avenue	883650	452300	I-10-3(223)	7659+00	R 11800
10-145.19	City of Phoenix, Storm Drain, 72" Dia.	ADOT, Tonto Street Drop Shaft to 21' Dia. Tunnel	I-10 Papago Freeway	Tonto Street	896900	452500	I-10-3(223)	7661+00	R 8650
10-145.30	City of Phoenix, Storm Drain, 72" Dia.	ADOT, Fillmore Street Drop Shaft to 21' Dia. Tunnel	I-10 Papago Freeway	Fillmore Street	892850	453100	I-10-3(223)	7667+00	R 2750
10-145.31	City of Phoenix, Storm Drain, 78" Dia.	ADOT, Grant Street Drop Shaft to 21' Dia. Tunnel	I-10 Papago Freeway	Grant Street	888000	453100	I-10-3(223)	7667+00	R 7600
10-145.43	City of Phoenix, Storm Drain, 84" Dia.	ADOT, Concrete Box Culvert to 3rd Street Dropshaft, 8' x 7'	I-10 Papago Freeway	East of 3rd Street	895800	453725	I-10-3 (213) + AZ-I-10-3 (239)	7673+63	L 200
10-145.44	City of Phoenix, Storm Drain, 36" Dia.	ADOT, Concrete Box Culvert to 3rd Street Dropshaft, 8' x 7'	I-10 Papago Freeway	West of 3rd Street	895805	453725	I-10-3(213) + AZ-I-10-3 (239)	7673+63	L 205

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I. D. NO.	PROJECT STATION	OFFSET (CL)	
	DISCHARGER	RECEIVER			NORTH	EAST			LEFT	RIGHT
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE								
10-145.74	City of Phoenix, Storm Drain, 36" Dia.	ADOT, Outfall Pipe from 3rd Street Pump Station, 72" Dia.	I-10 Papago Freeway	East of 3rd Street	895800	453950	AZ-I-10-3 (239)	7675+00	L 220	
10-145.92	City of Phoenix, Storm Drain, 84" Dia.	ADOT, 7th Street Drop Shaft	I-10 Papago Freeway	West of 7th Street	895800	454850	ACI-10-3(208)	7684+70	L 200	
10-146.16	City of Phoenix, Storm Drain, 60" Dia.	ADOT, Concrete Box Culvert to 10th Street Drop Structure, 10' x 10'	I-10 Papago Freeway	10th Street	895775	456225	AZ-I-10-3 (239)	7698+50	L 200	
10-146.28	City of Phoenix, Storm Drain, 36" Dia.	ADOT, Concrete Box Culvert to 10th Street Drop Structure, 10' x 10'	I-10 Papago Freeway	11th Street	895750	456850	AZ-I-10-3 (239)	7704+75	L 175	
10-146.41	City of Phoenix, Concrete Box Culvert, 10' x 6'	ADOT, Concrete Box Culvert, 10' x 10'	I-10 Papago Freeway	12th Street	895725	457575	ACI-10-3(214)	7711+70	L 200	
10-146.70	City of Phoenix, Storm Drain, 36" Dia.	ADOT, Storm Drain, 96" Dia.	I-10 Papago Freeway	14th Street	895775	458900	I-10-3(215)	7725+00	L 200	
10-146.94	City of Phoenix, Storm Drain, 72" Dia.	ADOT, Storm Drain, 96" Dia.	I-10 Papago Freeway	West of 16th Street	895875	460200	I-10-3(215)	7738+00	L 200	

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area									
IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA		
ROUTE NO - MILE POST	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL.) LEFT RIGHT
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			
10-146.98	City of Phoenix, Storm Drain, 72" Dia.	ADOT, Storm Drain, 90" Dia.	I-10 Papago Freeway	East of 16th Street	895875	460360	I-10-3(215)	7739+60	L 200
10-147.36	City of Phoenix, Storm Drain, 72" Dia.	ADOT, Storm Drain, 72" Dia.	I-10 Papago Freeway	SR-51, LOOP 202, & I-10 Interchange	895800	463150	AZ-I-10-3 (239)	7748+65	L 435
10-149.05	City of Phoenix, Storm Drain, Triple 36" Dia.	ADOT, Trapezoidal Open Channel, TH=19', D=5.5'	I-10 Papago Freeway	North of Sky Harbor Boulevard	887200	463700	City of Phoenix Project	7832+80	L 345
10-149.56	City of Phoenix, Storm Drain, 60" Dia.	ADOT, Concrete Pipe to Mohave Street Drop Shaft, 84" Dia.	I-10 Papago Freeway	North of Mohave Street	884550	463450	AZ-I-10-3 (239)	7859+80	L 200
10-149.83	City of Phoenix, Storm Drain, 42" Dia.	ADOT, Storm Drain, 48" Dia.	I-10 Papago Freeway	I-17	883325	463750	I-10-3(204)	7874+00	L 150
10-153.71	ADOT, Storm Drain, 54" Dia.	City of Tempe, Storm Drain, 96" Dia.	I-10 Maricopa Freeway	48th Street	877900	481600	I-10-3(309)	8075+00	L 1200
17-1.03	ADOT, Storm Drain, 60" Dia.	City of Phoenix, Storm Drain, 78" Dia.	I-17 Maricopa Freeway	16th Street	882900	460150	I-17-3(64)	187+49	R 125
17-5.54	City of Phoenix, Storm Drain, 36" Dia.	ADOT, Storm Drain, 39" Dia.	I-17 Black Canyon Freeway	Jackson Street	889500	441500	---	---	---

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		ROUTE NO. - ROUTE NAME	LOCATION	LOCATION DATA		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL) LEFT RIGHT
	DISCHARGER	RECEIVER			STATE PLANE COOR.				
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			
17-15.05	ADOT, Trapezoidal Open Channel, TW=12', D=3.5'	City of Phoenix, Storm Drain, 36" Dia.	I-17 Black Canyon Freeway	Peoria Avenue	939300	438950	I-17-1(39)	430+46	L 240
17-17.06	ADOT, Trapezoidal Open Channel, TW=10.5' D=3.5'	City of Phoenix, Storm Drain, 36" Dia.	I-17 Black Canyon Freeway	Thunderbird Road	949950	439025	I-17-1(40)	535+65	L 270
17-19.04	ADOT, Trapezoidal Open Channel, TW=14', D=4.5'	City of Phoenix, Trapezoidal Open Channel	I-17 Black Canyon Freeway	Bell Road	960300	438700	I-17-140)	642+60	L 915
51-3.38	City of Phoenix, Storm Drain, 42" Dia.	ADOT, Storm Drain, 60" Dia.	SR-51 Squaw Peak Freeway	Highland Avenue	911500	461500	City of Phoenix No. P-856336	157+70	R 195
51-3.62	City of Phoenix, Storm Drain, 39" Dia.	ADOT, Storm Drain, 54" Dia.	SR-51 Squaw Peak Freeway	Camelback Road	912850	461450	City of Phoenix No. ST-842211	171+95	R 102
51-3.95	City of Phoenix, Detention Basin Siphon, 72" Dia.	ADOT, Storm Drain, 42" Dia.	SR-51 Squaw Peak Freeway	Colter Street	914150	461450	City of Phoenix No. P-856336	186+60	R 195
51-4.14	City of Phoenix, Storm Drain, 48" Dia.	ADOT, Storm Drain, 54" Dia.	SR-51 Squaw Peak Freeway	Missouri Avenue	915500	461600	City of Phoenix No. ST-842211	198+31	R 127
51-7.18	ADOT, Trapezoidal Open Channel, TW=50', D=7'	City of Phoenix, Detention Basin No. 5	SR-51 Squaw Peak Freeway	Northern Avenue	935510	463050	H-2058-01-C	91+80	L 285

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area										
IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA			
	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL)	
		AGENCY, TYPE, SIZE			AGENCY, TYPE, SIZE	NORTH			EAST	LEFT
101-8.16	City of Peoria, Storm Drain, 60" Dia. (Future)	ADOT, Concrete Box Culvert, 10' x 6'	Loop 101 Agua Fria Freeway	Northern Avenue	928400	394300	AZM-600-0-501	463+33	R 485	
101-9.29	City of Peoria, Storm Drain, 10' x 16'	ADOT, Concrete Box Culvert, 10' x 8'	Loop 101 Agua Fria Freeway	Olive Avenue	933925	396900	AZM-600-0-501	522+86	R 318	
101-10.29	City of Peoria, Storm Drain, 72" Dia.	ADOT, Concrete Box Culvert, 10' x 8'	Loop 101 Agua Fria Freeway	Peoria Avenue	940030	396138	AZM-600-0-501	575+42	R 269	
101-11.32	City of Peoria, Trapezoidal Open Channel	ADOT, Trapezoidal Open Channel, TW=65', D=12'	Loop 101 Agua Fria Freeway	Cactus Road	945320	395985	RBM-600-0-502	630+29	R 242	
101-12.00	City of Peoria, Storm Drain, 60" Dia.	ADOT, Trapezoidal Open Channel, TW=45', D=8'	Loop 101 Agua Fria Freeway	Sweetwater Avenue Extended	947135	398035	RBM-600-0-502	666+18	R 150	
101-12.73	City of Peoria, Storm Drain, 72" Dia.	ADOT, Trapezoidal Open Channel, TW=45', D=8'	Loop 101 Agua Fria Freeway	Thunderbird Road	949640	401109	RBM-600-0-502	704+52	R 396	
101-15.80	City of Glendale, Storm Drain, 36" Dia.	ADOT, 6' x 4' Concrete Box Culvert	Loop 101 Agua Fria Freeway	Union Hills Drive	965242	404535	RBM-600-0-503	866+88	R 251	
101-19.68	ADOT, Storm Drain, 42" Dia.	City of Glendale Trapezoidal Open Channel TW=70', D=5'	Loop 101 Agua Fria Freeway	55th Avenue	971383	420088	RBA-600-0-505	1071+43	R 175	

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA			
	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL.)	
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			LEFT	RIGHT
101-52.26	ADOT, Storm Drain, 72" Dia.	City of Tempe, 72" Dia. Storm Drain	Loop 101 Pima Freeway	1st Street	882772	507896	RAM-600-1-507	2910+00	R	205
101-52.82	City of Tempe, Storm Drain, 36" Dia.	ADOT, Storm Drain, 54" Dia.	Loop 101 Pima Freeway	Victory Drive	887880	508216	RBA-600-1-506	2939+52	L	268
101-53.57	City of Mesa, Storm Drain, 60" Dia.	ADOT, Storm Drain at Drop Shaft #2, 60" Dia.	Loop 101 Pima Freeway	Broadway Road	875940	505288	RBA-600-1-506	2978+80	L	169
101-54.43	City of Tempe, Storm Drain, 48" Dia.	ADOT, Storm Drain at Drop Shaft #4, 60" Dia.	Loop 101 Pima Freeway	Geneva Drive	871425	508385	RBA-600-1-506	3024+09	L	256
101-54.56	City of Tempe, Storm Drain, 30" Dia.	ADOT, Storm Drain, 48" Dia.	Loop 101 Pima Freeway	Southern Avenue	870787	508326	RBA-600-1-506	3030+68	L	200
101-54.73	City of Tempe, Storm Drain, 36" Dia.	ADOT, Storm Drain, 72" Dia.	Loop 101 Pima Freeway	Pebble Beach Drive	869835	508280	RBA-600-1-506	3040+11	L	200
101-54.89	City of Tempe, Storm Drain, 66" Dia.	ADOT, Storm Drain at Drop Shaft #5, 72" Dia.	Loop 101 Pima Freeway	Manhattan Drive	869187	508583	RBA-600-1-506	3048+47	L	3
153-1	ADOT, Pump Outlet, 48" Dia.	City of Phoenix, Storm Drain, 78" Dia.	Loop 153 Sky Harbor Freeway	S.R. 153	889000	478850	153-MA-H-0880-01D	148+85	R	115
202-0.75	City of Phoenix, Storm Drain, 60" Dia.	ADOT, Concrete Box Culvert, 10' x 10'	Loop 202 East Papago Freeway	24th Street	895700	465600	202L-MA-H-0858-01D	1000+00	L	170

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA		
	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL) LEFT RIGHT
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			
202-1.13	City of Phoenix, Storm Drain, 48" Dia.	ADOT, Concrete Box Culvert, 9' x 9'	Loop 202 East Papago Freeway	27th Street	895700	467450		1019+85	L 225
202-2.28	City of Phoenix, Storm Drain, 72" Dia.	ADOT, Concrete Box Culvert, I-10 Structure from North Basin, 8' x 6'	Loop 202 East Papago Freeway	36th Street	894800	473550		1080+95	L 330
202-3.60	City of Phoenix, Storm Drain, 66" Dia.	ADOT, Trapezoidal Open Channel, TW=19', D=3.5'	Loop 202 East Papago Freeway	48th Street	894100	480550		27+65	L 165
202-4.24	City of Phoenix, Storm Drain, 72" Dia.	ADOT, 52nd Street Detention Basin	Loop 202 East Papago Freeway	52nd Street	893050	483600		61+45	L 430
202-7.84	City of Tempe, Storm Drain Overflow Wier, 36" Dia.	ADOT, Twin 27" x 42" Pipes	Loop 202 East Papago Freeway	Gilbert Drive	886800	497250		251+20	L 768
202-7.97	City of Tempe, Storm Drain 66" Dia.	ADOT, Concrete Box Culverts, Twin 8' x 6'	Loop 202 East Papago Freeway	Scottsdale Road	886250	498300	202L-MA-H-0858-010	258+19	L 175
60-1.10	ADOT, Storm Drain, 42" Dia.	City of Tempe, Storm Drain, 69" Dia.	U.S. 60 Superstition Freeway	East of Hardy Drive	86700	490300	F-028-1(1)		
60-5.08	City of Mesa, Trapezoidal Open Channel, TW=22', D=6'	ADOT Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	East of Tempe Canal	868100	511300	FF-028-1(7)	268+35	L 170

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA		
	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL) LEFT RIGHT
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			
60-6.39	City of Mesa, Storm Drain 54" Dia.	ADOT, Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	Alma School Road	868260	518350	F-028-1(6)	337+50	L 360
60-6.85	City of Mesa, Retention Basin, Side Wier and Low Flow Pipe	ADOT, Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	Extension Road	868100	520600	F-028-1(6)	361+70	L 210
60-7.95	City of Mesa, Retention Basin, Side Wier and Low Flow Pipe	ADOT, Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	AT & SF Railroad	868250	526670	F-028-1(3)	419+96	L 300
60-7.96	City of Mesa, Concrete Box Culvert, 10' x 10'	ADOT, Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	AT & SF Railroad	867950	526660	F-028-1(3)	419+88	L
60-8.92	City of Mesa, Pump Outfall, 36" Dia.	ADOT, Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	Horne	868200	531650	F-028-1(3)	471+00	L 210
60-8.96	City of Mesa, Retention Basin, Side Wier	ADOT, Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	Horne	868200	531880	F-028-1(3)	473+30	L 210
60-10.08	City of Mesa, Retention Basin, Side Wier and Low Flow Pipe	ADOT, Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	Harris Drive	868370	537430	F-028-1-505	532+20	L 370

MAJOR STORM SEWER INTERCONNECTIONS - Phoenix Metropolitan Area

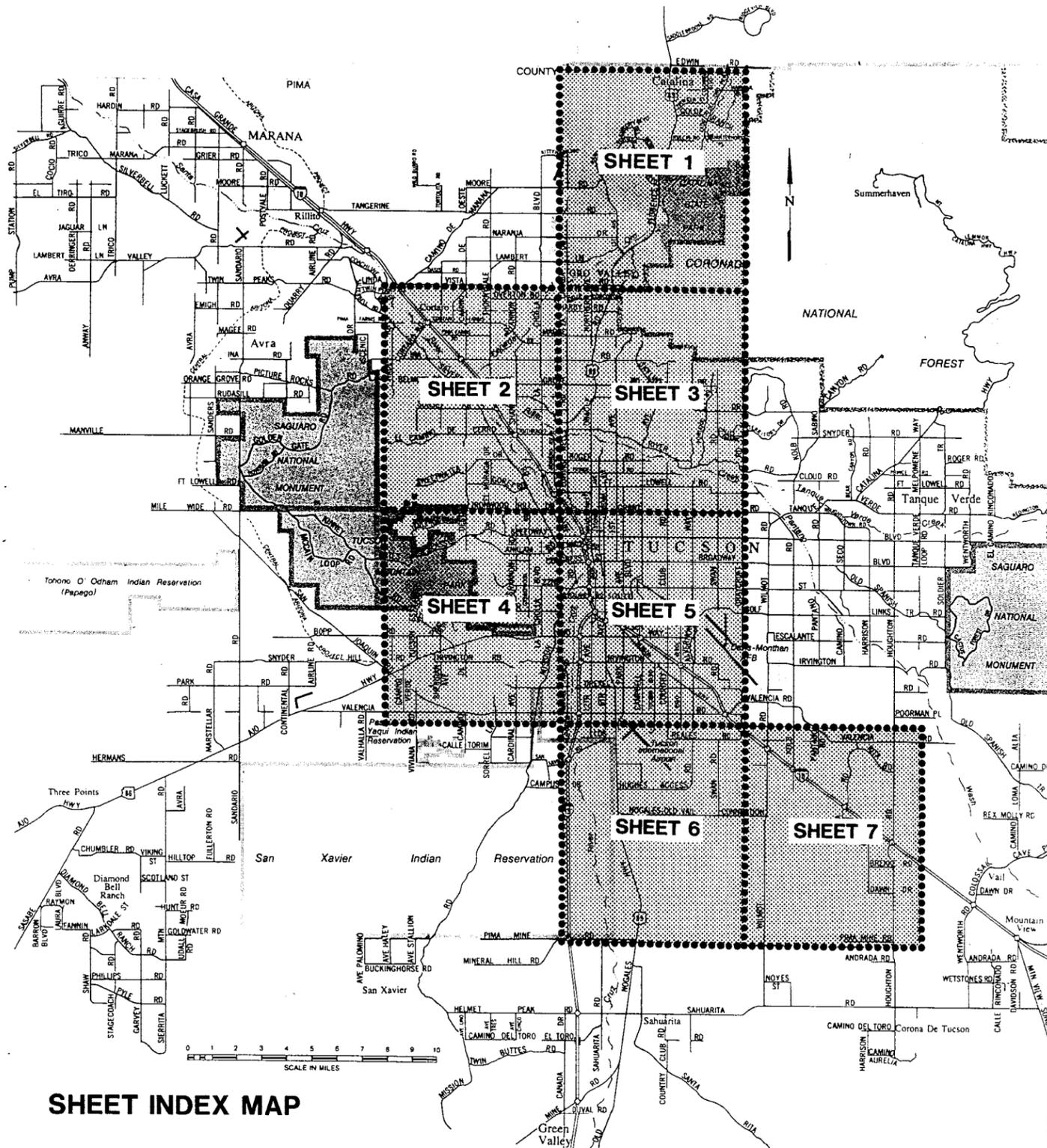
IDENTIFIER	STORM SEWER DATA		LOCATION DATA				CONSTRUCTION PLAN DATA		
	DISCHARGER	RECEIVER	ROUTE NO. - ROUTE NAME	LOCATION	STATE PLANE COOR.		PROJECT I.D. NO.	PROJECT STATION	OFFSET (CL.) LEFT RIGHT
	AGENCY, TYPE, SIZE	AGENCY, TYPE, SIZE			NORTH	EAST			
60-10.83	City of Mesa, Retention Basin, Side Wier and Low Flow Pipe	ADOT, Trapezoidal Open Channel, TW=48', D=6'	U.S. 60 Superstition Freeway	24th Street	868450	541830	F-028-1-506	571+91	L 400
60-11.82	City of Mesa, Retention Basin, Side Wier and Low Flow Pipe	ADOT, Trapezoidal Open Channel, TW=20', D=4'	U.S. 60 Superstition Freeway	32nd Street	868500	547050	F-028-1-506	623+87	L 400
60-16.36	City of Mesa, Storm Drain, 48" Dia.	ADOT, Trapezoidal Open Channel, TW=44', D=8'	U.S. 60 Superstition Freeway	Power Road	868475	570750	BP-028-1-509	864+00	L 345
60-16.89	City of Mesa, Trapezoidal Open Channel, TW=28', D=4'	ADOT, Trapezoidal Open Channel, TW=40', D=6'	U.S. 60 Superstition Freeway	72nd Street	868700	573650	F-028-1-513	891+65	L 380
60-17.12	City of Mesa, Trapezoidal Open Channel, TW=55', D=4'	ADOT, Trapezoidal Open Channel, TW=40', D=6'	U.S. 60 Superstition Freeway	Sossaman Road	868460	574880	F-028-1-513	903+82	L 430
60-17.33	City of Mesa, Storm Drain, 48" Dia.	ADOT, Trapezoidal Open Channel, TW=40', D=6'	U.S. 60 Superstition Freeway	Sossaman Road	868650	576000	F-028-1-514	915+00	L 230
60-18.37	City of Mesa, Trapezoidal Open Channel, TW=18', D=5'	ADOT, Trapezoidal Open Channel, TW=48', D=9'	U.S. 60 Superstition Freeway	Hawes Road	868500	581450	F-028-1-513	970+11	L 370

MAJOR STORM SEWER OUTFALLS (Tucson Metropolitan Area)

Outfall Identifier	Storm Sewer Data			Location Data					Construction Plan Data				
	Route No.- Mile Post	Type	Size/ Depth	Material	Route No. - Route Name	Receiving Water	Location	State Plane Coordinates		City	Project I.D. No.	Project Station	Offset L/R
								North	East				
10-260.7	Circular Pipe	DIA=72"	Concrete	I-10	Julian Wash	N. Side of Julian Wash at 10th Ave. S. of I-10.	433500	791750	Tucson	IR-10-5(54)	10th Ave 1+00		
10-261.5	Circular Pipe	DIA=78"	Concrete	I-10	Julian Wash	1400' W. of South Park Ave. & 1300' N. of Ajo Way - E. of SPRR.	430800	795750	Tucson	IR-10-5(54)	Line C 0+00		
10-264.6	Oval Pipe	56"x42"	Corrugated Metal	I-10	Julian Wash	1200' S. of I-10 & Palo Verde Rd. Traffic Interchange - W. side of Palo Verde & N. bank of Julian Wash.	422500	809500	Tucson	I-10-5(58)- 28			
19-59.0	Circular Pipe	DIA=36"	Corrugated Metal	I-19 Nogales Freeway	Santa Cruz River	1200' S. of I-19 & Valencia Rd. Traffic Interchange S. of Valencia Rd. & E. bank of Santa Cruz River.	413400	787900	Tucson	I-19-1(15)	3105+01	L	
19-61.7	Trapezoidal Open Channel	TH=10' D=2'	Concrete	I-19 Nogales Freeway	Rodeo Wash	900' S. of I-19 & Ajo Way Traffic Interchange - E. side of I-19 & S. bank of Rodeo Wash.	428700	788700	Tucson	I-19-1(15)	3270+80	R	
86-171.1	Circular Pipe	DIA=36"	Corrugated Metal	S.R. 86 Ajo Highway	Santa Cruz River	1600' S. of I-19 & Ajo Way Traffic Interchange @ W. bank of Santa Cruz River S. of Ajo Way.	429500	786600	Tucson	S-222-14	1447+78	R	
77-71.8	Circular Pipe	DIA=72"	Corrugated Metal	S.R. 77 Tucson - Florence Highway	Rillito River	S. bank of Rillito River E. of Oracle Rd.	471800	790250	Tucson	F-031-1(7)	197+89	R	

**Drainage System
and Major Outfalls
(Tucson Area)**

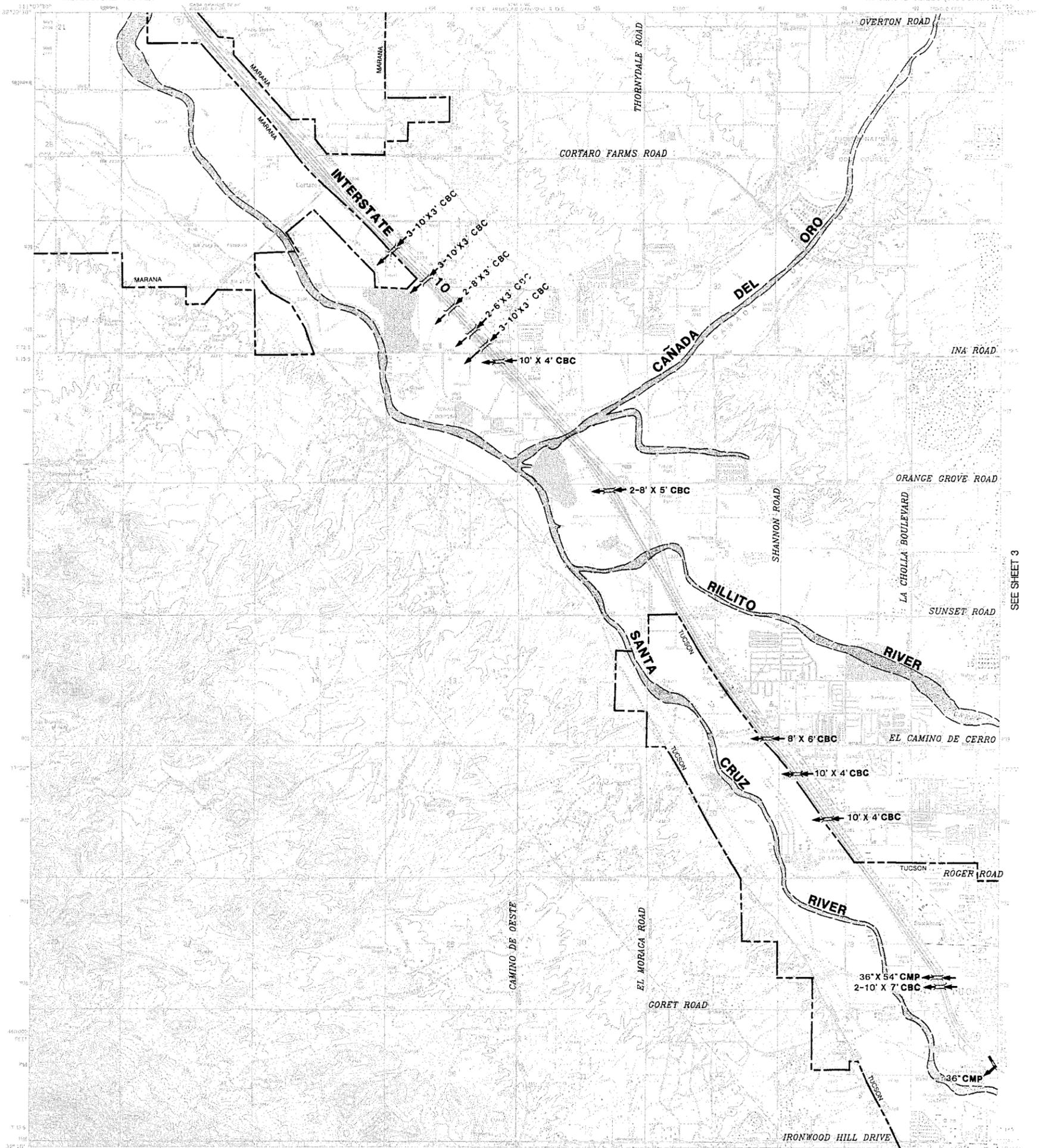
ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN TUCSON



SHEET INDEX MAP

The
WLB
Group Inc.

Engineering • Planning • Surveying
Landscape Architecture • Urban Design
Offices located in Tucson, Phoenix,
Las Vegas and Rancho Cucamonga, CA
333 East Osborn Road Suite 380
Phoenix, Arizona 85012 (602) 279-7427



SEE SHEET 3

SEE SHEET 4

Mapped, edited, and published by the Geological Survey
Controlled by USGS and USGS/GS
Photography by photogrammetric methods from aerial
photographs taken 1952-1954 (with changes 1964)
The metric projection is 1927 North American Datum
10,000 foot grid based on Arizona coordinate system, central zone
1000 meter Universal Transverse Mercator grid ticks
Data: U.S. Census of 1960
© 1964 by the Geological Survey, Department of the Interior
Note: The projection lines 4 meters south and
42 meters west of the shown by dashed lines



SCALE 1:24,000
CONTOUR INTERVAL 20 FEET
VERTICAL CURVE: REINFORCED CONCRETE CULVERTS
NATIONAL GEODESIC SURVEY OF 1929
THIS MAP CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
FOR SCALE OF U.S. GEOLOGICAL SURVEY BENCH MARKS, COORDINATE MEASUREMENT, OR SECTION, NAD 83
A USER DESIRING TO KNOW THE STATUS OF THIS MAP SHOULD CONTACT THE GEOLOGICAL SURVEY

ROAD CLASSIFICATION
Majority
Minority
Unimproved
Structure Road
State Road
JAYNES, ARIZ.
1962
PHOTOGRAPHED 1974
DATA FROM U.S. GEOLOGICAL SURVEY

ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN TUCSON

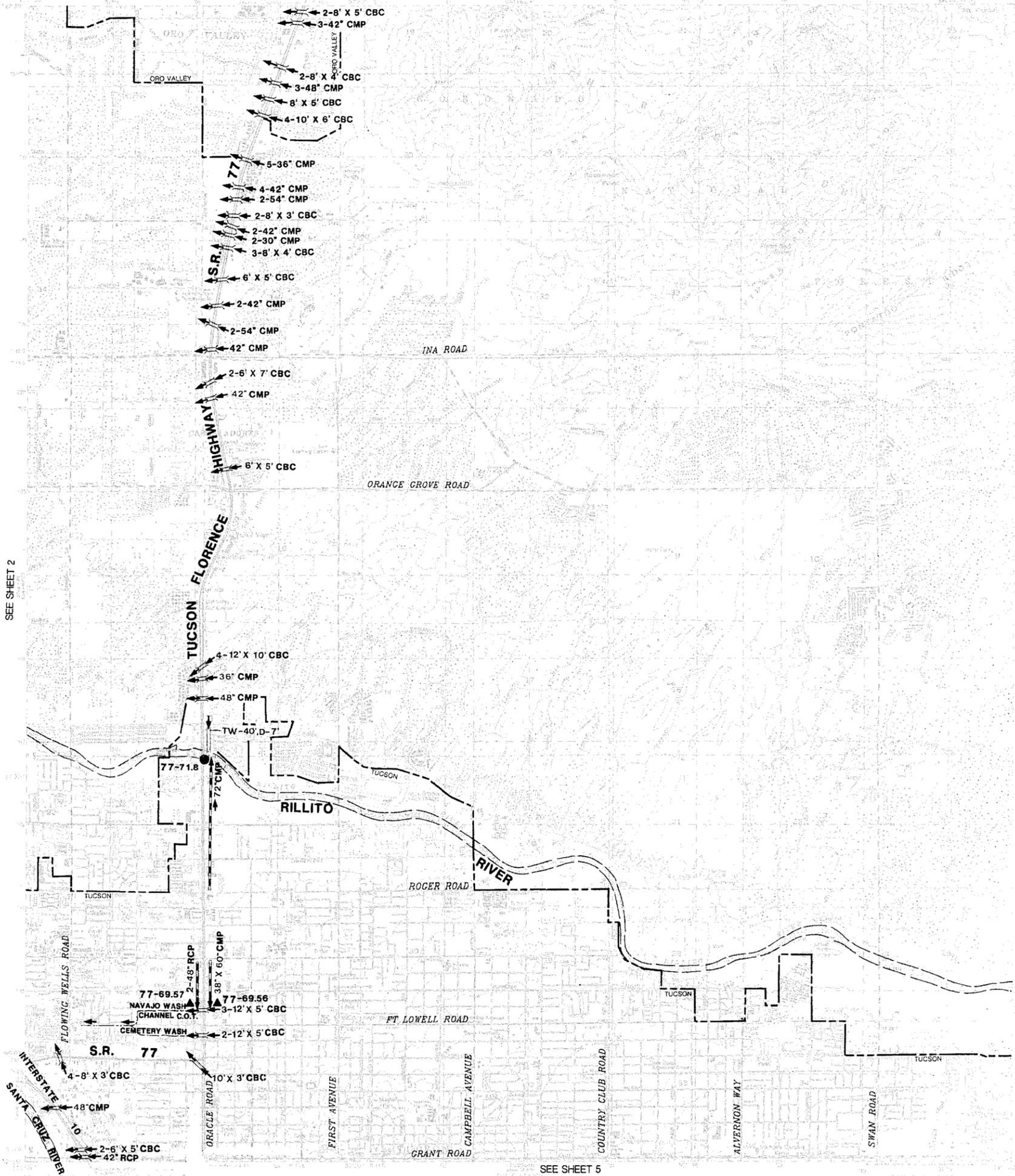


LEGEND

- | | | | |
|--|--|--|--------------------------|
| | OPEN CHANNEL (TOP WIDTH 48', DEPTH 8') | | DETENTION BASIN |
| | ADOT STORM DRAIN PIPE (48" DIA.) | | RETENTION BASIN |
| | OTHER AGENCY STORM DRAIN PIPE | | FLOODWAY BOUNDARY |
| | DRAINAGE TUNNEL | | MUNICIPAL BOUNDARY |
| | PUMP STATION (15 CFS CAPACITY) | | CONCRETE BOX CULVERT |
| | MAJOR OUTFALL WITH IDENTIFIER | | REINFORCED CONCRETE PIPE |
| | DIRECTION OF FLOW | | CORRUGATED METAL PIPE |
| | CROSS DRAINAGE STRUCTURE | | STORM DRAIN |
| | DROP STRUCTURE | | CITY OF TUCSON |



NOVEMBER 1991



SEE SHEET 2

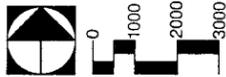
SEE SHEET 5

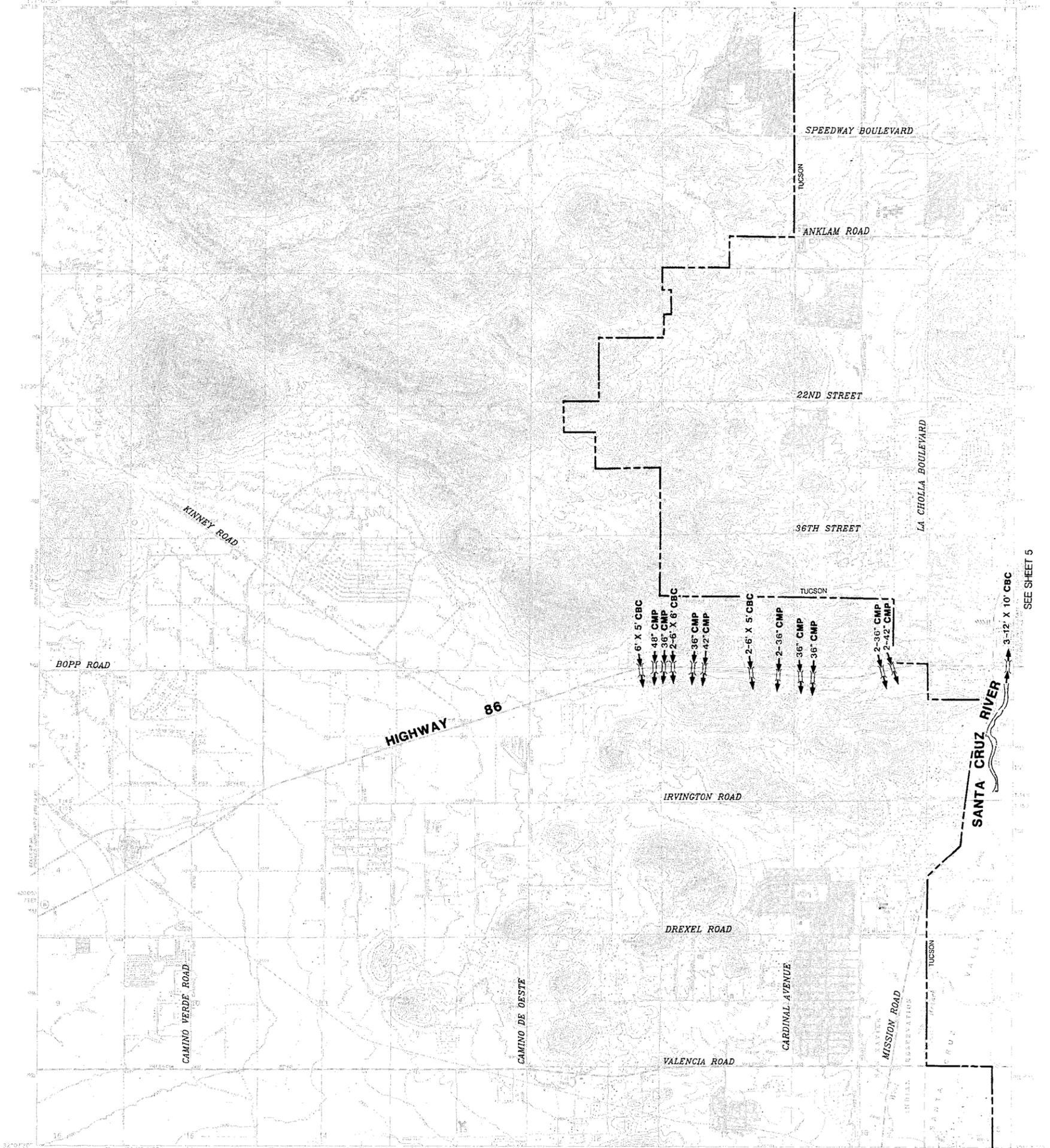
ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN TUCSON



LEGEND	
	OPEN CHANNEL (TOP WIDTH 48', DEPTH 8')
	ADOT STORM DRAIN PIPE (48' DIA.)
	OTHER AGENCY STORM DRAIN PIPE
	DRAINAGE TUNNEL
	PUMP STATION (15 CFS CAPACITY)
	MAJOR OUTFALL WITH IDENTIFIER
	DIRECTION OF FLOW
	CROSS DRAINAGE STRUCTURE
	DROP STRUCTURE
	MAJOR INTERCONNECTION WITH IDENTIFIER
	DETENTION BASIN
	RETENTION BASIN
	FLOODWAY BASIN
	MUNICIPAL BOUNDARY
	CONCRETE BOX CULVERT
	REINFORCED CONCRETE PIPE
	CORRUGATED METAL PIPE
	STORM DRAIN
	CITY OF TUCSON

REVISED NOVEMBER 1992
NOVEMBER 1991





Map compiled, edited, and published by the Geological Survey
 Control by USGS and 1975 edition
 Topography by photogrammetric methods from aerial
 photographs taken 1959. Data checked 1958
 Potentiometric, 1972 North American datum
 10,000-foot grid based on Arizona coordinate system, central zone
 1983 datum. Universal Transverse Mercator grid used.
 Zone 12N, datum 1983
 Red contour lines show areas in which only hand-drawn contours are shown
 Hand-drawn contours indicate selected fence lines
 Elevations given in purple obtained from aerial photographs
 taken 1975. This information was field checked
 Purple tint indicates urban or urban areas

THIS MAP COMPILED WITH NATIONAL MAP ACCURACY STANDARDS
 THIS DATA BY U.S. GEOLOGICAL SURVEY, DENVER QUADRANGLE 50299, DE RESTON, VIRGINIA 20192
 A QUALITY CONTROLLED TOPOGRAPHIC MAP AND PRODUCT IS AVAILABLE FOR PURCHASE

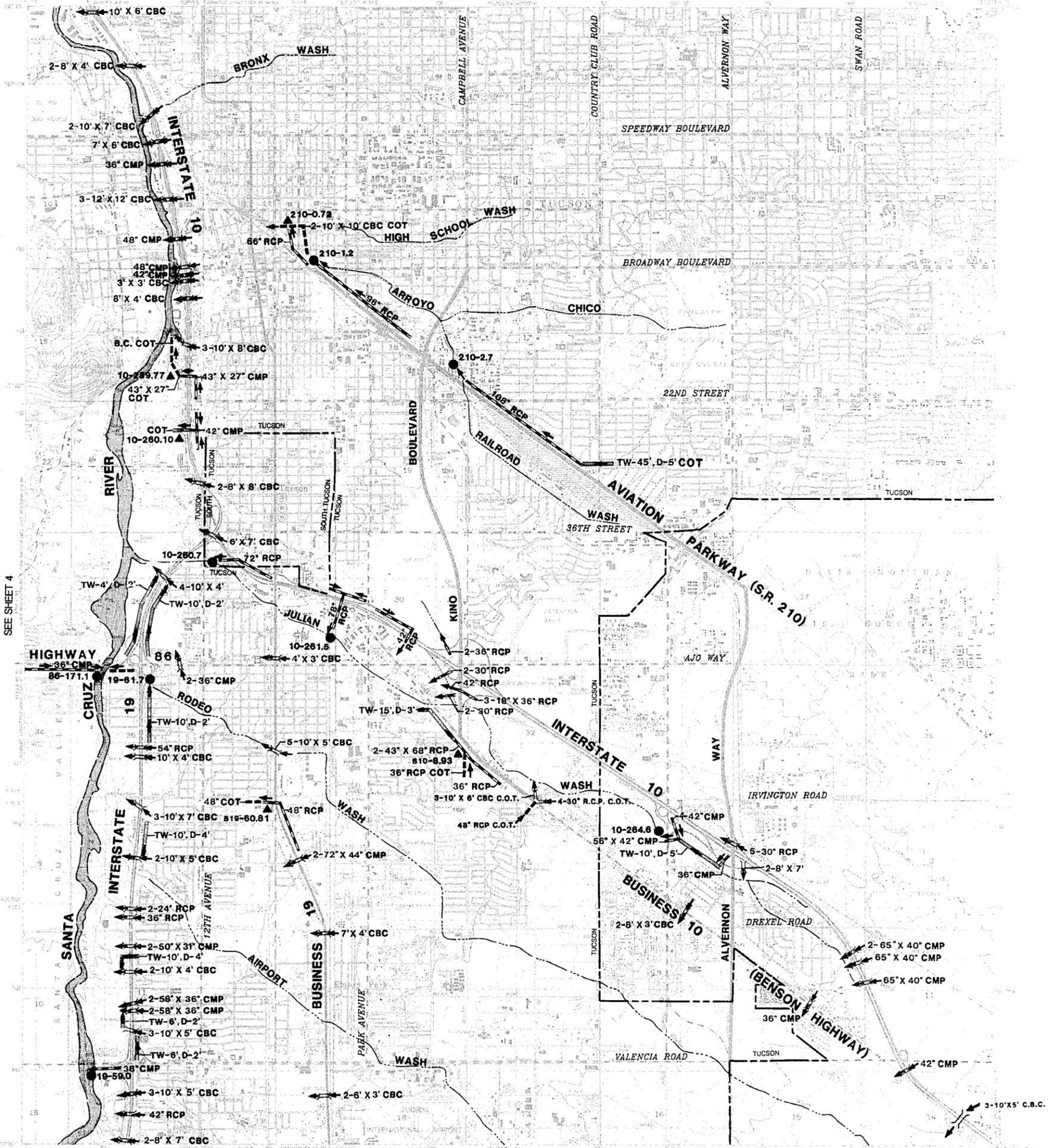
CAT MOUNTAIN, ARIZ.
 1975
 1:25,000 SCALE
 AND 1:25,000 REFERENCE TO SHEET 4

ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN TUCSON

LEGEND

	OPEN CHANNEL (TOP WIDTH 48', DEPTH 8')		DETENTION BASIN
	ADOT STORM DRAIN PIPE (48" DIA.)		RETENTION BASIN
	OTHER AGENCY STORM DRAIN PIPE		FLOODWAY BOUNDARY
	DRAINAGE TUNNEL		MUNICIPAL BOUNDARY
	PUMP STATION (15 CFS CAPACITY)		CBC
	MAJOR OUTFALL WITH IDENTIFIER		RCP
	DIRECTION OF FLOW		CMP
	CROSS DRAINAGE STRUCTURE		S.D.
	DROP STRUCTURE		C.O.T.





SEE SHEET 4

SEE SHEET 6

Map made, edited, and published by the Geological Survey
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Revised from aerial photography, 1967
United States Geological Survey, Map of Tucson, Arizona
Projection: UTM 12N
Scale: 1 inch = 1 mile
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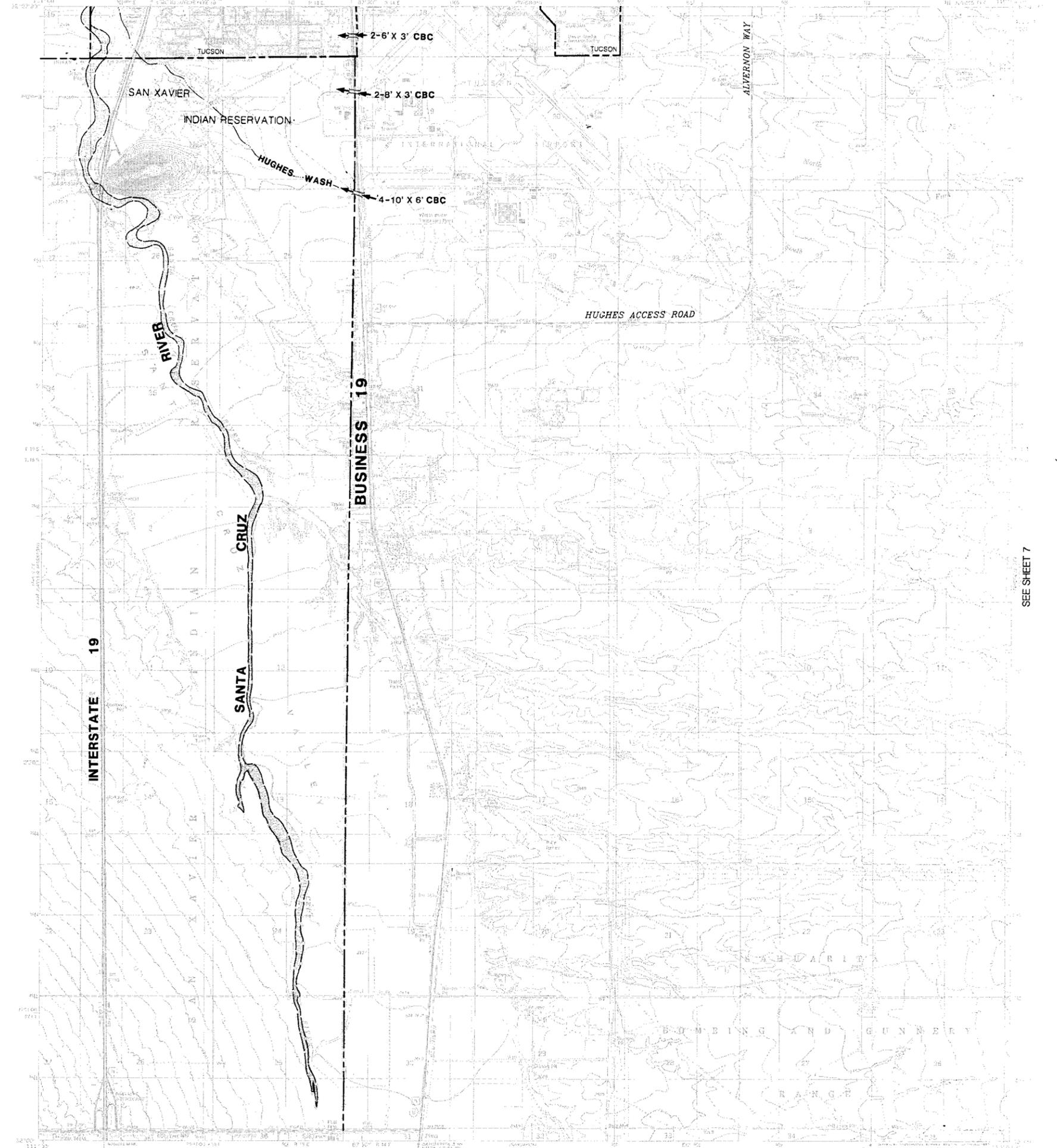
ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN TUCSON



LEGEND	
	OPEN CHANNEL (TOP WIDTH 48', DEPTH 8')
	ADOT STORM DRAIN PIPE (48" DIA.)
	OTHER AGENCY STORM DRAIN PIPE
	DRAINAGE TUNNEL
	PUMP STATION (15 CFS CAPACITY)
	MAJOR OUTFALL WITH IDENTIFIER
	DIRECTION OF FLOW
	CROSS DRAINAGE STRUCTURE
	DROP STRUCTURE
	MAJOR INTERCONNECTION WITH IDENTIFIER
	DETENTION BASIN
	RETENTION BASIN
	FLOODWAY BOUNDARY
	MUNICIPAL BOUNDARY
	CONCRETE BOX CULVERT
	REINFORCED CONCRETE PIPE
	CORRUGATED METAL PIPE
	STORM DRAIN
	CITY OF TUCSON

REVISED NOVEMBER 1992
NOVEMBER 1991





SEE SHEET 7

Maperial, edited, and published by the Geological Survey
Control by L.R.55 and 107000000
Topography by photogrammetric methods from aerial
photographs taken 1958. Final projection 1983
Horizontal datum: Universal Transverse Mercator and 1983
1987 North American Datum
Elevation datum: 1981. Mean sea level 1989
Projection and 1000-foot grid U.S. Airphoto coordinate
system, central area 18N-11W-100000
Horizontal datum: Universal Transverse Mercator and 1983
1987 North American Datum
To assist in the projection North American Datum 1983
more, the projection area 2 meters wide and
60 meters apart to show the detailed contour lines
and the locations of wells, canals, streams,
buildings are shown
This map is for general information only; the boundaries
of the National or State Reservations shown on this map

SCALE 1:25000
CONTOUR INTERVAL 10 FEET
NATIONAL GRID TO VERTICAL DATUM OF 1989
THIS MAP COMPLETES THE NATIONAL MAP ACCURACY PROGRAM
FOR SALE BY U.S. GEOLOGICAL SURVEY, DEWEE, COLORADO 80502 OR RESTON, VIRGINIA, 20192
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

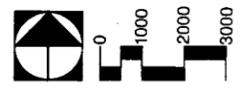
ROAD CLASSIFICATION
Heavy traffic Light traffic
Major highway Minor highway
Interstate Route U.S. Route State Route
TUCSON SW, ARIZ.
NOV 1992
505 1451 0-1 1070 1000

ARIZONA DEPARTMENT OF TRANSPORTATION DRAINAGE SYSTEM AND MAJOR OUTFALLS IN METROPOLITAN TUCSON

LEGEND

- | | | | |
|--|--|--|--------------------------|
| | OPEN CHANNEL (TOP WIDTH 48', DEPTH 8') | | DETENTION BASIN |
| | ADOT STORM DRAIN PIPE (48' DIA.) | | RETENTION BASIN |
| | OTHER AGENCY STORM DRAIN PIPE | | FLOODWAY BOUNDARY |
| | DRAINAGE TUNNEL | | MUNICIPAL BOUNDARY |
| | PUMP STATION (15 CFS CAPACITY) | | CONCRETE BOX CULVERT |
| | MAJOR OUTFALL WITH IDENTIFIER | | REINFORCED CONCRETE PIPE |
| | DIRECTION OF FLOW | | CORRUGATED METAL PIPE |
| | CROSS DRAINAGE STRUCTURE | | STORM DRAIN |
| | DROP STRUCTURE | | CITY OF TUCSON |

REVISED NOVEMBER 1992
NOVEMBER 1991



**Storm Sewer Outfalls
(Tucson Area)**

MAJOR STORM SEWER OUTFALLS (Tucson Metropolitan Area)

Outfall Identifier	Storm Sewer Data			Location Data					Construction Plan Data				
	Route No.- Mile Post	Type	Size/ Depth	Material	Route No. - Route Name	Receiving Water	Location	State Plane Coordinates		City	Project I.D. No.	Project Station	Offset L/R
								North	East				
77-78.7	Open Channel	TH=15' D=4'	Concrete	S.R. 77 Tucson - Florence Highway	Tributary of Canada Del Oro	S.E. Quadrant of U.S. 89 & Greenock Dr.	507400	794400	Oro Valley	F-031-1(11)	564+00	R	
77-78.9	Circular Pipe	DIA=42"	Concrete	S.R. 77 Tucson - Florence Highway	Tributary of Canada Del Oro	N.E. Quadrant of U.S. 89 & Greenock Dr.	507900	794700	Oro Valley	F-031-1(11)	569+00	R	
77-79.9	Open Channel	TH=25' D=8'	Concrete	S.R. 77 Tucson - Florence Highway	Tributary of Canada Del Oro	S.E. Quadrant of U.S. 89 & Hanley Rd.	511800	798200	Oro Valley	BP-031-1-513	620+55	R	
77-80.8	Open Channel	TH=30' D=10'	Concrete	S.R. 77 Tucson - Florence Highway	Canada Del Oro	N.W. Quadrant of U.S. 89 and Canada Del Oro.	515300	802200	Oro Valley	BP-031-1-513	675+74	L	
210-1.2	Circular Pipe	DIA=96"	Concrete	S.R. 210 Aviation Parkway	Arroyo Chico	S.E. of intersection of 10th St. & 3rd Ave.	445500	795000	Tucson	AZP-824-9-510	Line A 185+16	L 234	
210-2.7	Circular Pipe	DIA=108"	Concrete	S.R. 210 Aviation Parkway	Railroad Wash	N.W. quadrant @ intersection of Campbell Ave. & Aviation Pkw.	441000	800750	Tucson	M-824-9-514	18+07	L	

MAJOR STORM SEWER OUTFALLS (Tucson Metropolitan Area)

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**Storm Sewer
Interconnections
(Tucson Area)**

**ADOT Standard
Specifications
Section 107.15**

(SWPOL107, 4051/q, 11/15/92)

SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC: of the Standard Specifications is revised as follows:

107.15 Prevention of Landscape Defacement; Protection of Streams, Lakes and Reservoirs: is revised to read:

1. General:

The contractor shall give special attention to the effect of the contractor's operations upon the landscape, and shall take special care to maintain natural surroundings undamaged.

The contractor shall implement the requirements of the National Pollutant Discharge Elimination System (NPDES) for erosion control due to storm water runoff during construction, as specified under the Environmental Protection Agency (EPA) General Permit for Arizona.

The work shall include providing, installing, maintaining, removing and disposing of erosion control measures such as gravel filter berms, dikes, catch basin inlet protection, end-of-pipe filtering devices, silt fences, dams, sediment basins, netting, straw bale barriers, slope drains, and other erosion control devices or methods.

This work shall include preparing a comprehensive Storm Water Pollution Prevention Plan (SWPPP), including descriptions of proposed measures to be implemented, a schedule detailing the proposed coordination for accomplishing the erosion control features in a timely and appropriate manner, and site-specific diagrams indicating proposed locations where erosion control devices or measures may be required during successive construction stages.

The Engineer and contractor will each complete a Notice of Intent (NOI) form for the project. The NOI's must be submitted to the EPA at the following address at least two days prior to the start of construction:

EPA Stormwater Notice of Intent
P.O. Box 1215
Newington, VA 22122

At that time, copies must also be submitted to the Arizona Department of Environmental Quality, Stormwater Coordinator, P.O. Box 600, Phoenix, AZ 85001-0600; and ADOT Environmental Planning Services, 205 S. 17th Avenue, Mail Drop 619E, Phoenix, AZ 85007. Also prior to the start of construction, the contractor and all subcontractors shall sign certifications that they understand the requirements of the NPDES permit. All subcontractors shall comply with the requirements of the NPDES under the supervision of the contractor.

At the preconstruction conference the Engineer will provide the contractor with the draft Storm Water Pollution Prevention Plan (SWPPP) for the project. The SWPPP will specify levels of pollution protection on a multi-tiered, most cost-effective approach, in accordance with good engineering practices. In addition, the plan will describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharges to assure compliance with the terms and conditions of the EPA permit.

2. "Good Housekeeping" Practices and Requirements:

The SWPPP will also specify the contractor's "good housekeeping" practices and requirements, including vehicle wash-down areas, onsite and offsite tracking control, protection of equipment storage and maintenance areas, and sweeping of highways and roadways related to hauling activities.

The contractor shall take sufficient precautions, considering all conditions, to prevent pollution of streams, lakes, and reservoirs with fuels, oil, bitumens, calcium chloride, fresh portland cement, fresh portland cement concrete, raw sewage, muddy water, chemicals or other harmful materials. None of these materials shall be discharged into any channels leading to such streams, lakes or reservoirs.

Where the contractor's working area encroaches on a running or intermittent stream, barriers shall be constructed and maintained between the working areas and the stream bed adequate to prevent the discharge of any contaminants.

Frequent fording of running streams with construction equipment will not be permitted; therefore, temporary bridges or other structures shall be used whenever an appreciable number of crossings is necessary.

Unless approved in writing by the Engineer, mechanical equipment shall not be operated in running streams.

Streams, lakes and reservoirs shall be promptly cleared of all falsework, piling, debris or other obstructions placed thereby or resulting from construction operations.

3. Implementation:

The Engineer and contractor will jointly review the draft SWPPP, make any revisions needed, and approve and sign the revised SWPPP prior to the start of construction.

The NOI shall be posted at the construction site on the bulletin board. The SWPPP shall be retained at the construction site with other project records, and shall be available for public inspection.

The contractor shall implement the SWPPP as required throughout the construction period. The Engineer and contractor will perform a minimum of one inspection per month, except for areas with mean annual rainfall of 20 inches or more, where an inspection will be performed at least every seven calendar days. In addition, an inspection will be required within 24 hours after each rainfall of 1/2 inch or greater. After each inspection, the Engineer will document the findings and revise the SWPPP as necessary. The Engineer and contractor shall jointly approve and sign each revision to the SWPPP before implementation. The contractor shall implement any changes within seven calendar days following the inspection.

The contractor shall maintain all related erosion control elements in proper working order.

No condition of the Arizona General Permit or the SWPPP shall release the contractor from any responsibilities or requirements under other environmental statutes or regulations.

The contractor shall be aware of the requirement to obtain a separate NPDES permit, associated with industrial activity, for any onsite or off-site asphalt and concrete plants which provide material for the project. The Department will not be responsible for the administration or coordination of the contractor's permit responsibilities for these activities.

Except for that approved in writing by the Engineer, the contractor shall perform no clearing and grubbing or earthwork until the SWPPP has been implemented.

Erosion control and pollution prevention work specified in the contract which is to be accomplished under any of the various contract items will be paid for as specified under those items.

Upon final acceptance by the Engineer, in accordance with Subsection 105.16, the contractor shall complete and mail a Notice of Termination (NOT) for the project. The contractor shall also provide a copy of the NOT to the Arizona Department of Environmental Quality and the ADOT Environmental Planning Services Department.

Work required in the SWPPP will be measured in accordance with the requirements of Subsection 109.04, Force Account Work, except that no measurement will be made for the contractor's "good housekeeping" practices and requirements.

Payment for work specified in the SWPPP will be made in accordance with the requirements of Subsection 109.04, Force Account work, except that no payment will be made for the contractor's "good housekeeping" practices and requirements, the cost being considered as included in contract items. Payment will be made under Item 9240018 - FORCE ACCOUNT WORK (STORM WATER POLLUTION PREVENTION).

No measurement or direct payment will be made to the contractor for time spent in reviewing or revising the Storm Water Pollution Prevention Plan (SWPPP), or providing other required documentation, the cost being considered as included in the price of contract items.

107.18 Contractor's Responsibility for Work: is revised to read:

The contractor shall implement the requirements of the National Pollutant Discharge Elimination System (NPDES) for erosion control due to storm water runoff during construction, as specified above in Subsection 107.15 Prevention of Landscape Defacement: Protection of Streams, Lakes, and Reservoirs.

Until final written acceptance of the project by the Engineer, the contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part thereof by the action of the elements, or from any other cause, whether arising from the execution or from the nonexecution of the work. The contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance. No reimbursement shall be made for work necessary due to the contractor's failure to comply with the requirements of the SWPPP.

Except as specifically provided under Subsection 104.04, in case of suspension of work from any cause whatever, the contractor shall be responsible for the project and shall take such precautions as may be necessary to prevent damage to the project and provide for normal drainage. The contractor shall also erect any necessary temporary structures, signs or other facilities. During such period of suspension of work, the contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established plantings, seedings and soddings, furnished under his/her contract and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.