ARIZONA DEPARTMENT OF TRANSPORTATION
ENGINEERING CONSULTANTS SECTION

STATEMENT OF QUALIFICATIONS PACKAGE

FOR CONTRACT NO. 09-022

I-10, Ina TI to Ruthrauff TI
TRACS No. H7583 01L

Design Concept Report,
Environmental Studies
And
Up to 30% Design

November 2008

STATEMENT OF QUALIFICATIONS PACKAGE
FOR
CONTRACT NO. 09-022
I-10, Ina TI to Ruthrauff TI
TRACS No. H7583 01L

Design Concept Report, Environmental Studies And Up to 30% Design

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SECTION I

PUBLIC ADVERTISEMENT

FOR PUBLICATION November 12 and 19, 2008
IN THE TRIBUNE NEWSPAPERS.
(Mesa Tribune, Chandler Arizonan & Tempe Daily News)

ARIZONA DEPARTMENT OF TRANSPORTATION
ENGINEERING CONSULTANTS SECTION

PUBLIC NOTICE FOR REQUEST FOR STATEMENTS OF QUALIFICATION FOR
CONSULTANTS INTERESTED IN PROVIDING
PROFESSIONAL ENGINEERING SERVICES FOR
I-10, INA TI to RUTHRAUFF TI
IN PIMA COUNTY
ECS CONTRACT NO. 09-022

TRACS NO. H7583 01L

Statements Due: December 4, 2008

The ARIZONA DEPARTMENT OF TRANSPORTATION is accepting Statements of Qualifications from firms to provide professional engineering services for the preparation of a Design Concept Report, an implementation plan, an environmental document (NEPA), and associated studies and reports as well as up to 30% (Stage II) design on the above referenced project.

Statements of Qualifications will be received until 4:00 p.m. Arizona Time on the above referenced date, at ADOT Engineering Consultants Section, 205 South 17th Avenue, Room 293E, Mail Drop 616E, Phoenix, Arizona 85007. No Statements will be accepted after the time specified.

A Pre-Submittal Conference has been scheduled by the Project Manager for Monday, November 24, 2008 at 1:00 PM in ADOT Auditorium, 206 South 17th Avenue, Room 107A, Phoenix, Arizona, 85007. You must have an ID to sign in at the front desk. Persons with a disability may request a reasonable accommodation such as a sign language interpreter, by contacting Susan Tellez at 602-712-7525. Requests for accommodations must be made 48 hours in advance of the event, to allow time to arrange the accommodation.

For further information contact ADOT Engineering Consultant Section, (602) 712-7525 or www.azdot.gov/Highways/ECS. Statement of Qualification packages for Contract No. 09-022 available for pickup at the ADOT Engineering Building, 205 South 17th Avenue, Room 293E, Phoenix, Arizona 85007.

SECTION II

INFORMATION COPY TO CONSULTANTS

ARIZONA DEPARTMENT OF TRANSPORTATION
ENGINEERING CONSULTANTS SECTION

INFORMATION COPY TO CONSULTANTS

REQUEST FOR STATEMENTS OF QUALIFICATION FOR
CONSULTANTS INTERESTED IN
PROFESSIONAL ENGINEERING SERVICES FOR
I-10, INA TI to RUTHRAUFF TI
IN PIMA COUNTY
ECS CONTRACT NO. 09-022

TRACS NO. H7583 01L

Statements Due: December 4, 2008

Statements of Qualifications expressing interest in the project will be received until 4:00 P.M. (Arizona Time) on the date shown above, at the office of Engineering Consultants Section, 205 South 17th Avenue, Room 293E, Mail Drop 616E, Phoenix, Arizona 85007. NO Statements will be accepted after the time specified.

Statements will be accepted from any firm or corporation who is properly registered with the Arizona Board of Technical Registration and who has a principal or officer responsible for this contract that is properly registered with the Arizona Board of Technical Registration at the time the Statements of Qualifications are due.

The selected consultant will provide professional engineering services for the preparation of a Design Concept Report, an environmental documentation (NEPA), and associated studies and reports as well as 30% (Stage II) design to identify recommended improvements within the study corridor, on I-10 both eastbound and westbound direction from MP 247.50 Ina TI to MP 253.43, Ruthrauff TI.

The consultant may be required to perform services including, but not limited to preparation of Initial and Final Design Concept Report, preparation of Draft and Final Environmental Documents, conduct public involvement and agency coordination activities, prepare Final Traffic Analysis Report, prepare Final Drainage Report, prepare Hydrologic and Hydraulic analyses, up to 30% design plans and requires close coordination with ADOT Utilities and RR/UPRR Section.

The consultant selected to perform the required services will not be eligible to propose for the final design of this project.

Effective the date of the public advertisement of this contract, no further contact is allowed with any ADOT personnel concerning this project except for the Pre-submittal meeting and questions directed to the assigned Contract Specialist. This restriction is in effect until selection has been announced.

A Pre-Submittal Conference has been scheduled by the Project Manager for Monday, November 24, 2008 at 1:00 PM in ADOT Auditorium, 206 South 17th Avenue, Room 107A, Phoenix, Arizona, 85007. You must have an ID to sign in at the front desk. Persons with a disability may request a reasonable accommodation such as a sign language interpreter, by contacting Susan Tellez at 602-712-7525. Requests for accommodations must be made 48 hours in advance of the event, to allow time to arrange the accommodation.

Any questions of an administrative or contractual nature that were not addressed at the Pre-Submittal meeting must be submitted in writing and directed to the attention of Susan Tellez at the address below.

Susan Tellez, Contract Manager
Engineering Consultants Section (ECS)
205 S. 17th Avenue, Room 293E, Mail Drop 616E
Phoenix, AZ 85007
Phone 602-712-7525
FAX 602-712-7424

Questions will be received until 4:00 PM on November 28, 2008. A fax is also acceptable. No further questions will be accepted after the time specified.

All consultants will be notified of the consultant's request for information and the Department's response to the question. Information will be posted on the ECS Website as well as faxed to those firms that have registered for project updates.

Any violation of the above contact restrictions may be grounds for rejection of the consultants SOQ.

The Engineering Consultants Section Statement of Qualifications format for Contract No. 09-022 shall be followed when expressing interest in this project. The Statement of Qualifications package, or information regarding same, may be obtained from the address shown above, telephone (602) 712-7525. **Statements of Qualifications not following the correct format will be rejected**.

In order to qualify for selection, a firm must have on file with the Department a current "Prequalification Statement" or submit same with the Statement of Qualifications. Prequalification Statement forms may be obtained from the address shown above, telephone (602) 712-7525.

The Department may select one or more firms from among those submitting Statements of Qualification for further consideration. Previous experience in ADOT Predesign major scoping will be a factor in the selection.

Within two weeks after receiving notice of selection, the selected consultant and its sub-consultants are required to understand and comply with the Advance Agreement Checklist as detailed in SECTION IX and submit financial documentation to ADOT's Office of Audit and Analysis as detailed in SECTION X of the SOQ Package.

Please be aware that the items outlined above represent the information needed to begin the audit review process. Additional information and supporting documentation may be requested.

Failure to comply with Audit requirements within the established deadlines may be considered failed negotiations.

Questions in regards to ADOT's Audit requirements or related information may be directed to ADOT's Office of Audit and Analysis at 602-712-7491.

All material submitted in accordance with this solicitation becomes the property of the State of Arizona.

Lobbying certification/disclosure certification statement will be required in the introductory letter from those submitting Statements of Qualifications.

The right is reserved by the Department to reject any and all Statements of Qualification.

Professional Liability Insurance will be required.

The Boiler Plates for all Engineering Consultant Section Contracts are not negotiable.

Partnerships (joint-ventures) will not be considered.

Reviewing the successful Proposal(s) would be allowed but copying is not permitted.

Inclusion of work hour and/or plan sheet estimates in the SOQ will not be allowed.

SECTION III

STATEMENT OF QUALIFICATIONS FORMAT INSTRUCTIONS

ENGINEERING CONSULTANTS SECTION
STATEMENT OF QUALIFICATIONS FORMAT INSTRUCTIONS
CONTRACT NO. 09-022

Provided for your use is the format for submission of a **STATEMENT OF QUALIFICATION**.

1. **SIX COPIES OF THE STATEMENT OF QUALIFICATION ARE REQUIRED BY ADOT.**

2. **There is a TOTAL PAGE LIMIT of 12 pages. The proposal may include clear report covers, covers, dividers, table of contents, tables, figures, maps, etc., but these must fit within the 12 page limit. A page shall be 8 1/2 X 11 inches, blank, or printed on one side only. Fold out pages are not allowable.**

3. **The SOQ proposal must follow the format outlined below:**

	FORMAT CONTENT	MAXIMUM POINTS	TOTAL NUMBER OF PAGES
	FRONT COVER **(Optional, but if included will count as a page)**		
PART A	INTRODUCTORY LETTER		
PART B	EVALUATION CRITERIA **May include information to support Criteria.**		
	1. Project Understanding & Approach	40	
	2. Project Team	35	
	3. Firms Capability	20	
	4. Location of Work	5	
PART C	CONSULTANT FIRM INFORMATION PAGE		
	BACK COVER **(Optional, but if included will count as a page)**		
		TOTAL POINTS	**TOTAL PAGES**
	TOTAL POINTS	100	12

4. **Any amendments issued on the SOQ and included in the SOQ, as required, will NOT be counted as pages.**

5. **Submissions failing to follow all instructions outlined above will be rejected and the Consultant notified in writing of the reason(s) for rejection.**

ENGINEERING CONSULTANTS SECTION
Statement of Qualifications
Format and Evaluation Criteria
for Contract No. 09-022

The following describes more specifically, the content of each part.

PART A, INTRODUCTORY LETTER

The introductory letter should be addressed to:

Arizona Department of Transportation
Engineering Consultant Section
205 South 17th Avenue
Room 293E, Mail Drop 616E
Phoenix, Arizona 85007

The introductory letter should contain the following items:

- An expression of the firm's interest in being selected for the project.
- A statement that the firm is pre-qualified with ADOT, or that the necessary pre-qualification information is being submitted with the proposal.
- A statement confirming the commitment of the key personnel identified in the submittal to the extent necessary to meet ADOT's quality and schedule expectations.
- Provide name and Professional Engineers registration number of the principal or officer responsible for this contract that is properly registered with the Arizona Board of Technical Registration at the time the Statements of Qualifications are due.
- A summary of key points regarding the firm's qualifications.
- A statement that the Consultant certifies, by signing and submitting this proposal to the best of his or her knowledge and belief, that no Federally appropriated funds have been paid or will be paid, by or on behalf of the undersigned for the purpose of lobbying (Refer to Section V).

PART B, EVALUATION CRITERIA

The information that should be included in the discussion of qualifications is outlined here.

1. Project Understanding and Approach

   a. Discuss generally the tasks involved in this project. Identify any special issues or problems that are likely to be encountered. Demonstrate clearly and concisely your understanding of the technical and institutional elements with which the consultant must deal.

   b. Outline your proposed approach for dealing with the tasks and issues of this project. Provide a tentative schedule indicating the duration and functional relationship of major tasks and key events. A graphical depiction may be included with the evaluation criteria.

   c. Explain how your firm will use Partnering in this project. (Relates to Construction Administration only.)

2. Project Team

Identify your proposed project team and its collective qualifications for this particular project. In particular, discuss the following:

a. Project Principal. Identify the person who (1) will be responsible for ensuring that adequate personnel and other resources are made available for this project; (2) will handle contractual matters, and; (3) will be ultimately responsible for the quality and timeliness of the consultant's performance. State that person's position and authority within the firm. Discuss previous similar projects for which this person has performed a similar function.

b. Project Manager. State who will actively manage this project. Identify any projects that person will be involved with concurrently and time committed to each project. List recent similar projects for which this person has performed a comparable function. Discuss relevant experience, professional registrations, education and other components of qualifications applicable to this project.

c. Project Engineer(s) and/or Other Key Personnel. Identify other members of the project team including subconsultants that provide special expertise or will perform key tasks. Describe their anticipated roles. Discuss their relevant experience, registration, education and other elements of qualification applicable to this project.

d. Construction Cost Estimator. Specify who will be responsible for construction cost estimating and that persons relative experience on projects similar to the one being submitted on.

3. Firm Capability

a. Discuss recent relevant experience of the firm. Projects listed should be similar in nature to the current project and to the extent possible involve team members proposed for this project.

b. Discuss quantitatively how this project would impact the current and anticipated workload of the office, which will perform this work. If "staffing up" will be necessary, discuss which areas and how that would be accomplished.

c. Describe any special equipment, software or other resources your firm has which will enhance your ability to accomplish this project. If you propose to use CADD, describe the applicable training and experience of your staff and identify any previous projects for which you have used CADD.

d. Describe your internal procedures for developing, monitoring and maintaining project schedules and budgets.

e. Describe your internal quality control procedures.

f. Describe any notable expertise, increase in capacity or other special capabilities of your subconsultants that are critical to your proposal.

g. Describe how your quality program would enhance the development of this project.

h. Describe your internal procedures for providing partnering education and development. (If applicable)

4. Location of Work

Describe where the key elements of this work will be performed by the Prime Consultant and the Subconsultants. ECS will award points based on the following criteria:

Less than 50% of all work done in state	0 points
At least 50% but less than 95% of all work done in state	1 point
At least 95% of all work done in state	3 points
100% of all work by the Prime and Subconsultants must be performed in State. Prime must be project convenient (within 35 miles of principal job site).	5 points

PART C, CONSULTANT FIRM INFORMATION SHEET

Complete the form provided or a facsimile thereof and include as a part of your submittal.

ENGINEERING CONSULTANTS SECTION
Proposal Evaluation Form

Questions, which the review panel will generally be seeking to answer in their evaluation, are listed here. The maximum points available for each category are indicated, though the relative weighting of items within each category is up to the discretion of the individual reviewers.

1. PROJECT UNDERSTANDING AND APPROACH

- Does the consultant understand the nature and scope of the project and the major tasks and issues that will need to be addressed?
- Has the consultant correctly identified any special problems that are likely to be encountered?
- Does the consultant appreciate the interrelation and relative importance of the various project issues?
- Has the consultant's understanding of the project been expressed clearly and concisely?
- Has the consultant proposed logical approaches for dealing with the project tasks and issues?
- Does the schedule incorporate all the major tasks and events? Does it reflect the interrelationship of important project elements and events? Is the proposed timing realistic?
- Does the consultant understand its responsibilities for the project?

2. PROJECT TEAM

- What is the level of ability and experience of the proposed project manager? What is the person's record of accomplishing similar projects in the past in terms of (1) quality of work?
  (2) Meeting schedules, (3) responsiveness to special needs and concerns of the client? Is this individual familiar with specific ADOT standards and procedures?
- Does the person identified as ultimately responsible for the consultant's performance have the authority necessary to commit firm resources, and to act on behalf of the consultant regarding contractual matters and disputes? What is this person's experience and record of performance on past projects of similar type and magnitude? Has this individual been responsive to ADOT and/or other clients in the past?
- Do other key members of the project team (including subconsultants) provide the range and level of expertise necessary to deal with the scope of this project? Are these individuals familiar with specific ADOT standards and procedures? Have they worked together as a team before?
- Specify who will be responsible for construction cost estimating and that persons relative experience on projects similar to the one being submitted on.

3. FIRM CAPABILITY

- What level of experience <u>relevant to this project</u> does the consultant have? Are the firm's employees with the relevant experience participating in this project? Is the consultant familiar with ADOT standards and procedures? Has the firm shown a particular commitment to this type of work?

3. FIRM CAPABILITY (continued)

- Has the consultant provided quantitative data indicating that qualified personnel will be available for this project? Does the consultant realistically have the ability to add qualified staff if needed for this project or other projects that happen to come on line before this project is completed?

- Will this project benefit from the use of CADD? If so, does the consultant have the type and amount of CADD equipment appropriate for this project? Is the consultant's staff suitably trained and experienced in the use of CADD? Has the consultant successfully used CADD on past ADOT or similar projects?

- Does the firm have other special equipment or software that will be beneficial to this project? Are current staff members familiar with its use? Has it been used successfully before on ADOT or other similar projects?

- Is the consultant's approach for developing and maintaining the project budget and schedule sound? Has the consultant used these procedures successfully on ADOT or similar projects in the past? Are proposed measures to avoid or make up slippage on the schedule realistic?

- Is the consultant's quality control program suitable? Has it been used successfully by the consultant on ADOT or similar projects in the past?

- If one or more subconsultants are critical to the consultant's proposal, do these firms have the technical expertise, available personnel and record of performance appropriate for their anticipated roles?

CONTRACT NO. _____

STATEMENT OF QUALIFICATIONS/SELECTION PANEL COMMENT FORM

FIRM NAME_____ #_____ PANEL MEMBER_____ #_____

1. PROJECT UNDERSTANDING AND APPROACH

What did you like about the firm's understanding and approach?

_____
_____
_____

What did you dislike about the firm's understanding and approach?

_____
_____
_____

What did you think about the way the firm handled special problems and/or special situations?

_____
_____
_____

What did you think about the schedule?

_____
_____
_____

What parts of the understanding and approach did you think were well done?

_____
_____
_____

What suggestions would you make to the firm to improve this section for the next time?

_____
_____
_____

SCORE (40 Maximum) _____

PANEL COMMENT FORM
PAGE TWO

CONTRACT NO. _____

FIRM NAME_____ #_____ PANEL MEMBER_____ #_____

2. PROJECT TEAM

Team Strengths:

_____
_____
_____

Team Weaknesses:

_____
_____
_____

How are the team member's qualifications geared to this specific project?

_____
_____
_____

SCORE (35 Maximum) _____

3. FIRM'S CAPABILITIES

Firm's strong areas as related to this project:

_____
_____
_____

Firm's weak areas as related to this project:

_____
_____
_____

PANEL COMMENT FORM
Page Three

CONTRACT NO. _____

FIRM NAME_____ #_____ PANEL MEMBER_____ #_____

3. FIRM'S CAPABILITIES, CONTINUED

How did the firm fit the subconsultant's qualifications/duties into overall picture?

_____
_____
_____

SCORE (20 Maximum) _____

(SCORES ARE TO BE ENTERED AND TOTALED ON SCORE SHEET)

==========

OTHER:

Any comments on the format and presentation of the SOQ?

_____
_____
_____

Any other comments or suggestions?

_____
_____
_____

SECTION IV

CONSULTANT FIRM INFORMATION PAGE

PART C - CONSULTANT FIRM INFORMATION PAGE

CONTRACT NO.: 09-022

CONTACT PERSON: _____

E-MAIL ADDRESS: _____

CONSULTANT FIRM: _____

ADDRESS: _____

_____

_____

CITY, STATE ZIP: _____

TELEPHONE: _____

FAX NUMBER: _____

ADOT CERTIFIED DBE FIRM? _____

AFFIRMATIVE ACTION ON FILE WITH ADOT? _____

SUBCONSULTANT(S)	TYPE OF WORK	ADOT CERTIFIED DBE FIRM

NOTE: The Consultant Firm Information Page <u>must be a separate full page and is included in the total page count.</u> This page is not evaluated by the Selection Panel, but is used by Engineering Consultants Section for administrative purposes.

SECTION V

LOBBYING CERTIFICATION

Lobbying Certification

The Consultant certifies, by signing and submitting this proposal (see statement in "Introductory Letter"), to the best of his or her knowledge and belief, that:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract grant, loan, or cooperative agreement.

(2) If any funds other than Federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. Copies of Form-LLL "Disclosure Form to Report Lobbying', are available at ADOT Engineering Consultants Section, 205 S. 17th Avenue, Mail Drop 616E, Room 293E, Phoenix, AZ 85007.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, and U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The proposer also agrees, by submitting its proposal, that it shall require that the language of this certification be included in all subcontracts and lower tier subcontracts which exceed $100,0000 and that all such subcontracts and lower tier subcontractors shall certify and disclose accordingly.

The Department will keep the Consultants certification on file as part of their original proposals. The Consultant shall keep individual certifications from all subcontractors and lower tier subcontractors on file. Certifications shall be retained for 3 years following completion and acceptance of any given project.

Disclosure forms for the Prime Consultant and or their subcontractors and lower tier subcontractors shall be submitted to the Contract Manager at the date Statements of Qualifications are due, when said subcontracts exceed $100,000. During the performance of the contract the Consultant and any affected subcontractors shall file revised disclosure forms at the end of each calendar year quarter in which events occur that materially affect the accuracy of any previously filed disclosure form. Disclosure forms will be submitted by the Contract Manager to the Federal Highway Administration for further processing.

SECTION VI

ADOT EMPLOYEE POST EMPLOYEE EMPLOYMENT RESTRICTIONS

SUPPLEMENTAL SERVICES RESTRICTIONS

Arizona Department of Transportation

Intermodal Transportation Division

206 South Seventeenth Avenue Phoenix, Arizona 85007-3213

Janet Napolitano
Governor

Victor M. Mendez
Director

Debra Brisk
Deputy Director

August 18, 2004

REVISED
INFORMATION BULLETIN NO. 04-05

TO: ADOT Project Managers/Monitors, Resident Engineers
And Consultant Engineering Firms

FROM: Engineering Consultants Section

SUBJECT: CONFLICT OF INTEREST
SUPPLEMENTAL SERVICES RESTRICTIONS

The purpose of this bulletin is to provide guidance to firms supplying supplemental service employees to ADOT under contracts administered by the Engineering Consultants Section (ECS).

The following restrictions are intended to avoid actual or perceived conflicts of interest. The reference to "ADOT contract employee" applies to both full time and part time contract employees.

1. A current ADOT contract employee cannot be included in a Statement of Qualifications proposal for an ADOT consultant contract as a member of the consultant's team. Exceptions would be:

    a. if the contract employee resigns to comply with this rule their last day of ADOT contract employment must be prior to the date that the proposals are due; or

    b. if the employee's contract is in it's third year and within 4 months of the contract completion date; or

    c. if the Department exercises it's option not to extend the existing contract.

2. If a current or former ADOT contract employee is employed by a consultant which has an active ADOT contract for which the contract employee was a decision maker (for example: involved in the final scope preparation, involved in the selection process or negotiated/approved billings or contract modifications), the employee is prohibited from working on these contracts.

As of this date, a copy of this information bulletin will be included in each ECS Statement of Qualifications package.

If a waiver is requested from the above restrictions, a statement must be submitted to ECS describing the nature of their involvement prior to proposal submittal or work assignment. Resolution of potential conflicts of interest will be determined by ECS in conjunction with the applicable Deputy State Engineer.

FIFE SYMINGTON
Governor

LARRY S. BONINE
Director

ARIZONA DEPARTMENT OF TRANSPORTATION

INTERMODAL TRANSPORTATION DIVISION
ENGINEERING CONSULTANTS SECTION
205 South 17th Avenue - Room 293E, Mail Drop 616E
Phoenix, Arizona 85007

THOMAS G SCHMITT
State Engineer

March 7, 1996

Engineering Consultants Section

INFORMATION BULLETIN 96-04

TO: CONSULTANTS

FROM: ENGINEERING CONSULTANTS SECTION

SUBJECT: ADOT Employee Post Employment Restrictions

The purpose of this bulletin is to provide guidance to consultants in the employment of current or former ADOT employees to work on contracts administered by the Engineering Consultants Section. The following guidelines and policy are intended to avoid actual or perceived conflicts of interest. The reference to "current ADOT employee" applies to both full time employees and temporary employees.

1. A current ADOT employee cannot be employed by a consultant to work on active ADOT contracts.

2. A current ADOT employee cannot be included in a Statement Of Qualifications proposal for an ADOT consultant contract as an owner, an individual, or as a member of the consultants team. If an employee resigns to comply with this rule their last day of ADOT employment must be prior to the date that the proposals are due.

3. If a current or former ADOT employee is employed by a consultant which has an active ADOT contract for which the employee was a decision maker in the selection process or negotiated/approved billings or contract modifications, the employee is prohibited from working on these contracts (Policy and Implementation Memorandum 92-12).

SECTION VII

PROJECT SUMMARY
REFERENCE MATERIAL AVAILABILITY

REFERENCE MATERIAL
FOR
CONTRACT NO. 09-022

I-10, Ina TI to Ruthrauff TI

The following documents regarding this project are now available at the following FTP location for the Consultant to review:

ftp://ftp.azdot.gov

User Name: ECS
Password: Ecs_01
(Case Sensitive)

I-10 General Plan Tangerine Road to Ruthrauff Road

I-10 Corridor Improvements General Plan
Ruthrauff Road to Tangerine Road
Final Environmental Assessment

I-10 Corridor Design Plans

SECTION VIII

SCOPE OF WORK

INTERSTATE 10: I-10 RECONSTRUCTION
010 PM 247 H7583 01L
CASA GRANDE – TUCSON HIGHWAY
I-10

SCOPE OF WORK

CONTRACT No. 09-022

PHASE I

DESIGN CONCEPT REPORT (STAGE I)
&
ENVIRONMENTAL STUDIES

AND PHASE II

PLAN DEVELOPMENT (STAGE II)

AUGUST 2008

ROADWAY PREDESIGN SECTION
ROADWAY ENGINEERING GROUP
INTERMODAL TRANSPORTATION DIVISION
ARIZONA DEPARTMENT OF TRANSPORTATION

ENGINEERING DOCUMENT AND ENVIRONMENTAL DOCUMENT

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- 160 Length of Services
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200 DESIGN REFERENCES
- 210 AASHTO Publications

300 DESIGN CRITERIA
- 301 Supplemental Design Criteria

400 SCOPING WORK PERFORMED BY CONSULTANT
- 410 Public Information Meetings And Public Meetings
- 420 Data Collection
- 430 Cost Estimates
- 470 Traffic Analysis
- 480 Surveys and Mapping
- 490 Freeway Management System
- 495 Utilities and Railroads

500 MANAGEMENT CONSULTANT SERVICES (Not Applicable)

600 POST-DESIGN SERVICES (Not Applicable)

700 MATERIALS FURNISHED BY ADOT
- 710 Surveys and Mapping
- 720 Materials Investigation
- 730 Record Documents
- 740 Traffic Data
- 750 Miscellaneous

800 DESIGN COORDINATION (Not Applicable)

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- 1020 Consultant
- 1021 Project Control
- 1022 Subcontract Services
- 1023 Project Related Correspondence
- 1024 Quality Control
- 1025 Quality Control (QC) Plan Requirements
- 1026 Consultant Personnel
- 1030 Acceptability of the Work
- 1040 Concept Design Study Documentation
- 1045 Computer-Aided Drafting and Design (CADD)
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PLAN DEVELOPMENT STAGE II

PHASE II
SCOPE OF WORK
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447 Aesthetics
450 Drainage Design
455 Landscape Architectural Design and Erosion Control
460 Traffic Engineering Design
470 Right of Way
480 Cost Estimates

APPENDICES
A. Site and Location Map
B. Responsibility Chart
C. Procedures for Location/Design Concept Studies and Environmental Studies
D. Regional Transportation Authority Plan
E. Responsibility Chart (to be used as a guide only)
F. Distribution List (to be used as a guide only)
G. Final Cost Proposal
H. Payment Report
I. Evaluation Schedule
J. Dictionary of Standardized Work Tasks

PHASE I
PROJECT SCOPE OF WORK

100 GENERAL INFORMATION

110 Location

Project 010 PM 247 H7583 01L, begins at approximately Milepost (MP) 247.50 and extends east to Milepost (MP) 253.43. The study location is described as Ina Road TI to Ruthrauff Road TI. The project is entirely within Pima County, the City of Tucson, and the Town of Marana. Interstate 19 (I-19) is about 7 miles east of this project area.

The work will involve preparation of a Design Concept Report, an implementation plan, an environmental documentation (NEPA), and associated studies and reports as well as to identify recommended improvements within the study corridor, on I-10 both eastbound and westbound direction from MP 247.50, Ina Road TI to MP 253.43, Ruthrauff TI. This segment of I-10 has currently three lanes in each direction.

Local area growth along the study limits has caused increased traffic, generated from new residential developments and businesses along this portion of the I-10 corridor. This part of the interstate highway is part of the CANAMEX Corridor. This corridor is also of international, national and regional significance. This interstate highway is not only important to the local communities on the route but also to those linked to it as well. Traffic moves along I-10 to reach to other states, ports, manufacturing plants and other facilities. There is tremendous growth in freight traffic, especially truck traffic. While the increase traffic affects congestion, air quality, highway safety and highway maintenance, it also provides economic development. The Department's long-range goal is to provide an improved roadway for commuters between Ina Road TI to Ruthrauff Road TI and general traffic including truck traffic, traveling along this portion of the I-10 corridor.

Arterial Crossings of I-10 which currently have at grade crossing with the Union Pacific Railroad will be modified to grade separate the arterial road and the UPRR.

It may be necessary to collect and analyze data beyond the currently proposed limits. A project map is provided in Appendix A.

Factors that will be addressed in the evaluation include alignment modifications, bridge replacement, drainage, traffic control, right of way, utility relocation, any environmental impacts, traffic operations including traffic interchanges operation, and cost. Several technical reports are to be prepared for this study including an environmental document (NEPA), Traffic Operations Analysis Report and Conceptual Drainage Report.

120 Description of Project

This project is developed into two phases. The first phase consists of an Environmental Document and an Engineering Document developed to Plans Development Stage I. The second phase consists of developing the selected alternate to the Plans Development Stage II. This is a pilot project in Predesign Section to evaluate efficiencies of completing Plans Development to Stage II and advancing activities in Materials Group, Right-of-Way Group, and Photogrammetry and Mapping Group.

The work will include preparation of a Design Concept Report, an Implementation Plan, associated environmental documentation (NEPA), and related studies and reports in order to identify recommended improvements on I-10 in both eastbound and westbound direction within the study limits from MP 247.50, Ina Road TI to MP 253.43, Ruthrauff Road TI.

Reports and Studies will address the following:

A. Develop Initial and Final Design Concept reports evaluating the long term needs within this study corridor and identifying improvements to address these needs based on the following engineering tasks:

1. Develop short and long-term improvement plans. Interim projects are to be assessed in concert with the ultimate corridor plan. Previously scoped Project Assessments or Feasibility Studies within the study corridor will also be evaluated.

2. Appropriate geometric configurations based on capacity, level of service, horizontal & vertical clearance, safety, constructability, and other general design criteria within the study limits including the following locations;

   - Traffic Interchange at Ina Road, Orange Road, Sunset Road and Ruthrauff Road.

3. Evaluate the full impacts of corridor improvement alternatives on right-of-way, the hydrology and hydraulics of drainage features, and corresponding approach roadways, and crossroads.

4. Logical construction segments, logical sequence, and probable timetable when additional travel lanes may be needed based on traffic projections, maintenance problems, traffic control, constructability and other factors.

B. Prepare draft and final environmental document (NEPA). The type of environmental document (EA or EIS) that will be prepared for this Design Concept Report will be discussed at the first project team meeting. At this meeting, the project team will provide preliminary information to the selected Consultant, whether EA or EIS will be prepared in this study.

C. Assist ADOT in public involvement and agency coordination to build consensus among local communities and agencies.

D. Prepare a Final Traffic Analysis Report with sufficient data to support the design concepts. Design Year traffic capacity needs will be evaluated as well as interim year analysis as needed to support development. Evaluate ITS needs within the study limits especially to those related to winter operation.

E. Prepare a Final Drainage Report with sufficient detail to provide sizing of cross-drainages to support alternatives, while identifying existing drainage problems and cross-drain impacts of widening alternatives. Drainage studies should include scour evaluations at the existing cross-drainage structures.

F. Hydrologic and hydraulic analyses for bridge replacement, including preliminary scour analysis at bridge and design. Along with a detailed watershed description, the hydrologic analysis should include description of flood data and flood frequency analysis. To size the replacement bridge, both the bridge span and the low chord must be specified and a field investigation should be conducted to verify any initial results from the hydraulic model.

G. Evaluate locations for potential roadway under and over crossings along the length of the study limits that may support future land use and community development. Such locations will be based on planning-level criteria developed in cooperation with adjoining agencies.

130 Purpose

The purpose of this study is to prepare a Design Concept Report and long-range implementation plan for the described section of I-10 and fundable projects for inclusion in future ADOT Five-Year Highway Construction Programs, while conducting public involvement activities to assure local and agency concurrence with the proposed long-range plan. This plan and concept will include environmental evaluation of alternatives and preparation of an environmental document (NEPA) with a determination of any impacts and mitigation for a preferred action. This project will also identify and evaluate any requirements for Joint Project Agreements between the State of Arizona and local jurisdictions prior to final design.

140 Construction Cost

The Transportation Board has not funded the long-term development of this I-10 project limit. The Consultant shall provide cost estimates for the Design Concept Report and the Implementation Plan in an acceptable format that can be utilized for programming, scoping, and preliminary engineering purposes.

150 Organization

The Arizona Department of Transportation (ADOT) utilizes design consultants to perform a variety of engineering services. This Scope defines the responsibilities of ADOT and the Consultant and the work to be performed.

160 Length of Services

The length of service for Phase I shall be 540 calendar days from notice to proceed, including all ADOT reviews is anticipated for this study project. The length of service shall be based on the consultant's proposed schedule as approved by the Predesign Project Manager.

170 Project Schedule

The Consultant shall provide a schedule of major project milestones, based on an estimated date of notice to proceed 90 calendar days after the proposal submittal date. The Consultant shall submit an initial schedule within 10 calendar days of actual "notice to proceed".

The Consultant shall submit updates to the project schedule at intervals that are acceptable to the Predesign Project Manager. The updates shall include project detail activities and the respective dates in a bar chart or other approved format and a schedule of major project milestones concurrent with monthly invoices. If an activity or milestone falls 30 calendar days or more behind the approved schedule, a revised schedule shall be prepared within 15 calendar days showing steps to be taken to complete the work on time.

172 Progress Meetings

The Consultant shall arrange and attend monthly progress meetings with the Predesign Project Manager. The location of the progress meetings should alternate between Phoenix and Tucson. Progress meetings via videoconference with Tucson District can also be conducted from ADOT Green Room. Progress meetings will be held in addition to other project meetings and will be conducted to address topics relating to the Consultant's project status and progress of the study contract. The Consultant shall produce and distribute meeting minutes within two weeks of meeting date.

180 Responsibility Chart

Appendix B, is a table indicating the division of responsibilities between the Consultant, ADOT, and others. This table is intended as a "checklist." In the event of a conflict, the written scope of work shall take precedence.

190 Local, State, and Federal Permits

The Consultant shall determine the need to obtain any federal, state, and local permits to conduct this study and shall so advise ADOT no later than 60 days from the notice to proceed. The Consultant, in coordination with ADOT, shall obtain temporary entry documents for entry to each parcel for any or all of the following activities: archaeological surveys, geotechnical investigations, and location survey work.

200 DESIGN REFERENCES

Design references developed, adopted, and published by ADOT and other agencies for use in design are listed in the ADOT Project Development Process Manual, ADOT Roadway Design Guidelines, ADOT Bridge Practice Guidelines, and the ADOT/USFS Guidelines for Highways on National Forest Lands (as applicable). The Consultant is advised that while possession of these documents may not be necessary to successfully complete the project, the Consultant is responsible for developing the project using applicable documents, current revisions to standards and guidelines, and all other applicable supplements. The Consultant is responsible to ensure the project is developed in accordance with federal, state, and local regulations, statues, policies, procedures, and guidelines. The Consultant shall consult with the ADOT technical sections and the Engineering Records Section for current approved references.

210 AASHTO Publications

ADOT references and publications shall control the work and any necessary supplementation should be provided by appropriate AASHTO and/or FHWA references. "A Policy on Geometric Design of Highways and Streets" shall be used in preparation of the AASHTO Controlling Design Criteria Report.

300 DESIGN CRITERIA

The project shall incorporate design concepts in accordance with the ADOT Project Development Process Manual, ADOT Roadway Design Guidelines, ADOT Bridge Practice Guidelines, the ADOT/USFS Guidelines for Highways on National Forest Lands (where applicable), and the information presented in this section. The design criteria may be supplemented by Project Design Memorandums provided by ADOT during the course of the project.

301 Supplemental Design Criteria

Design Year - 2040

Pavement Design Life - 20 years

Number of Traffic Lanes - Evaluate and recommend.

Median Width - Evaluate and recommend

400 SCOPING WORK PERFORMED BY CONSULTANT

The first phase consists of an Environmental Document and an Engineering Document developed to Plans Development Stage I. The second phase consists of developing the selected alternate to the Plans Development Stage II. Phase I shall be completed within 18 months of the Notice to Proceed (NTP). Phase 2 shall be completed within 9 months of the NTP.

The work shall conform to the standards, criteria, and requirements of this Scope of Work, including Appendix C.

The work performed for this DCR study shall include but is not limited to the following:

A. Initial Design Concept Report:

The Consultant will present the proposed design criteria, any alternatives (either new or as previously scoped), typical sections, etc. within the study limits for review and approval by ADOT. The Consultant's recommendations will be supported by their own research, identified environmental issues, site visit(s), community input, initial AASHTO analysis, initial drainage study, design criteria, initial traffic analysis, utility and right-of-way information of record, etc.

The alternatives developed and approved for further study shall be expanded upon, incorporating any comments from team members. Each subject shall be addressed in sufficient detail to clearly document the design concepts, and justify the recommendations and the alternative considerations. Coordination with adjacent landowners and local jurisdictions shall be an important part of fulfilling the requirements of the study. Selection of the recommended alternative shall be consistent with and supported by the environmental documentation.

An Initial Design Concept Report, with sufficient depth to explain the design criteria, available alternatives will be submitted to ADOT within nine (9) months of the NTP.

Agency and Public Scoping Meetings will be held in the project vicinity to explain the project and solicit comments from the public and interested organizations on the relevant issues in the corridor and possible alternatives under consideration. These meetings will be documented in the Initial Design Concept Report.

A Public Information Meeting(s) will be held in the project vicinity to present the project alternatives and solicit comments from the public and interested organizations.

B. Draft Environmental Document

The Consultant shall prepare a draft environmental document (NEPA) concurrent with the preparation of the Initial Design Concept Report. This document will describe the impacts, if any, of the recommended action and the necessary mitigation measures. The consultant shall coordinate with Environmental Planning Group (EPG) throughout the environmental compliance process and EPG will provide the final review-approval for ADOT on all environmental documentation and procedures. See Appendix C for additional information.

C. Final Design Concept Report:

The Consultant will respond to written comments from the review of the Initial Design Concept Report by issuing a Summary of Comments. The Consultant shall submit the Final Design Concept Report, sealed by an Arizona Registered Professional Engineer, at the completion of this study. The reports shall include refinements of the materials developed since the Initial Design Concept Report and revisions resulting from the project comment process. Itemized estimates shall be done by using ADOT's Estimated Engineering Construction Cost program called, E2C2. The Final Design Concept Report will cover up to 30% (Stage II) design.

D. Final Environmental Document:

The Consultant shall prepare a final environmental document concurrent with the preparation of the Final Design Concept Report. This document will incorporate a description of the public involvement process and the responses to the comments received, along with discussion of changes to the draft environmental documentation. See Appendix C for additional information.

E. Corridor Implementation Plan (If Applicable):

The Corridor Implementation Plan (CIP) shall be included in the Design Concept Report. The CIP shall define the individual sequential steps necessary to develop the ultimate corridor goals and preferred alternative. The CIP will be prepared for the preferred alternative only. The CIP shall include interim construction and timing measures that will address specific problem areas discovered during the Study, extend the useful life of the existing facility before major reconstruction, and will result in a phased implementation of the ultimate design concept with a minimum amount of "throw-away". The report will also address cost-effective implementation that will discuss issues that must be resolved or revisited during design and prior to construction, such as environmental clearance, right-of-way acquisition, and joint project agreement opportunities for improvements in communities. The CIP will present and discuss construction cost estimates for each proposed project, which can be recommended for programming. The study team will document the proposed order of construction along with any information, such as forecast traffic volumes, developed to provide guidance as to when certain phases may be needed. The Assistant State Engineer, Roadway Group, will select the preferred implementation strategy. The Corridor Implementation Plan will be used as a guide for programming all projects in the corridor.

F. Structures:

The Consultant shall determine the need for new or reconstructed structures on the project including all impacts to traffic interchanges and crossroad structures. The consultant shall be fully knowledgeable of bridge types and structural requirements for railroads, traffic interchanges, water crossings, and walls. The Consultant shall recommend alternative structures and superstructure depths to the extent necessary for development of roadway concepts. Identifying the need for new or replaced structures is required for preliminary cost comparisons and is part of the study. The Consultant shall follow ADOT Bridge Practice Guidelines in developing concepts for bridges and structures including wildlife crossings. During Phase 1 the DCR will cover up to Stage I (15%) design, therefore a Preliminary Structure Selection Report Stage I (15%) is required. A Final Structure Selection Report (30%) will be required with Phase II during development of Plans Development Stege II. The Consultant may also be required to prepare the Preliminary Bridge Hydraulics Report (15%) for any National Bridge Inventory (NBI) structures.

410 Public Information Meetings and Public Meetings

ADOT Communication and Community Partnerships Office will lead the Public Involvement Process. Depending on the project's development stage, CCP will work with the appropriate ADOT division to determine the level of communication services for the project and to identify the appropriate Public Involvement, Government Relations and Public Relations Consortium. CCP will assign and manage the Public Involvement, Government Relations and Public Relations Consortium and will establish an internal multidiscipline Communication Coordination Team to provide guidance to the Consortium. CCP Consortium will work with the ADOT Environmental Planning Group on projects that require NEPA compliance.

The CCP Consortium will be available to provide a wide range of services including preparation for meetings, presentations at the request of ADOT and responses to verbal and written questions from the general public. The purpose of ADOT's public outreach efforts is to work collaboratively with communities interested with ADOT projects.

The consultant shall be available to attend meetings, provide support in preparation of meetings, or make presentations at the request of ADOT and assist with responses to verbal and written questions from the general public. The purpose of such meetings will be to request public input, inform the public of projects, and answer questions regarding the scope, details and anticipated project schedule. The Consultant shall assist ADOT & CCP Consortium for the review of graphics, handout materials, and minutes of meetings, audiovisual displays and similar materials for such meetings. All such material shall prominently display the ADOT logo.

420 Data Collection

The Consultant shall, as required, gather and research existing "as-built" drawings, records, and all planning and development documents related to the project area.

430 Cost Estimates

The Consultant shall prepare construction cost estimates for each alternative. Cost estimate accuracy shall be commensurate with the design effort and shall include appropriate contingency factors as established by ADOT. The basis of the estimate shall be ADOT's most current cost information. The Consultant shall request that ADOT assist in the estimation of the right-of-way costs (where applicable). The cost of the proposed right-of-way shall be included in the study. The accuracy of the right-of-way requirements shall be commensurate with the study/design effort.

470 Traffic Analysis

The Consultant shall prepare a Final Traffic Analysis Report supporting the design concepts. Design Year traffic capacity needs will be evaluated as well as interim year analysis as needed to support development of the Implementation Plan. The Pima Association of Government (PAG) traffic model will be utilized. ADOT Traffic or local agencies may provide traffic data. The Consultant will determine if additional data is required and how it will be collected.

480 Surveys and Mapping

The Consultant shall review survey and mapping data provided by ADOT and/or available from PAG. ADOT will prepare the mapping on this project to be used in Phase I and Phase II. Mapping limits on cross roads shall be sufficient to capture logical termini based upon profile touchdown points and local road connectivity. The mapping limits should be from right-of-way to right-of-way and extends out 500' for pipes larger than 42" or 1000' for structures with an opening larger than 100 square feet. The mapping should include all cultural features, an alignment files, edge of pavement shots, an orthophoto, and a DTM surface. If the data is not sufficient for use with this project, the consultant shall include in the technical proposal the costs associated with obtaining adequate data. If the Consultant includes this cost, they shall also include a statement that documents the inadequacies of the ADOT and/or PAG data. Surveys shall meet the technical requirements of ADOT and the Arizona State Board of Technical Registration. An ADOT District permit shall be required before beginning fieldwork. A traffic control plan may also be required.

490 Freeway Management System

The Consultant shall identify all Freeway Management System (FMS) elements including Variable Message Signs (VMS), loop detectors, conduit and pullboxes, etc. within and approaching the project limits to determine potential conflicts and relocations.

495 Utilities and Railroads

UPPR leases their land to various fiber optic and petroleum pipeline utility companies. UPPR will require extensive coordination and plan submittals/reviews starting with the final DCR and 30% submittal. UPPR will also cost share in grade separating Ina Road and Ruthrauff Road.

The Consultant shall identify all utilities within the project limits to determine potential conflicts and relocations. The Consultant shall establish contact with utility and railroad companies to obtain all applicable facility location mapping.

500 MANAGEMENT CONSULTANT SERVICES (Not Applicable)

600 POST-DESIGN SERVICES (Not Applicable)

700 MATERIALS FURNISHED BY ADOT

ADOT will provide the following information if available to the Consultant. The Consultant shall review the availability of materials from ADOT before submitting a fee proposal for the project. As-Built drawings, plans and records and Accident Reports and Data may not be completely available or accurate in contents. It is the consultant's responsibility to determine the availability and applicability of the existing ADOT data.

710 Surveys and Mapping

ADOT will make available the following materials:

State Plane Coordinate Grid Adjustment Factor(s)

AZ State Plane coordinates for control points.

Bench Marks and other necessary points

Survey Records

720 Materials Investigation

ADOT will make available historical data on soils and existing pavement information and proposed pavement sections.

730 Record Documents

ADOT will make available the following ADOT drawings:

Available "as built" plans of existing conditions

Available right-of-way plans of existing conditions

740 Traffic Data

ADOT will make available the following design traffic data:

Traffic Counts and Projection Data

K, D, and T factors

750 Miscellaneous

ADOT will make available the following:

Accident history

Bridge records

Access to E2C2

800 SECTION DESIGN COORDINATION (Not Applicable)

900 (SECTION NON-EXISTENT)

1000 CONTRACT ADMINISTRATION

1010 Arizona Department of Transportation

ADOT's Predesign Project Manager will:

A. Conduct ongoing reviews of the Consultant's progress in performing the work and furnish technical comments in a timely manner.

B. Review the Consultant's billings.

C. Review and evaluate the Consultant's requests for extension of time and supplemental agreements.

D. Review and comment on correspondence with the public and agencies prior to the Consultant's mailing of any correspondence.

E. Provide a focal-point contact for questions, requests, and submittals.

1020 Consultant

The Consultant shall:

A. Establish, furnish and maintain suitable office facilities to serve as the project office for the duration of the project in the location specified in the Consultant's technical proposal.

B. Maintain an adequate staff of qualified support personnel to perform the work necessary to complete the project.

C. Establish internal accounting methods and procedures for documenting and monitoring project costs and scheduling the project.

D. Establish and maintain contract administration procedures, which will include supplemental agreements, time extensions and subcontracts.

The Consultant has total responsibility for the accuracy and completeness of the contract documents and related design prepared under this project and shall check all such material accordingly. The documents will be reviewed by ADOT for conformity with ADOT procedures and the terms of the contract. Review by ADOT does not include detailed review or checking of design of major components and related details or the accuracy with which such designs are depicted. The responsibility for accuracy and completeness of such items remains solely that of the Consultant.

1021 Project Control

The Consultant shall provide data, in the format specified by ADOT, upon request to monitor costs, personnel usage, and to report progress.
The project control system may include features to:

A. Determine and highlight critical path work as work progresses.

B. Identify progress against schedule for each identified work item.

C. Establish completion dates for milestones and activities.

D. Highlight rescheduled work in any area which is out of the required sequence.

E. Determine an area of work that will require more resources than originally allocated.

F. Forecast future conflicts in any area.

G. Provide estimates of time, personnel usage, and dollars required at the lowest work element tracked, based upon current expenditures versus schedule

H. Provide the capability of random inquiry concerning the status of any work element in terms of schedule, personnel usage, and dollars.

1022 Subcontract Services

Due to the nature and scope of the required services, it may be necessary for the Consultant to subcontract portions of the work. The subcontracting firms must be approved in writing prior to initiation of any work. The volume of work performed by the subcontractors shall not exceed forty- nine percent (49%) of the total contract value.

1023 Project-Related Correspondence

The Consultant shall furnish written documentation of communications between the Consultant and any party pertaining specifically to this project to ADOT for their records within one (1) week of the communication. The Consultant shall prepare the minutes of all meetings pertaining to this project within one (1) week of the meeting.

1024 Quality Control

The Consultant has total responsibility for the accuracy and completeness of the plans and related design prepared under this contract and shall check all such material accordingly. The Consultant shall have a quality control plan in effect during the entire time work is being performed under this contract. The plan shall establish a process whereby plans and calculations and documents submitted for review shall be clearly marked as being fully checked by a qualified individual other than the originator. Non-compliance will be sufficient cause for rejection of submittal. Periodic Quality Control audits may be performed by the Predesign Project Manager.

The Consultant shall submit the quality control plan to ADOT for approval within fifteen (15) working days of receipt of written Notice to Proceed. The plan should comply with the requirements of Section 1025. The plan shall address as a minimum: checking procedures, sub-consultant submittals, training of employees in quality requirements, and methods of monitoring and documenting quality control activities.

1025 Quality Control (QC) Plan Requirements

Identification of key personnel and definition of specific responsibilities.

A technical review process.

Checking procedures.

A program to train employees in the quality control requirements.

A process to monitor and document quality control activities.

The Consultant's quality control plan should identify the following:

A. The plan shall identify by name the specific project personnel and their individual responsibilities relative to the project and the Quality Control process. The plan shall include a detailed outline of the checking procedures and include a program to train employees in the quality control requirements and the documentation and monitoring of the quality control process.

B. Checking reviews verify the accuracy of the documents. Technical reviews will verify the overall design concepts of the project. As a minimum effort, the technical review should do the following:

A. Determine the adequacy of the design process to achieve the desired goals.

B. Evaluate the general selection and sizing of materials and equipment.

C. Determine if all viable alternatives have been considered.

D. Determine the practicality of the design concept.

E. Determine if legal and physical restraints were considered.

F. Determine if the design theory, concepts, and project layout are logical.

G. Determine applicability of computer programs used.

H. Determine if the technical specifications are sufficiently comprehensive.

I. Determine the constructability of the selected design.

The checking process should assure that all documents produced, including, but not limited to, plans, reports, calculations, estimates, and schedules, are thoroughly checked by an individual equally competent to the originator of the document to verify accuracy. The process should address resolution of conflict and assure agreement of computer programs and procedures for checking computer input and output. Checking shall not only confirm the accuracy of calculations, but shall include a thorough review of the proper use of Standard Drawings, Drafting Guide, Project Design Guidelines, and other manuals and documents referenced under Section 200.

The training program should provide an opportunity for all project staff to become familiar with the design and the quality control process that will be required on this project. Particular attention should be directed to defining specific individual responsibilities and assuring their understanding.

A method for monitoring and documenting the QC processes is essential to achieve the desired results. This process should easily and quickly verify the entire Quality Control process. A checklist should be developed for quick reference and periodic review by the Project Principal and ADOT.

1026 Consultant Personnel

The Consultant's work shall be performed and directed by the assigned key personnel as identified in the technical and fee proposal. Any changes in the Consultant's key personnel assignments or the Consultant's assigned Project Principal or Project Manager shall be subject to review and approval by the Predesign Project Manager.

1030 Acceptability of the Work

The plans, design concept, calculations, reports and other documents furnished under this Scope of Work shall conform to the "standards-of-the industry" quality. The criteria for acceptance shall be a product of neat appearance, well organized, accurate and complete, technically and grammatically correct, checked in accordance with the approved Quality Control program, and having the originator and checker identified.

1040 Concept Design Study Documentation

If requested, the Consultant shall submit their files of design notes, sketches, worksheets, and computations to document the design conclusions reached during the development of the contract documents to ADOT for review.

The design notes and computations shall be archived on 8-1/2" x 11" computation sheets, appropriately titled, numbered, dated, indexed and signed by the designer and checker. Computer output forms and other oversized sheets shall be folded or legibly reduced to 8-1/2" x 11" size. The data shall be bound in hard-back folders for submittal to ADOT.

At the project completion, a final set of the design notes and computations, sealed by a Professional Engineer, registered in the State of Arizona, shall be submitted with the record set of plans and tracings.

Design notes and calculations shall include, but are not necessarily limited to, the following data:

A. Field survey notes and computations.

B. Design criteria used for the project.

C. Geometric design calculations for horizontal alignment.

D. Vertical geometry calculations.

E. Right-of-way calculations (including easements).

F. Drainage computations and reports.

G. Bridge and culvert selection evaluation documentation to include hydrology and hydraulic computations and reports and Scour Evaluation Technical memorandums for existing cross drainage structures.

H. Earthwork calculations not included in the quantity computation booklet.

I. Calculations showing cost comparisons of various alternatives considered.

J. Calculations of quantities.

K. Documentation of meetings, telephone conversations, and site visits.

1045 Computer-Aided Drafting and Design (CADD)

The use of a CADD system for this project is required.

All submittals, including drawings, exhibits, and storage media shall be prepared using Bentley MicroStation V8 software.

The consultant shall ensure that all submitted files match the final sheets and that each file can stand independently of any other. (Reference files are not permitted in the final submittals.)

Submittals shall conform to the following requirements of current ADOT CADD Standards, Volumes 1, 2, 3 and 4:

General Specifications

CADD Data Acceptance and Release Rules

All drafting requirements, including line weights and styles, symbols, lettering and CADD levels

Exceptions to the CADD Standards for this project are:

All existing culverts, cattle guards, and luminaries shall have a line code of 1 and a line weight of 2.

The Consultant shall submit to ADOT all CADD files, including the base map used to prepare the plans and profiles in this project at the end of the project completion. All file deliverables shall conform to the ADOT CADD Standards.

1050 Value Analysis

The design and project development performed under this contract will be subject to value analysis. For the purposes of this Scope of Work, "Value Analysis" consists of those tasks performed by a Value Analysis Team in accordance with the Value Analysis Program Manual which is available from the ADOT Special Programs Section. Any studies or other activities of a similar nature, shall not be referred to as "Value Analysis."

Projects estimated to cost in excess of $25 million shall be value analyzed at either the pre-final Location/Design Concept Report or Initial Design stages. Projects estimated to cost in excess of $10 million may be value analyzed as recommended by the Consultant or by ADOT. The Consultant is encouraged to recommend value analysis for ADOT standards and specifications, as well as for this project. All studies must be approved in advance by the Deputy State Engineer, Engineering, as noted in the above-referenced Policy and Procedures.

1051 Value Analysis Team

The value study may be performed by a Value Analysis Team consisting of ADOT personnel, personnel from other consultants or other outside agencies, or a combination of these sources. The Consultant shall cooperate fully with the Value Analysis Team, providing necessary background information for analysis, although not normally participating in the formal study.

1052 Consultant's Responsibilities

The Consultant, upon notification of the approval of a value study, shall compile appropriate data for analysis and make a presentation to the Value Analysis Team, in accordance with the Study Plan prepared by the Value Engineer. The Consultant shall communicate and cooperate fully with the Value Engineer, the Predesign Project Manager, and the Value Analysis Team.

It is expected that the elements necessary for a value study can be assembled and delivered by the consultant with minimum expenditure of effort and time under its normal design procedures in approximately four (4) working days. The Consultant will be allowed to budget 32 work-hours for data compilation, the presentation, and study response, if appropriate. The Consultant shall report the hours expended and estimated costs of labor and materials to the ADOT Value Engineer for cost tracking and value analysis program evaluation purposes.

In accordance with the Program Manual, the findings and recommendations of the value study will be forwarded to the ADOT Group Manager(s) for review. If the Group Manager(s) disagree(s) with some or all of the recommendations, the Deputy State Engineer will make a final determination. The Consultant shall implement the approved findings and recommendations of the value study. If significant redesign is necessary, the additional work will be added to the Scope of Work by Contract Modification.

1060 Reviews and Submittals

Review and coordination of the Consultant's work by ADOT will continue through the project development process. The Consultant may continue design efforts while design submittals are being reviewed by ADOT.

Doing so however in no way relieves the Consultant of the responsibility to incorporate review comments into the design, nor does it entitle the Consultant to any additional fees as a result of making changes due to review comments.

The Consultant shall submit the items required for review as outlined in this Scope of Work. Concurrent with each submittal, the Consultant shall submit to ADOT a Statement of Verification of computer programs. The Consultant shall also submit a certification of compliance accompanied by evidence (e.g. check prints, sign off sheets, etc.) documenting compliance with the Consultant's Quality Control program (reference Section 1024 of this Scope of Work). The certificate shall specifically address the items included and the submittal phase.

Copies of all documents delivered to ADOT by the Consultant shall be accompanied by a transmittal letter and distribution list with complete mailing addresses. All deliveries shall be by hand or overnight courier when necessary, please consult with Predesign Project Manager before using overnight courier service. All plans shall be half-size black and white sheets. The Consultant shall submit any working documents electronically in its original formats (Word, Excel, etc) as required by the Project Manager, in addition to the bound PDF copy of the documents.

At the conclusion of the project, the Consultant shall submit to Predesign Project Manager, project folders along with all reports and studies completed in their original electronic formats (Word, Excel, etc) in addition to bound hard copies as well as all Microstation and InRoads files, including base map used to create plans and profiles. Copies of all computer models or programs used in this project shall also be submitted. An electronic submittal that includes all final documents with an appropriate index and brief descriptions of any folders, sub-folders, and files created therein must also be submitted.

PLAN DEVELOPMENT STAGE II

PHASE II
SCOPE OF WORK

SECTION 100 – GENERAL INFORMATION

NOTE: This scope of work is presented in presented in two parts. The Phase II Scope of Work is contained in this section. It includes information specific to this project.

The section Dictionary of Standardized Work Tasks is presented as part of the Phase II scope of work. It includes information that is common to consultant design contracts. The description of work tasks is presented in Dictionary of Standardized Work Tasks. Not all the work tasks described are necessary on every project.

Phase II works will consist of completing the development of plans from the Stage I level to the Stage II level. Stage I plan development was completed in the Phase I portion of this project with the completion of the engineering document and the environmental document.

Phase II work will be added to the Phase I work by a contract modification after successful completion of Phase I.

Section 110 Coordination with Regional Transportation Authority (RTA)

The Regional Transportation Authority, which became effective as an entity in August 2004, is governed by a nine-member board. Board members include representatives from the cities of South Tucson and Tucson, Pima County, the towns of Marana, Oro Valley Sahuarita, the Pascua Yaqui Tribe, the Tohono O'odham Nation and the Arizona State Transportation Board. The RTA was created to develop a regional plan through regional cooperation.

This projects included in the RTA plan primarily focus on existing needs in the regional transportation system.

There are three proposed road improvement projects in the RTA Transportation Plan (RTATP) which are located within the limits of this ADOT project. Road improvement projects 6/35, 8/35 and 9/35 are included the RTP "Project List" See Appendix D. The first priority for the development of the Stage II plans will be RTATP project 6/35; Railroad overpass at Ina Road, east of I - 10 since it is a 2nd period project anticipated for construction in the FY 2012 thru FY 2016 time frame.

Pima County through PAG and the RTA is beginning to process of developing a DCR for Silverbell Road from Ina Road to Grant Road. This will include a crossing of the Santa Cruz and Rillito in conjunction with the RTA sponsored Sunset TI improvement. Therefore, proper coordination with local agencies, UPRR, and other utilities are extremely important to make this a successful project.

Close coordination with RTA representatives will be necessary development of the Stage II plans. Further classification of project cost sharing; jurisdictional responsibility and packaging of future construction projects will be undertaken.

120 Stage II Plan Developments

The Consultant shall

A. Prepare project development process through Stage II.

B. Develop design segments.

C. Identify and resolve segment issues prior to segment designer selection. Such issues will include utility relocations, right-or-way obstacles, environmental/cultural concerns and local governmental /developer enhancements.

D. Provide special studies, reports and plans that will reduce the segment design duration.

E. Prepare Scopes of Work for segment design contracts.

F. Provide mapping of segment alignments for future segment designers as needed.

G. Develop schedules for each project.

H. Develop construction segments and construction project sequencing with the intent to clear major utility obstructions prior to advertisement.

I. Develop construction segments and construction project sequencing with the intent to economize system costs by developing an earthwork management plan.

J. Report regularly on issues affecting design, R/W acquisition and construction budgets and schedules with respect to the Master Schedule.

K. Maintain an appropriately staffed local office during the length of the contract. Coordination with ADOT technical groups and outside agencies. These include Roadway/Drainage, Materials/Geotechnical, Environmental/Archaeological, Utilities/Railroad, Traffic, Right-of-Way, Structures/Hydrology, Location/Mapping, Roadside and Construction/District. Also coordination with county agencies, local governments, Indian communities and public utilities shall be required. Federal agency coordination may involve ADOT Administration, ADOT Finance, Pima Association of Government (PAG) staff and transit agencies.

130 Purpose

The purpose of Phase II is to complete plan development for this project through Stage II.

140 Construction Cost

The Transportation Board has not funded the long-term development of this project. The Consultant shall provide cost estimates for the future separate design segments and the Implementation Plan in an acceptable format that can be utilized for programming, scoping, and preliminary engineering purposes. All cost estimates shall be in the ADOT E2C2 format.

150 Organization

The Arizona Department of Transportation (ADOT) utilizes design Consultants to perform a variety of engineering services. This scope defines the responsibilities of ADOT and the Consultant and the work to be performed.

160 Length of Services

The length of service for Phase II shall be 270 calendar days from notice to proceed, including all ADOT reviews.

170 Program Schedule

The consultant shall develop and maintain a schedule design through Stage II, necessary to meet successful delivery o the program. The Consultant shall submit a monthly report containing update project schedules and major project milestones by the tenth of each month in a format approved by ADOT.

171 Project Schedule

The consultant shall provide a schedule compatible to ADOT's Primavera scheduling system. It shall include the 20 milestones/flags requested by ADOT. An initial schedule shall be submitted within ten (10) calendar days of a project or corridor assignment. The schedule submitted shall be customized to reflect the exact needs of the project. Work elements for which ADOT or segment designers have responsibility shall be included in the schedule. The consultant shall submit a monthly report containing updated project schedules and major project milestones by the first of each month in a format approved by ADOT.

172 Monthly Progress Meetings

The Consult shall arrange and conduct regularly scheduled monthly progress meeting with the Project Manager and all other designated persons. The Consult shall record meeting notes of progress meetings and shall distribute them o the team within five (5) calendar days of the meeting, upon approval by the Project Manager.

180 Responsibility Chart

Appendix E is a chart indicating the division of responsibilities between the consultant, ADOT and other stakeholders. This chart is intended as a "checklist", in the event of conflict the written Scope of Work shall take precedence.

SECTION 200 – DESIGN REFERENCES

Design references developed and published by ADOT and other agencies and adopted by ADOT for use in the design of this project are listed in the ADOT Project Development Process Manual, ADOT Landscape Design Guideline, ADOT Erosion and Pollution Control Manual for Highway Design and Construction, and the ADOT Roadway Design Guidelines. The Consultant is advised that while possession of all of these documents is not necessary to successfully complete the project, the Consultant is responsible for designing in accordance with the applicable document and current revisions and supplements thereto.

All reports, plans and estimates will be prepared in accordance with the appropriate ADOT Standard Plans and Specifications.

210 MICELLANEOUS PLANS, REPORTS AND STUDIES (AS APPLICABLE)

A. For Existing Freeways (if the following exist)

1) Record Drawings

2) Project Plans and Cross Sections

3) Noise Assessment Report

4) Drainage Report

5) Utility Report

6) Traffic Report

7) Geotechnical Report

220 AASHTO Publications

ADOT reference and publications shall control the work, and any necessary supplementation should be provided by appropriate AASHTO and/or FHWA references.

SECTION 300 – DESIGN CRITERIA

The projects will be designed in English units. Design of the projects will be guided by the design criteria identified in the design standards and guidelines referenced in Section 200.

The Consultant shall provide the basic design criteria and prepare the Scopes of Work for the segment design contracts. The consultant shall enter appropriate reference from Section 200.

301 Supplemental Design Criteria

The design criteria and the Project Design Guidelines may be supplemented by Project Design Memorandums provided by ADOT during the course of the project.

SECTION 400 – WORK PERFORMED BY CONSULTANT

The Consultant shall be responsible for providing the engineering services required to accomplish the work products identified in the Project Scope of Work. The services may include the tasks of data preparation, data interpretation, and document preparation including scoping documents, reports, corridor management plans, contract plans, special provisions and construction estimates. The Consultant shall perform all work in accordance with the most current policies and procedures, unless otherwise directed.

The Consultant shall review all material pertaining to it's scope to gain and understanding and to identify controls, prior agreements, etc. that may affect subsequent development activities. The Consultant shall assemble a list of significant design issues and proposed resolutions. The Consultant shall coordinate through ADOT with the appropriate cities during all phases of work.

401 Design Features

The Consultant shall be responsible for the development of design segments, resolution of segment issues, and development of construction segments through Stage II.

404 Plan Development

The Consultant shall develop/review the design concepts, finalize design concepts and develop a plan for each project included in this contract. The plan shall include initial design plans, a drainage plan, a utility relocation plan, identification of right-of-way required, a traffic capacity analysis of all roadways and interchanges within the project, a traffic control plan, a construction staging plan and a master design and construction schedule. Value engineering techniques shall be employed in the plan development process.

406 Segment Design Coordination

The Consultant shall determine the limits of future design segments, prepare a pre-initial Primavera design schedule for each design segment and develop the Scope of Work for each design segment for review and approval by ADOT.

410 Surveys and Mapping

The Consultant shall provide final base mapping by producing field surveys for location of existing right-of-way, topographic surveys, drainage surveys and utility locations. Any field surveys required shall be suitable for contract documents preparation and meet the technical requirements of ADOT and the State Board of Technical Registration.

415 Materials Design

The Consultant shall review the Materials Design Memorandum Report prepared by ADOT Materials Group. The Final Materials Design Report will be prepared by ADOT Materials Group and reviewed by the Consultants.

416 Geotechnical Investigation

The Consultant shall prepare the Final Geotechnical Report and a separate Final Foundation Design report to establish guidelines and criteria based on sampling and testing, including project specific construction specifications for roadway and foundation construction. Geotechnical work shall be performed by a consultant with local geotechnical experience. The Final Geotechnical Report shall identify any known or potential hazardous waste sites or other manmade fills in the corridor. A Geotechnical Report will be prepared which summarizes the results of all the data and presents recommendations for earthwork factors (shrink and swell), cut and fill slope rates/stability, geologic unit locations (rock blasting, etc.), and suitability for embankment and/or aggregate.

ADOT will perform geotechnical field investigation.

The Consultant shall coordinate with representatives of the Statewide Project Management and Materials Section concerning the geotechnical investigation requirements for each project.

417 Earthwork

The Consultant shall attempt to achieve an approximate earthwork balance for the project consistent with good engineering practice based upon the type of material and with consideration given to environmental mitigation measures unless otherwise directed.

419 Pavement Design

The Consultant shall review the Final Pavement Design Summary and the Materials Design Memorandum prepared by ADOT Materials Group on this project.

430 Utilities and Railroads

The consultant shall obtain available utility mapping and identify utilities within the general project limits. The Consultant shall identify potential utility conflicts, suggested relocations, implementation timing and costs and incorporate these into a relocation plan. The utility relocation plan cost estimates and supportive information shall be summarized as par of the plan. This work shall include the preparation of detailed Utilities Reports which shall include a minimum proposed layout of private and public utilities to confine within the R/W needs for the project.

The Consultant shall conduct monthly coordination meetings with utility companies and agencies. The Consultant shall also coordinate with and inform the utility companies of the permits and licenses required by ADOT and other agencies necessary to complete the utility relocations.

Potholing may be added to this contract at a later date by contract modification.

440 Roadway Design

The Consultant shall prepare plans for all roadway elements and improvements, as well as detour construction and removal.

The Consultant product designs and drawings to facilitate the development of, but not limited to, drainage, utilities and R/W concepts. The horizontal and vertical alignments shall be developed to such refinement that horizontal and vertical clearances can be reasonably checked, drainage concepts resolved, utility conflicts identified and right-of-way requirements accurately estimated. Specific special studies shall include, but not necessarily be limited to:

- A detailed study of interchange layouts and crossroad widening to determine the most cost effective layouts in terms of right-of-way and construction costs.
- A detailed analysis of horizontal and vertical alignment refinements to minimize right-of-way, construction and operational costs.
- A detailed noise abatement study recommending type, location and height of required abatement structures.

The result of the design shall include but not necessarily be limited to:

- Typical roadway sections
- Plans and profiles
- Interchange plans and profiles
- Roadway cross sections

445 Bridge Design

446 Bridge Structure Selection Report

The Consultant shall submit a Final Bridge Structure Selection Report and a Final Bridge Hydraulics Report for new bridges and/or for renovation of existing bridges. The segment designer will be responsible for these reports.

447 Aesthetics

The Consultant shall formulate aesthetic treatment guidelines of structural element options in terms of cost effectiveness and corridor continuity, and make recommendations for each freeway corridor for the following:

- Bridge abutment and columns
- Retaining walls
- Noise walls
- Barriers
- Pedestrian overpasses
- Slope paving

450 Drainage Design

The Consultant shall prepare a comprehensive hydrology study and overall drainage concept plan. The plan shall include final sizing and location of detention basins, offsite collection culverts, channels and other major drainage structures as well as tentative onsite collection system layout, sizing and pumping requirements. The drainage concept plan shall be detailed in a Drainage Report. Alternatives shall be studied to minimize the right-of-way construction and operational cost of the drainage system. The Consultant shall coordinate with ADOT and local governments to investigate the potential for joint use drainage facilities to lower overall costs.

455 Landscape Architectural Design and Erosion Control

The Consultant shall locate new electric service drops and water connections for planned landscape irrigation systems. The Consultant shall incorporate into project plans pipe sleeves located to facilitate future placement of landscape irrigation lines across the freeway mainline, ramps, driveways, frontage roads and cross streets.

460 Traffic Engineering Design

The Consultant shall develop preliminary signing, marking, signal and lighting concepts and incorporate tem into the initial roadway design. The Preliminary traffic concepts shall identify type, tentative layout, space requirements and cost of facilities. The Consultant shall also develop a plan of traffic control for construction.

470 Right of Way

The Consultant shall determine the requirements for new right-of-way (R/W) and recommend an advanced acquisition program to ADOT. The R/W requirements shall be finalized prior to the Stage II design submittal. No revisions of additions to the R/W requirements will be allowed after the Stage II submittal without the approval of the ADOT project manager.

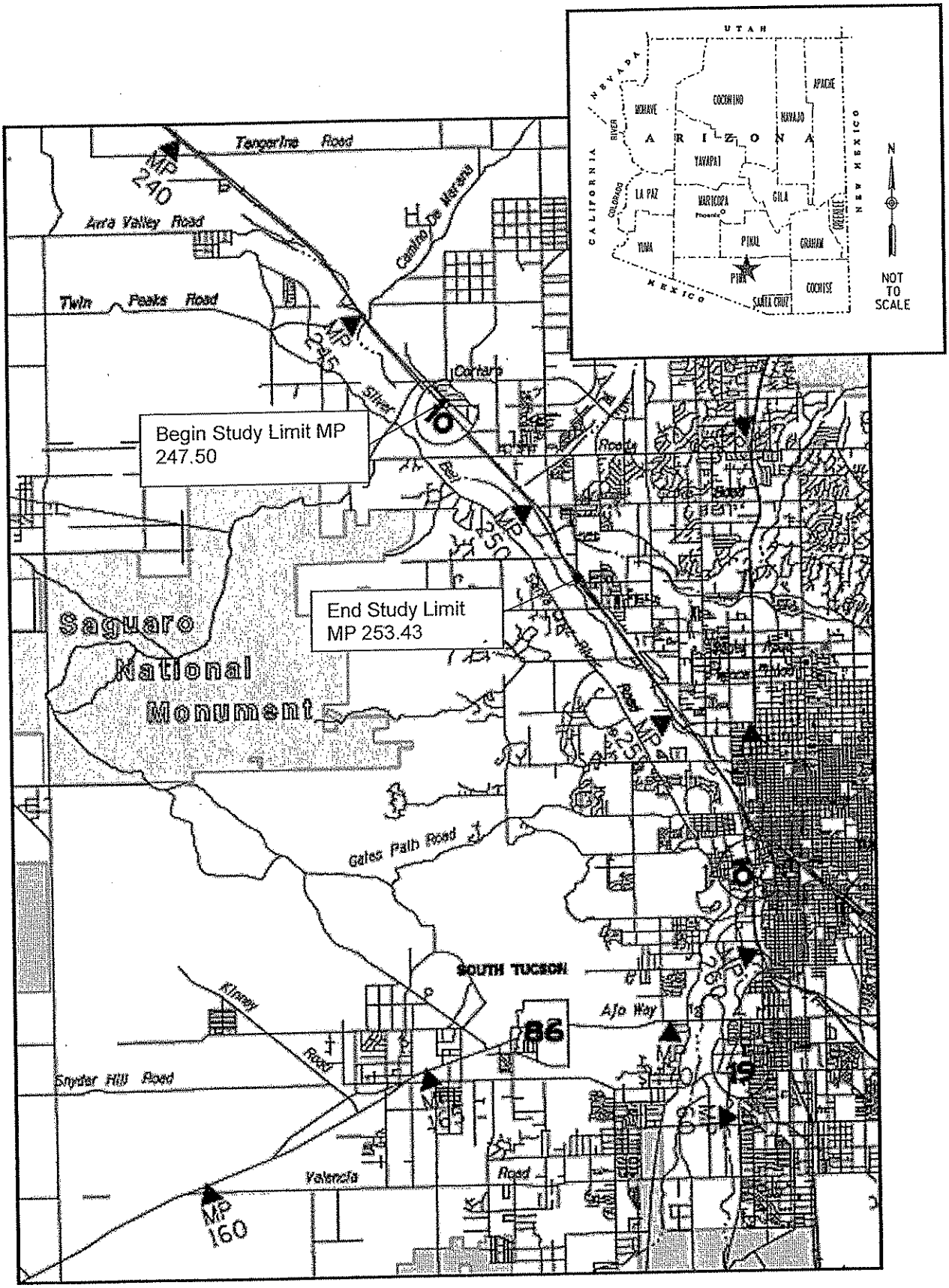
The R/W requirements shall identify properties together with definitive areas of take, estimated right-of-way costs and the relative priority with respect to construction sequencing requirements. ADOT will provide assistance in determining unit costs for right-of-way.

R/W will coordinate with the Survey team to assure the same survey factors and controls are utilized. R/W will initiate right-of-way survey, early in the preparation of Stage II plan development in order to finalize R/W requirements prior to the Stage II submittal.

480 Cost Estimates

The budgeted project costs associated with the RTATP are identified in the RTATP for Ina Road T.I, Sunset Road T.I, and Ruthrauff Road T.I. The Consultant shall immediately advise ADOT, in writing, if there is any reason to believe cost position associated with the RTATP cannot be constructed within the allocated budget. The Consultant shall identify options to maintain the project within budget, including revising criteria, or phasing changes. The Consultant shall maintain and update project cost estimates and shall coordinate cost sharing with the RTA.

APPENDIX A
LOCATION MAP



APPENDIX B
RESPONSIBILITY CHART

	ITEM	SCOPE SECTION	CONSULTANT	ADOT	OTHERS
A	**AERIAL MAPPING**	Apndx. C			
	1. Photogrammetric Control & Panels			X	
	2. Aerial (Color) Photography			X	
	3. Photogrammetric Compilation				
	a. Planimetric Map			X	
	b. Topographic Map			X	
	c. Digital Terrain Model			X	
	d. Orthophotos			X	
	e. Drainage Area Map			X	
	4. USGS Mapping			X	
B	**CONTROL SURVEYS**	Apndx. C			
	1. Horizontal			X	
	2. Vertical			X	
	3. Topographic Map			X	
	4. Utility Locations		X	X	
	5. Right-of-Way			X	
	6. Roadway Cross Sections		X	X	
	7. Drainage Cross Sections		X	X	
	8. Structures Surveys			X	
C	**ENVIRONMENTAL**	Apndx. C			
	1. Environmental Document		X		
	2. Air Quality Technical Report		X		
	3. Noise Analysis Technical Report		X		
	4. Cultural Resources Survey		X		
	5. Visual Impact Analysis		X		
	6. Biological Evaluation		X		
	7. Public Meetings/Hearing (CCP Consortium): CCP Public Involvement Consultant is responsible for scheduling meeting rooms preparing advertisements and flyers for the meeting, preparing handouts for the meeting, and preparing a meeting summary report.			X	
	a. Advertising (CCP Consortium)			X	
	b. Presentation Materials		X	X	
	c. Moderator (CCP Consortium)			X	
	d. Technical Questions		X	X	
	e. Transcript (CCP Consortium)			X	
	f. Responses to Public Comments		X	X	
	8. Hazardous Materials Survey		X		

	ITEM	SCOPE SECTION	CONSULTANT	ADOT	OTHERS
D	**MATERIALS INVESTIGATION**	N/A			
1.	Provide Soil Survey	N/A			
	a. Roadway			X	
	b. Lateral Ditches			X	
	c. Earthwork			X	
	d. Retention/Detention Ponds			X	
	e. Provide Bridge Foundation and Retaining/Sound Wall Foundation Investigations	N/A		X	
2.	Provide Testing and Analysis	N/A		X	
3.	Provide Final Geotechnical Investigation Report.	N/A	X		
4.	Provide Preliminary Bridge Foundation and Retaining/Sound Wall Foundation Report.	N/A	X		
E	**DESIGN TRAFFIC DATA**	Apndx. C			
1.	Gather Statistics				
	a. 2-Way ADT		X	X	
	b. Turning Movements		X		
	c. Cross Traffic		X		
2.	Prepare Traffic Data Sheets		X		
3.	Prepare Equivalent 18 Kips	N/A	N/A		
4.	Prepare Final Traffic Analysis Report		X		
5.	L.O.S. Analysis		X		
6.	Composite Traffic Control Device Plan	N/A	N/A		
F	**RIGHT-OF-WAY**	Apndx. C			
1.	Develop Requirements		X	X	
2.	Prepare Maps for R/W Report	N/A		X	
3.	Secure Title Search	N/A		X	
4.	Prepare R/W Surveys, R/W Plans, and Legal Descriptions	N/A		X	
5.	Prepare Transfer Documents	N/A		X	
6.	Provide Appraisals	N/A		X	
7.	Negotiate Right-of-Way	N/A		X	
8.	Condemnation Proceedings	N/A		X	
9.	Testify in Court	N/A		X	
10.	R/W Cost Estimates	N/A		X	
11.	Relocation Assistance	N/A		X	
12.	Property Management	N/A		X	
13.	Clearance Letter	N/A		X	

	ITEM	SCOPE SECTION	CONSULTANT	ADOT	OTHERS
G	**CONSTRUCTION PLANS**	N/A	X		
	1. Plot Design Survey	N/A	X		
	2. Roadway Plans Preparation	N/A	X		
	a. Roadway Cross Sections	N/A	X		
	b. Drainage Cross Sections	N/A	X		
	3. Drainage Design	N/A	X		
	4. Bridge Design	N/A	X		
	5. Roadway Lighting Plans	N/A	X		
	6 Traffic Signal Plans	N/A	X		
	7 Signing & Pavement Marking Plans	N/A	X		
	8 Utility Adjustment Plans	N/A	X		
	9 Maintenance of Traffic Plans	N/A	X		
	10 Landscape Architectural Design	N/A	X		
H	**RISK (ECONOMIC) ASSESSMENT**	N/A	N/A		
	1. Prepare Risk (Economic) Assessment	N/A	N/A		
I	**SECTION 404 PERMIT**	Apndx. C			
	1. Coordinate with Permitting Agencies		X	X	
	2. Prepare Permit Application				
	a. Forms		X		
	b. Sketches		X		
	c. Hydraulic Calculations		X		
	d. Supporting Documents		X		
	3. Recommendation should come from Consultant Permit Requirements, Nationwide or Individual.		X		
J	**UTILITY & RAILROAD**	Apndx. C			
	1. Utilities Identification		X		
	2. Submit Railroad Data		X		
	3. Conduct Utility Predesign Conference	N/A	N/A		
	4. Secure Utility Adjustment Plans	N/A	N/A		
	5. Secure Utility Relocation Schedule	N/A	N/A		
	6. Secure Utility Agreements	N/A	N/A		
	7. Process Relocation Schedule & Agreement	N/A	N/A		
	8. Clearance Letter	N/A	N/A		
	9. Prior Rights Information	N/A	N/A		
K	**COST ESTIMATES**	Apndx. C			
	1. Prepare Construction Cost Estimates		X		
	2. Prepare R/W Cost Estimates		X	X	
L	**REVIEWS AND SUBMITTALS**	1060 Apndx. C			
	1. All Reports and Submittals		X		

APPENDIX C

PROCEDURES FOR LOCATION / DESIGN CONCEPT STUDIES AND ENVIRONMENTAL STUDIES

GENERAL

Purpose

This document supplements the Project Scope of Work and outlines procedures required for Location/Design Concept Studies and Environmental Studies as applicable.

An attempt has been made to list the procedures in chronological order of occurrence, however, it is understood that many of the required procedures occur concurrently. In particular, procedures relating to development of the Location/Design Concept Report proceed concurrently with environmental studies.

It is also understood that Location/Design Concept Studies and Environmental Studies are "discovery processes" and that modifications to these procedures may be necessary during the development of the project. Such modifications will be made with the joint agreement of the Consultant and ADOT.

Policy

Location / Design Concept Studies and Environmental Studies shall be prepared in accordance with ADOT Highway Development Group Policy and Implementation Memorandum No. 89-5 and as outlined herein. Location/Design Concept Studies is used interchangeably in this Appendix C with Design Concept Studies (L/DCR and DCR).

Local, State and Federal Permits

The Consultant shall determine the need to obtain any federal, state, and local permits and shall so advise ADOT no later than 60 days from the notice to proceed. The Consultant shall be responsible for obtaining any required survey permits from the appropriate federal, state, or local agencies, and for obtaining any required rights of entry.

Temporary Entry Documents

The Consultant shall obtain temporary entry document for entry to each parcel for archaeological surveys, geotechnical investigations, and location survey work.

The Consultant shall notify ADOT of the need for any temporary entry documents no later than 60 days after the notice to proceed. ADOT will obtain the appropriate owner's signature. The Consultant may not enter any such property prior to approval and acceptance of the temporary entry documents by ADOT.

Surveys and Mapping

The Consultant shall review data provided by ADOT. Any field surveys required shall be suitable for contract documents preparation and meet the technical requirements of ADOT and the State Board of Technical Registration.

All surveys and mapping for projects utilizing existing roadway(s) shall be referenced directly to the existing as-built roadway centerline. The centerline shall be re-established in its original position by locating, marking,

staking and referencing the PC, PT, TS, SC, CS, ST, PI (if possible), and a minimum of fifty (50) feet station intervals along the curves and one hundred (100) feet station intervals on tangents. The use of offset baselines for re-establishing or defining the existing centerline is not permitted unless approved in advance by ADOT. The centerline stationing of the project shall be on ADOT's established field stationing.

Completed surveys shall be submitted in permanently bound books (or in formats acceptable to ADOT) with the final plans. The surveys shall include locations, stakes and references of control points, (including the beginning and ending points of the project), PC's, PT's and PI's (if possible) of curves, POT's with a maximum interval of one thousand (1,000) feet, and bench marks on alternate sides of the roadway with a maximum interval of five hundred (500) feet. Any survey data provided by the Consultant must be certified by an Arizona Registered Land Surveyor. Any coordinates used shall comply with the Arizona State Plane Coordinate System.

Surveys will include, as applicable:

a. Base line control
b. Control for aerial mapping
c. Right-of-way surveys
    - Section Corner and Land Ties
    - Existing Right of Way Monumentation
    - Staking of New Right of Way for Appraisal Purposes
    - New Right of Way Monumentation
    - A "Results of Survey" map
d. Topographic surveys
e. Roadway drainage surveys
f. Utility locating - set control points with coordinates and elevations at five hundred (500) ft. maximum intervals adjacent to the road and along the utility lines (See Section 430)
g. Centerline staking, centerline of each roadway, as applicable for field review (lath stakes at PC, PI and PT' as required by ADOT.
h. Centerline and edge elevations of existing pavement at fifty (50) ft. intervals
i. Ties to Arizona State Plane Coordinates
j. Final alignment staking
k. Crossroads tie-ins, turnouts and driveways
l. Above ground utilities

The Consultant shall obtain any permits that may be required prior to beginning field work. A traffic control plan may also be required. Preparation of surveys shall conform to applicable documents referenced in Section 200 of the Scope of Work, including (but not necessarily limited to) procedures, record-keeping requirements, equipment use, and safety precautions.

Unless otherwise directed by the ADOT Predesign Project Manager, the Consultant shall be responsible for selecting a scale that results in good plan clarity. The following scales are suggested:

a. 1" = 500' (Drainage map and R/W key sheet)
b. 1" = 200' (Concept Plans and R/W maps)
c. 1" = 20' (Intersections, urban streets, and other items of considerable detail)

The consultant may be responsible for delineating the proposed new centerline, right-of-way, and/or toe of slope to assist in the evaluation of the proposed alternates, utility locations, and to assist with any required archaeological testing.
Completed surveys and maps shall be recorded in an acceptable format. Upon final approval, the books, maps and CADD files, and other diskettes, shall be submitted to the ADOT Predesign Project Manager.

Utilities and Railroads

The Consultant shall establish contact with utility and railroad companies to obtain all applicable facility location mapping. The Consultant shall coordinate all activities with the various utility companies. After initial contact, ADOT Utility & Railroad Engineering Section (URR) will coordinate activities between the Consultant and railroad companies. The Consultant shall furnish URR with copies of all correspondence between the Consultant and the utility and railroad companies. All correspondence shall include complete ADOT Project No., Federal Aid Project No., Highway Section, and Project Location.

Where a utility conflict is evident and relocation is required, the Consultant shall request URR assist in the estimation of relocation costs. The Consultant shall provide URR with all conflict information and the proposed solution. URR will contact the utility company to determine their prior rights status and determine who will pay for the utility relocation. If it is determined the cost of utility relocation is to be included in the project costs, URR will instruct the Consultant to include the cost, including materials, labor and engineering, in the L/DCR, subject to review by URR.

The Consultant shall distribute as many copies as necessary of the design concept to the affected utility companies. All response comments from the utility companies shall be forwarded to ADOT.

Public Information Meetings & Hearing

Public Information Meetings

The Consultant and its staff shall be available, at five (5) work days notice, to attend meetings or make presentations at the request of ADOT. The purpose of these meetings shall be to inform the public of the scope, details, and anticipated schedule of the project. Such meetings and presentations may be held at any hours between 8:00 a.m. and 12:00 midnight on any day of the week except legal holidays. The Consultant shall assist ADOT and CCP Consortium in the review of graphics, handout materials, audio-visual displays and similar material for such meetings. All such materials shall prominently display the ADOT logo.

Public Hearing

The Consultant and its staff shall be available, at five (5) workdays notice, to attend or make presentations at Public Hearings at the request of ADOT. The purpose of these hearings shall be to inform the public of the preferred alternative, provide information about the issues leading to the recommendation and provide the public with an opportunity to comment on these recommendations and issues. Such hearings and presentations may be held at any hours between 8:00 a.m. and 12:00 midnight on any day of the week except legal holidays. The Consultant shall assist ADOT and CCP Consortium in the review of graphics, handout materials, audio-visual displays and similar materials. All such materials shall prominently display the ADOT logo.

Meeting Notifications

Meetings and site visits shall be announced a minimum of two weeks (preferably four weeks) prior to the meeting.

Pre-review of Submittals

Upon completion of any report for distribution, the Consultant shall prepare and submit, to ADOT Predesign Section, two preliminary copies of the complete document, transmittal letter, and distribution list for pre-review. Upon receipt of comments, the Consultant shall revise accordingly and distribute the documents for formal review.

Order of Events (as applicable)

The following steps and reports may be necessary in order to complete an acceptable Design Concept Report and Environmental Documents. The steps/reports are listed in approximate chronological order and are discussed in subsequent sections of this document.

- Initial Site Visit
- Notice to Proceed
- Project Team Meetings (Kickoff & Progress)
- Data Collection
  - Problem Statement, Project Assessment, Previous Studies
  - Program Data
  - Other Data
  - Video Project
- Photogrammetry, Surveys, Mapping, Digital Terrain Modeling
- Reports
  - Public Involvement Plan
  - Initial AASHTO Controlling Design Criteria Report
- Project Scoping
  - Project Team Scoping Meeting
  - Agency Scoping Meeting
  - Scoping Field Review
  - Public Scoping Meeting
  - Project Scoping Report
- Alternatives Selection
  - Project Team Meeting (Alternatives Selection)
  - Agency Information Meeting (Alternatives Selection)
  - Public Information Meeting (Alternatives Selection)
  - Alternatives Selection Report (Including Environmental Overview)
- Reports
  - Preliminary Geotechnical Report
  - Preliminary Drainage Report
  - Preliminary Traffic Report
  - Biological Evaluation Report
  - Bridge/Structure Concept Report
  - Cultural Resources Report
  - Air Quality and Noise Analysis Report
  - Hazardous Materials Survey Report
  - Visual Impact Analysis
- Identify Recommended Alternative
  - Project Team Meeting (Recommended Alternative)
  - Agency Information Meeting (Recommended Alternative)
  - Public Information Meeting (Recommended Alternative)
- Initial Design Concept Report (Concurrent with Draft Environmental Document)
- Draft Environmental Document (Concurrent with Initial Design Concept Report)
- Review and Approval
  - Project Team Meeting (DCR & Environmental Document)
  - Agency Meeting (DCR & Environmental Document)
  - Public Hearing (DCR & Environmental Document)
  - Comment Resolution
  - Comment Resolution Documentation for Initial Design Concept
  - Comment Resolution Documentation for Draft Environmental Document
- Reports
  - Implementation Plan
  - Change of Access Report
  - Final AASHTO Controlling Design Criteria Report and Request for Design Exceptions and Deviations
- Final Design Concept Report (Concurrent with Final Environmental Document)
- Final Environmental Document (Concurrent with Final Design Concept Report)
- Document Printing and Distribution.

INITIAL SITE VISIT

An initial site visit may be held with the ADOT Predesign Project Manager and the Consultant's key personnel as well as team members from District. The purpose of this site visit would be to acquaint the Predesign Project Manager and the Consultant with the project objectives, issues, and concerns and to provide input to assist in the preparation of scope modifications, contract hours and costs for contract negotiations.

NOTICE TO PROCEED

Consultants are issued a written Notice To Proceed by Engineering Consultant Section after contract negotiations are completed.

PROJECT TEAM MEETINGS (KICKOFF & PROGRESS)

A Project Team Kickoff Meeting and periodic Progress Meetings will be held with key ADOT personnel, the Consultant's key personnel, sub-consultants, and significantly involved agency representatives. The purpose of the meetings is to acquaint ADOT, the Consultant, the sub-consultants, and involved agencies with the project objectives and progress and to maintain a strategy for effectively completing the project.

At minimum, the following representatives shall be invited to participate in the meeting:

- ADOT
  - Roadway Predesign Section
    - Section Manager
    - Predesign Project Manager
  - Environmental Planning Group
    - Project Representative
  - Statewide Project Management Group
    - Project Manager (Future)
  - District Engineer
  - District Development Engineer
  - District Maintenance Engineer
  - Specialty Disciplines (as appropriate)
    - Roadway Design
    - Traffic Design
    - Drainage Design
    - Bridge Design
    - Pavement Design
    - Geotechnical Design
    - Right of Way
  - Communication and Community Partnerships (as appropriate)
- Consultant
  - Project Manager
  - Project Engineer
  - Environmental Planner
  - Specialty Disciplines
- Sub-consultants
- Agency Representatives
  - FHWA
  - Federal
    - Forest Service
    - Bureau of Land Management
    - Fish and Wildlife
    - National Park Service (Saguaro National Monument)
  - State
    - State Land Department
    - Department of Public Safety

Pima Association of Governments (PAG)
Regional Transportation Authority (RTA)
County (Pima)
Cities (Tucson, Town of Marana)
Indian Communities

At the Kickoff Meeting, the Project Team will identify other key organizations from which to gather information. These organizations may include the following:

Chamber of Commerce
Special Interest Groups
Visitors Bureau
Civic Organizations
Service Organizations
Schools, Colleges and Universities
Emergency Services
Utilities
Railroads

At the Kickoff Meeting, the Project Team will schedule the Agency Scoping Meeting, Field Review, and Public Scoping Meeting.

The frequency, location, and duration of subsequent Progress Meetings will be determined by the Project Team as approved by the Predesign Project Manager.

DATA COLLECTION

Problem Statement, Project Assessment, Previous Studies

If a Problem Statement, Project Assessment, or previous studies were prepared for the project, obtain and review the file for completeness of available data.

Program Data

Projects that have been programmed will have the following data available. For projects that have not been programmed, this data may need to be developed:

ADOT District, ADOT Prefix Number, ADOT Project Number/TRACS Number, Federal Aid Project Number, Project Name, Project Description, Fiscal Year, Budget Item Number, Budget Amount, and Funding Source. This data may be obtained from the current ADOT Five-Year Highway Construction Program.

The CPS ID and Bid Advertisement Date, if established, are available in the Preconstruction Engineering Management PS003 5-Year Bid Date Report.

The PCEM Model, Late Start & Finish Dates, if established, are available in the Preconstruction Engineering Management 90 Report.

The category, purpose and programmed limits are available on the Problem Statement. This document is the original request for including a project in the Five - Year Highway Construction Program. The Problem Statement is available from Multimodal Planning, some will be available in Roadway Predesign Section. The project limits and location are defined more accurately in the Problem Statement.

If unable to find or acquire these items the Consultant should refer to the Predesign Project Manager.

Other Data:

Review the Milepost Log and State Highway System Log to correlate the project limits with Mileposts and roadway stationing.

Review the Five-Year Highway Construction Program (current and tentative), Corridor Studies, etc. for projects in the vicinity of this project.

Check Corridor Study/Small Area Study and State Highway System Plan for future/proposed project(s) or typical sections. Most Corridor Studies are available in Predesign Section files; if not, Multimodal Planning should be contacted.

Check the Highway classification to assist in design speed determination, and for use in review and/or preparation of the AASHTO Controlling Design Criteria Report.

Obtain all as-built drawings and maps for the project from ADOT Engineering Records. Copies of as-built plans are free to consultants under contract to ADOT. Consultants under contract can obtain up to two free copies of maps, specifications, and other types of documents.

Request from Multimodal Planning Division (MPD) and Pima Association of Governments (PAG) the current and projected design year Average Daily Traffic Count (ADT), along with K (Design Hour Factor), T (% Trucks & Recreation Vehicle), D (% Directional Distribution Factor) and the location of any traffic counter loops existing or required. If the project contains an Interchange, include ramps and crossroads in your request. Data should be requested for the program year with projection for twenty years.

Request the last Five-Year Crash Report from Traffic Group, Studies Section.

Request from Pavement Design Section, Materials Group, preliminary pavement structural data and any recommended special oils or percentage of oils that may vary from the standard specifications and would influence the cost of these items in the estimate.

Using the Bridge Record Log, prepare a Bridge Evaluation Request and forward to Bridge Group, Bridge Management Section for evaluation. Do not include concrete box culverts unless they are multi-barreled and have a structure number and a bridge barrier.

Request the assessors maps and ownership records of the properties adjacent to and within the existing and proposed right-of-way. This will provide the information needed to plot property lines on the aerial photos and mapping used for exhibits. Acquire the names and address of property owners that are within three hundred feet of the project. Provide this list to the Environmental Planning Group for use in notification of public informational meetings and public hearings. This ownership list will also be of use for acquiring rights of entry for surveys (archaeology, hazardous waste, alternative centerlines and/or proposed rights-of-way).

Obtain additional property ownership information from County Assessors maps.

Obtain available utility plans and information.

Obtain any other available mapping such as County Highway maps.

Contact any ADOT Sections necessary to obtain available information. Record all pertinent verbal communications.

Depending on the particular project there may be need for additional or different data than which was described above.

Project Video

The Consultant may be required to video the project in both directions including areas of significant concern. A running commentary of the project shall be included in the video.

PHOTOGRAMMETRY, SURVEYS, MAPPING, DIGITAL TERRAIN MODELING

The Consultant shall research all available photogrammetry, survey, mapping, and digital terrain modeling; and identify/obtain additional data as required to complete the study.

The Consultant shall prepare and submit to ADOT, the roadway plans and cross sections using survey data for use by ADOT Geotechnical to identify boring locations within the project limits.

REPORTS

Public Involvement Plan

Responsibility of Consultant

The Consultant shall provide staff and/or materials for public information meetings and public hearings. The Consultant shall schedule a strategy meeting at least two weeks prior to any public meeting with the Predesign Project Manager, project team members from ADOT District, ADOT Environmental Planning Group, CCP Consortium, FHWA and any necessary sub-consultants or participants. The purpose of this meeting will be to determine meeting format, necessary graphics and to identify the roles of all participants.

Responsibility of ADOT Communication and Community Partnership (CCP)

CCP shall be responsible for the development of a Public Involvement Plan that identifies the number, purpose, and schedule of public information meetings, as well as the Public Hearing and any additional efforts to provide community involvement. These activities might include a website, mailings, flyers, newsletters, displays, questionnaires, handouts, surveys, construction alerts or meetings with citizens committees or local organizations, special presentations, or point contacts. ADOT Communication and Community Partnerships will be responsible for advertisement of all public meeting notices, in coordination with Environmental Planning Group (EPG), and will make all arrangements for the public meetings and will arrange for liability insurance, as required.

Initial AASHTO Controlling Design Criteria Report

As part of the study, the Consultant shall, using "as-built" plans and a field reconnaissance, perform a complete roadway inventory and evaluate the existing roadway for compliance with AASHTO Controlling Design Criteria as specified in ADOT Roadway Engineering Group's "Procedural Guide for Review of the AASHTO Controlling Design Criteria on Existing ADOT Roadways."

The Consultant shall prepare an Initial AASHTO Design Criteria Report which shall identify existing design features which do not comply with desired AASHTO design criteria such as: lane and shoulder widths, vertical and horizontal alignments, stopping sight distance, superelevation, design speed, grade, cross slope, vertical clearance, bridge width, structural capacity, bridge rail, design traffic volume, and intersection sight distance.

Using information developed in the Initial AASHTO Controlling Design Criteria Report, traffic crash data furnished by ADOT Traffic Group, and other available information, the Consultant shall evaluate existing design features which do not comply with AASHTO design criteria and incorporate design modifications into the recommended roadway alternative as appropriate.

PROJECT SCOPING

Project Team Scoping Meeting

A Project Team Meeting will be held in preparation for the Agency Scoping Meeting, Scoping Field Review, and Public Scoping Meeting. This Team Meeting will be held at least four weeks prior to the agency/field/public meetings. The purpose of this meeting will be to:

Identify participants
Review graphics and exhibits
Review possible questions and answers
Identify strategies
Prepare Meeting Advertisement
Note: the advertisement must be completed four weeks prior to the Public Meeting to allow for review and public advertisement two-weeks and one-week prior to the Public Meeting.

Agency Scoping Meeting

Depending on the type and complexity of the project, the agency scoping meeting may be held in different ways. The Consultant shall normally conduct and/or moderate this meeting. ADOT CCP shall normally prepare all coordination letters.

For uncomplicated projects where most of the agencies will not have any input or concerns, the written coordination process usually is sufficient and the scoping meeting can be held in conjunction with the field review.

For complex or controversial projects, a broader scoping process may be desirable, with a meeting held in a convenient location prior to scheduling of the field review. This allows the agencies to voice their concerns and point out the areas that may need additional attention during the field review. Having an agency scoping meeting prior to the field review will also reduce the number of participants attending the field review and allowing for the more technical aspects to be discussed.

As alternates are generated it may be necessary to meet with the different agencies to clarify and/or refine their concerns.

The following is a general list of agencies that may receive coordination letters for the project:

ADOT Disciplines
National Forest Service
Bureau of Land Management
U.S. Army Corps of Engineers
Fish and Wildlife Service
Arizona State Land Department
Arizona Game and Fish Department (AGFD)
Arizona Department of Environmental Quality
Arizona Department of Water Resources
Arizona Commission of Agriculture and Horticulture (ACAH)
Arizona Department of Public Safety
Relevant City or County Engineer
Relevant City or County Planner
Relevant Council of Government Association (COG)
Relevant utility companies
Irrigation or water user's associations
District flood control office (may be a separate function or part of a local government's engineering department)
Resident's associations or home owner's associations

The above may or may not need to be notified. There may be other agencies not listed that may need to be included.

Any coordination by the Consultant for environmental purposes including invitation to the agency scoping meeting must first be coordinated with the Predesign Project Manager, EPG, and CCP. The Consultant shall not call any meetings with any agency without first coordinating with the Predesign Project Manager, EPG, and CCP, or else as specifically advised on what can be discussed if the Consultant does the coordination.

Scoping Field Review

The Consultant shall arrange a visit to the project site with ADOT, FHWA, local jurisdictions, utility companies, major land owners, and other agency representatives. The site visit shall be scheduled at least two weeks prior to the visit. The visit should be held shortly after the Consultant is authorized to proceed, preferably within 30 working days of the receipt of written Notice to Proceed, or as otherwise approved by the Predesign Project Manager. It is preferred that this site visit be held on the same day as, or combined with, the Agency Scoping Meeting.

ADOT representatives and Consultant personnel assigned to perform the work on the project shall attend. The FHWA will attend at its own discretion. The purpose of this visit is to acquaint key personnel with the details and features of the project and to gather input on issues, concerns and opportunities.

Prior to scheduling the field review the Consultant shall contact key participants (i.e. District Engineer, Federal Highway Administration, Project Initiator and Predesign Project Manager) for a consensus on a date to insure that they can attend or have a person with knowledge of their desires and with the authority to make decisions and/or recommendations regarding the project, attend in their stead. After reaching a consensus for the date and time a letter of notification shall be sent a minimum of two weeks (preferably four weeks) prior to that date to all of the invited personnel and/or agencies.

It is recommended that the Consultant visit the site with an assistant or staff members to become familiar with the existing conditions, gather any needed measurements (i.e. superelevations, slope rates, pavement widths, clear zone, etc.) and do the major portion of the filming prior to the scheduled field review, thus allowing more time for the District and/or agencies present to input technical information for alternatives and to discuss their concerns and issues.

The Consultant shall record all major conflicts, comments, and preferences voiced by the involved parties during the field review.

Public Scoping Meeting

The Consultant shall present several preliminary layouts or alternatives to the public at a Public Scoping Meeting. These normally are line type presentations on aerial photos at an appropriate scale (typically, one inch equal two hundred feet).

This meeting may be held as an open-house meeting, a formal meeting, or as a combination. There should be ample personnel familiar with the project, available to interact with the public on a one-to-one basis.

CCP will moderate the public meeting, obtain the meeting site, and will inspect the facilities for adequacy. CCP will be responsible for insurance and any fees charged for use of the meeting facilities, along with required advertising. CCP also will provide a sound system, easels and signs for directing the public to the meeting room.

A sign-in sheet with space for names and addresses and blocks to be checked if they wish to be on mailing list for future informational updates and/or newsletters concerning the project. A comment sheet for written

comments shall be available. The comment sheet may have some of the concerns and/or issues list to help solicit comments. It should have an optional signature line. The public can deposit their comment sheets in a comment box or mail them by a given date, therefore, there should be a name and address for the person responsible for receiving and compiling of these comments.

Initial Scoping Summary Report

CCP Consortium will prepare the Initial Scoping Summary Report. The Consultants will be involved in review and comments of this document. The report should include an Executive Summary; meeting minutes or summaries of the Agency Scoping Meeting, Field Review, and Public Scoping Meeting; copies of handouts and graphics, and attendance lists or sign-in sheets from each meeting. The purpose of this report is to summarize all activities associated with the meetings.

ALTERNATIVES SELECTION

Project Team Meeting (Alternatives Selection)

A Project Team Meeting will be held to present the selected alternatives to the Project Team and ADOT specialty disciplines and to prepare for the Agency and Public Information Meetings. The Consultant will present alternatives considered, provide an evaluation matrix, make recommendations, solicit comments, and obtain consensus. The Project Team Meeting will be held two to four weeks prior to the Agency and Public Information meetings

Agency Information Meeting (Alternatives Selection)

An Agency Meeting will be held to present the selected alternatives. The discussion, comments and consensus from this meeting will be incorporated as the Consultant continues development of the project.

The Agency Information Meeting may be supplemented with, or replaced by, an Agency Field Review.

Public Information Meeting (Alternatives Selection)

A Public Information Meeting will be held in the project vicinity to present the proposed alternatives and solicit comments from the public and interested organizations.

Alternatives Selection Report (Including Environmental Overview)

The Consultant shall prepare a brief Alternative Selection Report recommending those alternatives to be carried forward for complete evaluation in the Initial Location/Design Concept Report and draft environmental document.

The report will serve as documentation of the Project Team Meeting, Agency Information Meeting, and Public Information Meeting and will contain minutes and exhibits from those meetings.

The number of alternatives recommended will depend on the type of project, but will normally be six or seven which will be reduced to three or four along with a “no build”.

The Consultant's alternative recommendations will be supported by the Consultant's research, the Initial AASHTO analysis, drainage evaluations, utility and right-of-way information and other information of record, an environmental overview, results of the Agency Scoping Meeting, results of the Field Review, and results of the Public Scoping Meeting.

Utilizing ADOT or USGS mapping, the Consultant shall prepare initial alignments and/or alternatives to the extent necessary to evaluate the alternatives with regard to advantages and disadvantages of the following:

Geometrics and terrain limitations
Off site drainage
Traffic accommodation during construction
Cost
Environmental Overview
Other issues of concern (public acceptability, right-of-way, etc.)

The Environmental Overview will be based on "windshield surveys" and a literature search and will address fatal flaws for alternatives and provide order of magnitude evaluations for alternative comparisons.

The alternatives selection report, at minimum, shall contain the following:

Executive Summary
Alternatives Graphics
Evaluation Matrix
Minutes from, or a summary of:
- Alternatives Selection Consensus Meeting
- Agency Information Meeting
- Public Information Meeting

Responses to Public Concerns
Recommendations

The Report shall be distributed to all individuals who will ultimately receive the Location/Design Concept Report for consensus on recommendations. Comments disagreeing with the recommendations will be evaluated by the Project Team and responded to. If comments result in modifications of recommendations, a letter documenting the recommended change will be circulated for concurrence.

If substantial changes are made over what was presented to the public, it may be necessary to have another informational meeting prior to proceeding with the Initial Location/Design Concept Report.

REPORTS

Final Drainage Report

The Consultant shall perform a drainage study in accordance with current ADOT methodology.

The Consultant should obtain and assess available pertinent public information to identify flood-plains and their impacts, and determine existing flow patterns and known drainage problems throughout the highway corridor, including downstream reaches within the area of influence of project. Analysis of pre-construction hydrologic conditions should be performed in order to evaluate hydraulics (capacity, velocity, flood over-topping elevations etc.) of any existing structures and the impacts of alternatives considered.

The Consultant shall research and evaluate potential future development (20 year planning horizon) within the watershed which may have an impact on future drainage flows and ultimately the performance of existing or proposed hydraulic structures.

The purpose of the drainage study is to identify potential drainage problems for the proposed improvement, to recommend solutions, and to establish initial culvert and channel sizes and alignments consistent with the improvement concept.

Existing drainage facilities shall be analyzed for adequacy.

In urban or elevated area there may be a need for an analysis of a collection and disposal system for the roadway drainage.

Information and documentation shall be provided to confirm that no adverse or increased flows or changes to the off-site and surrounding area will take place as a result of this improvement and construction.

The Consultant shall carefully document and photograph all existing drainage problems, carefully evaluate recommended solutions and assure existing conditions are not impacted by proposed roadway improvements. An office review meeting and a field review of these findings may be necessary for coordination with Drainage Design Section and ADOT Legal.

The Consultant shall document drainage problems, design approaches, solutions, and final hydraulic structures requirements in a separate Final Drainage Report which will be summarized in the L/DCR.

Bridge/Structure Concept Report

The Consultant shall prepare a Bridge/Structure Concept report and coordinate with ADOT Bridge Group to identify type, size, and location required for preliminary cost comparisons.

Final Traffic Analysis Report

General

The Consultant shall prepare a Final Traffic Analysis Report with sufficient detail to identify existing and future capacity and level of service and to develop the number of lanes required, intersection requirements, signal warrants, and interchange requirements to provide an acceptable level of service through the design year.

ADOT Traffic Studies Section should be contacted to determine if traffic counts and turning movements exist at required intersections. The Consultant will be required to provide the data that is not available.

The report shall recommend geometric and/or operational improvements to the mainline, and intersections. This includes turn lanes at intersections, additional lanes on main line, and other mitigation measures. A LOS C -D is desired for the mainline and at signalized intersections.

The Final Traffic Analysis Report will be a separate report and the results of the study will be summarized in the Location/Design Concept Report.

Signals and Lighting

The Consultant shall evaluate the need, according to ADOT Policy, for roadway lighting and signals within the project limits. The Consultant will identify those intersections where traffic signal warrant studies are necessary. The results of those studies shall be reflected in the design concepts developed by the Consultant.

Biological Evaluation Report

A Biological Evaluation Report shall be developed as a separate technical report and shall follow the ADOT EPG guidelines. The Consultant shall summarize Biological Impacts in the environmental document. The biological evaluation and all technical documentation used to produce it shall be included in an Appendix of the environmental document with the exception of Threatened and Endangered Species information deemed inappropriate for publication.

Cultural Resources Report

Cultural Resources Literature Search and Survey

The Consultant shall prepare a cultural resources literature search and conduct a Class 3 survey where necessary. The Cultural resources Report describing the investigations conducted, the findings, and recommendations for further action shall be submitted upon completion of the survey. The Consultant shall summarize the applicable cultural resources information in the environmental document. The report shall be submitted to the ADOT Environmental Planning Group for review and consultation but shall not be included in the environmental document.

Air Quality and Noise Analysis Reports

The Consultant shall prepare separate Air Quality and Noise Analysis Reports leading to and supporting the conclusions reached in the environmental evaluation. All technical documentation used to produce these reports will be submitted to ADOT. The Consultant shall summarize impacts from the air and noise studies in the main text of the environmental document and the reports shall be included in the Appendix of the environmental document.

Hazardous Materials Survey Report

The Consultant shall conduct a Hazardous Materials Survey through the use of visual surveys, aerial photo review, past and present land use, regulatory records review, and prepare a report describing the findings and recommendations for further action. The report shall be submitted to ADOT EPG promptly upon completion of the survey. The consultant shall summarize the survey results in the environmental document. The report shall be included in the appendix of the environmental document. Any further investigations or mitigation may be performed by ADOT or may be added to the scope of work by Contract Modification.

Visual Impact Analysis

The Consultant shall summarize the visual impacts in the environmental document and Location/Design Concept Report. The analysis will not be developed as a separate technical report.

IDENTIFY RECOMMENDED ALTERNATIVE

Project Team Meeting (Recommended Alternative)

A Project Team Meeting will be held to present the recommended alternative to the Project Team and ADOT specialty disciplines and to prepare for the Agency and Public Information Meetings. The Consultant will present the recommended alternative, solicit comments, and obtain consensus. The Project Team Meeting will be held two to four weeks prior to the Agency and Public Information Meetings.

Agency Information Meeting (Recommended Alternative)

An Agency Meeting will be held to present the recommended alternative. The discussion, comments and consensus from this meeting will be incorporated as the Consultant continues development of the project. The Agency Information Meeting may be supplemented with, or replaced by, an Agency Field Review.

Public Information Meeting (Recommended Alternative)

A Public Information Meeting will be held in the project vicinity to present the recommended alternative and solicit comments from the public and interested organizations.

INITIAL LOCATION/DESIGN CONCEPT REPORT (Concurrent with draft environmental document)

The Consultant shall prepare an Initial Location/Design Concept Report. All work shall be addressed in sufficient detail to clearly document the design concept, substantiate recommendations, document alternate considerations, and identify environmental impacts.

The following is an outline and procedural guide that should be used in preparing the Location/Design Concept Report:

Cover Sheet

The Cover Sheet shall contain the ADOT Project No., Federal Aid Project No., Project Name, Highway Section Name, and Route No. Type of report - Initial, or Final; prepared for ADOT by (report author), and date.

Title Page

The Title Page shall contain the same information as the Cover Sheet. In addition, the Title Page shall contain the ADOT District in which the project is located and the County in which the project is located.

Table of Contents

Executive Summary

Brief description of project purpose, location, and scope, ADOT Project Number, Federal Aid Project Number, milepost limits, length of project, route number, county, program year, programmed and estimated costs, identification of consultant involvement, required coordination with other projects, local government agreements, applicable MPD studies, overall highway corridor goals, specification of public lands involvement such as National Forest, Indian Reservation, etc. The recommended alternative shall be identified. The estimated cost of design, construction, utility relocation's and right-of-way shall be noted for the recommended alternative.

List of Figures

Introduction

Foreword

Identify the AASHTO Classification of the highway. Identify the posted speed(s). Identify and discuss the major traffic generators.

Need for Project

Include a complete analysis of why the project is needed. The analysis should describe how the existing highway is functioning and the reasons that prompted ADOT to program or investigate a project at this location. Any cause/effect relationships suggested by review of existing data and interviews with the parties involved shall be identified and discussed.

Project Objectives

Completely describe the objectives of the project. The data in this section is dependent on the analysis presented in the "Need for the Project" section of the report. The objectives to be accomplished by the project should be the remedies needed to correct the problems identified in "Need for Project."

Characteristics of the Corridor

This section shall include, but not be limited to the following data:

- The width of the existing pavement and the type of pavement section.
- The lane and shoulder widths of the existing highway. If curb and gutter are present, the locations shall be listed.
- The design speed(s) of the existing highway.
- All previous projects constructed within the improvement section shall be identified. The project numbers and construction dates shall be listed in a table.
- The horizontal and vertical alignments of the existing highway shall be described.
- A description of the existing right-of-way shall be included. The minimum and maximum right-of-way widths shall be noted, and the type of right-of-way, easement or deed, shall be identified. The types of ownership within the project - private Forest Service, Indian Tribe, etc. - shall be identified.
- The drainage characteristics of the corridor shall be described. Any watersheds, drainage's, or waterways within or adjacent to the project shall be identified. A description of all drainage and irrigation facilities within or adjacent to the project shall be included. If there are any agencies or other authorities responsible for the drainage or irrigation facilities, they shall be identified.

- The total number and type of existing drainage structures (bridges, pipes, and concrete box culverts shall be listed. A brief description of the major bridge structures within the project shall be included.
- The surrounding topography and terrain shall be described. The primary geology, soils, and vegetation shall be identified.
- The future land use proposed for the area shall be described. If there are any major developments proposed, the shall be identified and described.

Description of the Project

Include a complete description of the proposed work for the recommended alternate only. The following data shall be included in the description:

- The length of the project
- The termini of the project. Each terminus shall be identified by milepost and station.
- The total pavement width. If curb and gutter is proposed, the curb to curb width shall be listed. The lane widths, median width, and shoulder widths shall be listed. If there is more than one type of typical section proposed, each shall be completely described, and the effective milepost limits of each shall be listed.
- The total number of lanes shall be noted.
- Any new right-of-way that is needed shall be identified and described. The quantity needed, in acres, and the type of ownership (residential, commercial, Forest Service, etc.) shall be listed
- If curb, gutter, sidewalk, median treatments, or intersection improvements are proposed, they shall be identified and described. Any IGAs for new sidewalk or other proposed facilities shall be described.
- The striping, marking and signing improvements shall be identified and described.
- Any safety upgrades proposed - slope flattening, curve reconstruction, guardrail upgrades, culvert extensions, hazard removals, etc. - shall be identified and described.
- Any drainage improvements proposed - storm-drains, culverts, catch basins, bank protection, scour protection, channel reconstruction, basins, etc. - shall be described.
- Any utility, railroad, or irrigation system improvements or conflicts that will impact the design and construction of the project shall be identified and described.
- The traffic control proposed for the project - detours, construction phasing, tie-ins to adjacent projects, etc. - shall be identified.

Location and Vicinity Maps.

Traffic and Accident Data

All L/DCRs shall have a "Traffic and Accident Data" Chapter. The Chapter shall contain the following sections:

Traffic Analysis

Source of Data

The sources that provide traffic data for the report shall be referenced. In most cases, there will only be one traffic data source - the ADOT Travel and Facilities Branch.

Origin-Destination Study

Summarize the results of the origin-destination study, if one was conducted.

Traffic Data

- The Average Daily Traffic (ADT) Volumes, in vehicles per day, shall be listed. The volumes for both the construction and design years shall be listed.
- The Design Hour Traffic Factor (K), in percent
- The Directional Distribution Factor (D), in percent.
- The Truck Factor (T), in percent
- If needed, intersection counts (including turning movements) and diagrams shall be included.
- If the project includes a Traffic Interchange or Intersection, the data listed above will be expanded to include ramps, crossroads, or all legs of the intersection. The data may also be expanded to include projections of traffic on adjacent interchanges and area wide systems.

Traffic Operational Analysis

This section will discuss the results of the traffic analysis and the impacts/solutions suggested by review of the data.

Accident Analysis

Source of Data

The sources that provide traffic data for the report shall be referenced. In most cases, there will only be one accident data source - the ADOT Traffic Studies Branch.

Accident Data

An itemized list that shows the types and numbers of accidents within the improvement section during the last five year period shall be included. In addition, the total number of accidents, the number of accidents involving injuries, and the number of accidents involving deaths shall be listed. The accidents shall be itemized according to type - rear end, ran off road, hit fixed object, etc. The beginning and ending dates of the accident sample shall be listed.

Review of Accident Data

If the ADOT Traffic Studies Branch has reviewed the accidents within the improvement section and prepared a report, the report shall be referenced and any conclusions reached shall be cited. The consultant shall not draw any conclusions from reviewing accident data unless the ADOT Traffic Studies Branch has reviewed and approved these conclusions.

Location Analysis

When location is an issue for a project, a "Location Analysis" Chapter shall be included. The Chapter shall contain the following sections:

Introduction

Reasons why location is an issue shall be discussed. The discussion should include background information explaining why particular alternative locations are being evaluated and what the issues are driving development of the different alternatives. A discussion of field inspections, meetings, and input form others shall be included.

Description of Alternative Corridors

This section shall include a complete description and rationale of each alternative corridor proposed, including the existing corridor. The alignments and impacts of each alternative shall be fully described.

Evaluation of Alternative Corridors

The pros and cons of each alternative location will be discussed. Each alternative shall be evaluated for the following impacts: present and future land use, right-of-way, environmental, cultural resources, archeological, cost, constructability, traffic control, safety, drainage, earthwork, flood-plains, utilities, structures, socio-economic considerations, impact on present and future land uses, preferences of outside agencies and other parties, and design exceptions. A matrix chart shall be prepared to evaluate the alternatives. Each alternative shall be listed at the left of the matrix, and each impact shall be listed at the top. A score shall be assigned to each impact to indicate its relative difference between alternatives. Impacts shall be weighted so one impact can be directly compared to another. The criteria used to assign scores to the different impacts shall be explained and discussed.

Conclusions

The recommended location shall be identified, and the reasons and logic used to select it shall be explained. Does cost exceed the programmed amount? Does the recommended alternative have the leas amount of negative impacts? Can negative impacts be mitigated? Is the recommended solution interim or within the long-term goals of the overall highway corridor?

Design Concept Alternatives

This chapter shall contain the following sections:

Introduction

This section shall include background information explaining why particular Design Concept Alternatives are being evaluated and what the issues are driving development of the alternatives.

Design Concept Alternatives Considered and Discontinued

This section shall include a brief description of each Design Concept Alternative that was considered and discontinued. The alignments and impacts of each alternative shall be briefly described. The reasons for dropping the alternatives shall be explained.

Design Concept Alternatives Studied

This section shall include a complete description of each Design Concept Alternative that was considered for further development. The alignments and impacts of each alternative shall be fully described.

Evaluation of Alternatives

The pros and cons of each alternative corridor will be discussed. Each alternative shall be evaluated for the following impacts: present and future land use, right-of-way, environmental, cultural resources, archeological, cost, constructability, traffic control, safety, capacity, level of service, drainage, earthwork, flood-plains, utilities, structures, socio-economic considerations, and design exceptions. A matrix chart shall be prepared to evaluate the alternatives. Each alternative shall be listed at the left of the matrix, and each impact shall be listed at the top. A score shall be assigned to each impact to indicate its relative difference between alternatives. Impacts shall be weighted so one impact can be directly compared to another. The criteria used to assign scores to the different impacts shall be explained and discussed.

Conclusions

The recommended alternative shall be identified, and the reasons and logic used to select it shall be explained.

Major Design Features of the Recommended Alternative

This chapter shall contain the following sections

Introduction

This section shall describe the purpose of this chapter

Design Controls

This Section shall include a complete list of the Design Controls proposed for the recommended alternative. The following Design Controls shall be listed in the report:

- Project Design Year
- Design Speed(s)
- Geometrics
- Slope Standards
- Superelevation
- Maximum Degree of Curve
- Maximum Grade
- Typical Section
- Roadway Width
- Lane Width
- Shoulder Width
- Type of Access Control
- Right-of-Way Width

Horizontal and Vertical Alignments

This section shall include a complete description and discussion of the horizontal and vertical alignments proposed for the recommended alternative. The beginning and ending stations of the alignments shall be listed as well as the number of curves, spirals, and tangents.

Access

Based on the Consultant's review of property ownership abutting the proposed right-of-way, existing and proposed land use, ADOT policy, etc., the Consultant shall recommend the access control concept for the corridor. The location of known or currently proposed intersections, median breaks and turnouts will be shown on the conceptual plans. Access requirements for recreation, property and businesses abutting both existing and new right-of-way shall be considered. Local jurisdictions and County Planning & Zoning shall be consulted during this process. The type of access control shall be described. Any special features that are needed to provide access control (such as fencing, gates, and curbs) shall be identified and discussed. Any special access roads or entrances (such as substation entrances) shall be identified. Any access required for future developments shall be identified and described.

Right-of-Way

This section shall include a complete discussion of the right-of-way requirements for the recommended alternative. The Consultant shall identify the requirements for new right-of-way and easements, including, but not limited to: new roadway right-of-way, slope easements, drainage

easements, and temporary construction easements. An estimated cost of the proposed right-of-way shall be included. The accuracy of the R/W requirements shall be commensurate with the design effort. Existing and future land uses, zoning and special uses and their possible effect on the corridor will be summarized and discussed. Include the quantity (in acres), width, and station limits of any new right-of-way required. Identify any private or public groups who control the needed right-of-way, such as the Forest Service, Bureau of Land Management, Arizona State Land Department, Railroads, or Indian Tribes. If special right-of-way impacts are involved, they shall be described. For example, if only a partial take of a parcel is needed, the associated impacts on the landowner should be discussed. If operations of a business located on the property will be affected, this should be noted.

Drainage

This section shall reference and summarize the information presented in the Preliminary Drainage Report and shall include a description of the drainage impacts associated with the recommended alternative, and a description of the proposed improvements. It shall document existing drainage conditions on parcels upstream and downstream of the proposed roadway improvements. Upstream and downstream impacts caused by proposed drainage modifications shall be identified and discussed. Drainage solutions which do not negatively impact existing conditions shall be provided. This section shall include a summary of hydrologic data and a tentative drainage layout for cross-drainage and tentative structure sizes. Any drainage facility improvements proposed for the project - cut ditches, channels, storm drains, catch basins, culverts, bank protection, scour protection, channel reconstruction, etc. - shall be identified and described. Requirements for special design details shall be identified. If a drainage study is needed for the project, this fact shall be noted and the drainage work to be addressed by the proposed study shall be described.

Flood-plain Considerations

This section shall include a description of the flood-plain impacts associated with the recommended alternative. A statement shall be included noting whether or not any areas have been identified by FEMA as 100-year flood-plains. If the proposed project encroaches on a flood plain, the impacts associated with the encroachment shall be identified and described.

Section 404 of the Clean Water Act

This section shall include a statement concerning whether or not the recommended alternative qualifies for any nationwide or individual permits required under Section 404 of the Clean Water Act. If permits are required, the following standard declaration shall be included: "ADOT Environmental Planning Group will apply for all permits required."

AZPDES Permit:

This section shall contain the statement; "Any construction project that will disturb one or more acres of land area will require an Arizona Pollutant Discharge Elimination Systems (AZPDES) general permit as directed by Section 402(p) of the Clean Water Act." The Consultant shall identify the need for any such permits.

Geotechnical

This section shall reference and summarize the results of the Preliminary Geotechnical Report.

Earthwork

This section shall include a description of the earthwork impacts for the recommended alternative. The Consultant shall attempt by adjustment of highway geometrics to balance the earthwork within the limits of the recommended design projects to a level commensurate with the study. The estimated total embankment, borrow, or waste shall be specified. Any special earthwork, such as cut ditches or slope flattening, shall be described. Any nearby borrow pits or waste disposal sites shall be identified. If the right-of-way is controlled by the Forest Service, Indian Tribes, or other involved party, the preferences of the party concerning the earthwork shall be noted. The Forest Service often has specific requirements concerning the location of pits, interim stockpiling of materials, treatment of side slopes, and the disposal of waste. A statement shall be included concerning whether or not the earthwork will be balanced. If the earthwork will not be balanced, the quantities of borrow or waste shall be specified.

Constructability and Traffic Control

This section shall include discussion of the constructability and traffic control issues of the recommended alternative. Any special features of the project that will make the improvements difficult to construct will be identified and discussed. For example, when a bridge will be constructed in stages on the existing alignment and the existing bridge is to remain as a detour,

constructability will be an issue. A detailed description of proposed detours, tie-ins to adjacent projects, construction phasing, and other traffic control measures shall be presented. Recommendations for signing marking and signals shall be included. The following sentence shall be included: "Traffic control shall be specified by a traffic control plan or procedures and guidelines in the ADOT Traffic Control Manual for Highway Construction and Maintenance." The following sentence shall be included: "Access to adjacent properties shall be maintained during construction." If special measures are to be taken to provide access, a description of the measures shall be included.

Intersections

This section shall include discussion of any intersections that will be constructed or upgraded as part of the recommended alternative. Traffic interchange and intersection geometrics shall be addressed. Pull-out and turn-out treatments shall be addressed. All intersection improvements including signals, signing, and marking shall be identified and discussed.

Utilities

Based on existing records along with prior rights information, the Consultant shall identify all utilities within the general project limits to determine potential conflicts and relocations The Consultant shall indicate the horizontal and vertical location for all known existing utilities from utilities' records on the alternative drawings. The Consultant shall identify any alternatives possible to minimize or eliminate utility line conflicts. The Consultant may be required to prepare a relocation concept and cost estimate for utilities that are being impacted by the project.

Structures

The Consultant will determine the need for new and/or reconstructed structures on the project. The consultant shall be fully knowledgeable of bridge types and structural requirements for railroads, traffic interchanges, water crossings, and walls. The Consultant shall recommend alternative structures and structure depths to the extent necessary for development of roadway concepts. A Bridge Concept Report to identify Type, size, and location (T.S. & L.'s) is required for preliminary cost comparisons and as a part of the study.

Pavement Design

This section shall include a description of the pavement design proposed for the recommended alternative.

Construction Water Sources

The consultant shall identify potential construction water sources, assess their availability and assess the potential for the water sources to meet the requirements of the project.

Social, Economic and Environmental Considerations

The report shall include an overview of impacts, displacements, and potential hazardous waste sites, Section 4(f) lands, Section 404 & 401 Clean Water Act, flood-plains, wetlands, historic and archaeological preservation, and shall identify the extent of NEPA documentation required and identify cooperating agencies.

Environmental Mitigation Requirements

Environmental Mitigation Requirements will be outlined in the Location/Design Concept Report exactly as presented in the Environmental Assessment.

AASHTO Controlling Design Criteria

Data described in this chapter of the report will be taken from the AASHTO Controlling Design Criteria Report (which is a supplement report to the Location/Design Concept Report). The following sections will be included in this chapter:

Introduction

Describe the non-conforming AASHTO design elements of the existing highway which will be upgraded as part of the project, and those elements for which design exceptions will be requested. The recommended alternative will be used to make this determination.

Lane and Shoulder Widths

Compare the existing lane and shoulder widths to the minimums recommended by AASHTO. The proposed lane and shoulder widths for the recommended alternative will be noted, and if the proposed widths do not conform to AASHTO, the reasons shall be discussed.

Vertical Alignment and Stopping Sight Distance

Compare the existing vertical curve stopping sight distances with the minimums recommended by AASHTO.

Horizontal Alignment and Stopping Sight Distance

Compare the existing horizontal curve stopping sight distances, superelevations, and degree of curvature with the AASHTO recommended guidelines.

Design Speed

The minimum design speed(s) recommended by AASHTO shall be noted and discussed. If different design speeds are to be used for different segments of the improvement section, the speeds and there associated milepost limits will be noted. The reasoning used to select the design speed(s) shall be discussed. Factors such as type of terrain and functional classification of the highway will be cited as reasons used to select a particular design speed.

Grades

Compare the existing maximum grade will with the maximum grade recommended by AASHTO. Note the length of the grade, and discuss the operational impact on truck traffic.

Cross Slopes

Compare the existing cross slope to the range of cross slopes recommended by AASHTO.

Vertical Clearance

Compare the vertical clearances of all underpasses with the minimums recommended by AASHTO.

Bridge Structures

Compare the clear width (curb to curb), rail type and strength, and the structural capacity of the bridge with the AASHTO recommended guidelines.

Other Considerations

Evaluate and discuss other elements of the highway (those that are not any of the "thirteen criteria" ADOT has agreed to evaluate). These other elements may include intersection sight distance, recovery areas, lateral clearance, etc.

All features (limited to the "13 Criteria") of the existing highway that do not conform to current AASHTO recommended design guidelines shall be identified. A statement shall be included concerning whether or not design exceptions will be requested for the recommended alternative. If all or some of the non-conforming features are to be upgraded as part of the project, this fact shall be noted and the features identified. If the project is State funded (or project is to be administered under Certification Acceptance Procedures) and design exceptions are required, the Assistant State Engineer (Roadway Group) will be petitioned for approval of the exceptions and this will be so noted in the Location/Design Concept Report. If the project is Federally funded and will not be administered under certification acceptance procedures, the FHWA will be petitioned, for approval of the non-conforming features and this will be so noted in the Location/Design Concept Report. The supporting reasons for the request shall be fully explained. The petition will be made by a separate letter separate; however, the fact that that approval has been requested will be noted in the DCR.

Itemized Cost Estimate

This chapter shall contain an itemized cost estimate for the recommended alternative. Itemized cost estimates for other alternatives shall be placed in the Appendix. Estimated costs for right-of-way and utility relocation's shall be addressed separately for each alternative. The cost estimate accuracy shall be commensurate with the design effort and shall include appropriate contingency factors. The basis of the estimate shall be the most current version of ADOT's "Construction Costs". Right-of-way estimates shall be "order of magnitude" estimates based on the best available information.

Appendices

All L/DCRs shall have the appendices listed below. The appendices will be tabbed for quick reference.

Analysis of Existing Roadway Alignment (AASHTO Controlling Design Criteria Report)

This appendix will contain the review (inventory) of the thirteen AASHTO Controlling Design Criteria. This same report will be submitted with a cover letter to either the ADOT Assistant State Engineer (Roadway Group) or the FHWA when requesting design exceptions for the project (if required).

Detailed Cost Estimates for Other Alternatives

This appendix will contain the detailed cost estimates for alternatives other than the recommended alternative. Each estimate will be properly identified and separated from the others.

Typical Sections

This appendix will contain the typical cross sections proposed for the project. The effective milepost limits for each typical section will be noted at the top of the sheet. If alternative sections were evaluated and dropped, these sections will also be shown and clearly identified. The recommended sections will be clearly identified as the recommended ones and separated from the others.

Plan and Profile Sheets

Drawings for all horizontal and vertical Alignments proposed and evaluated shall be placed in this appendix. The alignments for the recommended alternative shall be placed before the others and noted as the recommended alternative. Each alternative will be clearly identified and separated from the others. Plan and profile shall be developed to such refinement that grades can be reasonable determined and earthwork, drainage, right-of-way, environmental impacts and utility conflicts can be identified.

DRAFT ENVIRONMENTAL DOCUMENT (Concurrent with Initial Location/Design Concept Report)

General

All activities required to reach submittal of the Initial Location/Design Concept Report may proceed concurrently with the environmental studies to be performed. If any ground-disturbing activities are deemed necessary prior to final environmental clearance, coordination and approval by ADOT and/or affected federal, state, and local agencies will be required.

The Consultant shall provide technical information on the project to ADOT and shall prepare environmental documentation for the project. The Consultant shall be responsible for coordinating with ADOT EPG and Roadway Predesign Section during the development of, and changes to, the project design concepts. The Consultant shall be responsible for the technical studies and analyses, and report preparation necessary to produce draft and final environmental documents for the project. The Consultant shall coordinate with ADOT CCP on agency and public involvement. The work shall be in accordance with applicable federal and state environmental regulations and as outlined herein.

Upon initiation of the environmental evaluation portion of the work, the Consultant's representative, responsible for the environmental portion of the work, shall meet with ADOT Roadway Predesign Section, ADOT EPG, FHWA and other participating agencies to discuss the project description, purpose and need, proposed methods of environmental evaluation, anticipated involvement with other agencies, report formats, etc. The Consultant, after this consultation, shall coordinate with affected federal, state, and local agencies and identified special interest groups to discuss the proposed project and its anticipated effects. This coordination may be in the form of letters and/or meetings as determined by the consultant in consultation with ADOT and other participating agencies. This coordination shall be held early in the development stages of the alternative selection process.

During the course of the environmental evaluation, the Consultant shall maintain regular contact with ADOT, advising ADOT of the progress of the work, the problems encountered and the resolutions thereof.

The environmental document will generally describe the impacts of the recommended action and the necessary Mitigation Measures in a format agreed to by ADOT and other participating agencies. Technical Reports will be included as appendices with sensitive Cultural, Habitat and Species information removed. Complete Technical Reports with all sensitive information relative to the project will remain on file in ADOT EPG.

The following categories of impact shall be addressed by the Consultant for the project as applicable:

1. Land Use (existing and proposed)
2. Land Ownership
3. Social (includes school, churches, medical facilities, police, fire- houses, residences, relocation's, etc.)

4. Economics (includes commercial and industrial enterprises, employment, local tax base, etc.)
5. Minority (neighborhoods, businesses, residences, etc.)
6. Natural Resources (water, lands, air, etc.)
7. Section 4(f) (parks, recreation, wildlife refuges, lakes, streams, school playgrounds, etc.)
8. Cultural Resources (includes historical and archaeological)
9. Farmlands (prime, unique, statewide importance)
10. Water Quality
11. Section 404 (dredged and fill materials)
12. Endangered Species (plant and wildlife)
13. Native Plants (State Native Plant Law)
14. Flood-plains
15. Wetlands
16. Air Quality Report
17. Noise Study Report
18. Wild and Scenic Rivers
19. Natural Areas and Trails
20. Scenic Roads and Parkways
21. Local Traffic Patterns
22. Existing and any additional right-of-way
23. Energy Usage
24. Construction Impacts (of temporary nature)
25. Pedestrian/Bicycle/Equestrian Facilities
26. Visual Qualities
27. Material Pits and Haul Roads
28. Utilities
29. Erosion Control
30. Other Modes of Transportation
31. Sole Source Aquifer
32. Hazardous Materials
33. Potential Construction Water Sources
34. Section 402(p) of the Clean Water Act

A draft environmental document shall be prepared for publication. FHWA will be the lead Agency for the NEPA document. Determination of the draft environmental document format will be discussed with and agreed upon by ADOT, FHWA, and other participating agencies, prior to data gathering for the Technical Reports. Pre-review of the draft environmental document by EPG and Roadway Predesign Section will be required prior to submittal to FHWA and other participating agencies. Signatures by ADOT and FHWA are required prior to publishing and distributing to other agencies for review and comment.

REVIEWS AND APPROVALS

Project Team Meeting (Location/Design Concept Report and Environmental Document)

After distribution of the Initial Location/Design Concept and draft environmental document, a Project Team Meeting will be held to solicit comments and obtain consensus from the Project Team and ADOT disciplines, and to prepare for the Agency and Public Information Meetings. The Project Team Meeting will be held two to four weeks prior to the Agency and Public Information Meetings.

Agency Meeting (Location/Design Concept Report and Environmental Document)

After distribution of the Initial Location/Design Concept and draft environmental document, an Agency Meeting will be held to solicit comments and obtain consensus.

Public Hearing (Location/Design Concept Report and Environmental Document)

The need for a public hearing will be dependant upon the level of the proposed NEPA document. After distribution of the Initial Location/Design Concept and draft environmental document, if the team determines a public hearing should be held, the meeting should be held in the project vicinity to present the recommended alternative and solicit comments from the public and interested organizations. The Public Hearing will be coordinated through ADOT Communication and Community Partnerships and the ADOT Environmental Planning Group.

Comment Resolution and Consensus

Depending on the nature of the comments received during the Project Team Meeting, the Agency Meeting, and the Public Hearing, it may be necessary to conduct additional comment resolution and consensus meetings and to prepare additional project documentation. The nature and scope of this work will be established based on consultations with the Predesign Project Manager.

REPORTS

Implementation Plan

The Implementation Plan shall define the individual sequential steps necessary to develop the ultimate corridor goals and design concept developed in the Location/Design Concept Report.

The Implementation Plan shall identify logical construction segments, logical sequence, and probable timetable when such upgrades may be needed based on traffic projections, maintenance problems, life and reuse of existing facility, traffic control, constructability and other factors.

The Implementation Plan shall include cost estimates for construction segments proposed. As a general guideline, projects in the $20-30 million range are more likely to be programmed than those in excess of that amount. Logical sections based on constructability should be used.

The Implementation Plan shall include:

Interim construction and timing that will -

Address specific problem areas discovered during the Design Concept Study.

Extend the useful life of the existing facility before major reconstruction would be needed.

Result in a phased implementation of the ultimate design concept with a minimum amount of "throw-away."

Cost-effective implementation.

Issues that must be resolved or revisited prior to construction, such as environmental clearance, utility relocations, intergovernmental agreements and right-of-way acquisition, which will be identified and discussed.

A discussion of proposed adjacent development project which may affect the highway.

Construction cost estimates for each proposed project which will be included for programming purposes. The Consultant will document the proposed order of construction along with any

information, such as forecast traffic volumes, developed to provide guidance as to when certain phases may be needed.

The Implementation Plan will be prepared for the preferred design concept alternative only.

The Implementation Plan format shall be as follows:

- Executive Summary
  - Brief description of the location and design concept developed; long-range goals; program year, budget and estimated costs of any programmed projects; summary of interim projects in support of the long-range goals; projected implementation time; and total corridor cost.
- Implementation
  - Remedial Projects
    - Projects identified during the corridor study to address acute capacity and operational problems which would be addressed as soon as funding becomes available.
  - Interim Projects
    - Projects that will extend the useful life of the existing facility or delay the need to reconstruct to the ultimate design concept.
  - Reconstruction Projects
    - Phased implementation to address ultimate corridor needs, balance earthwork and provide usable segments prior to full construction of the concept.
- Project Timing
  - Description of logic leading to classification of projects as Remedial, Interim or Ultimate.
  - Trigger events such as projected traffic volumes, LOS, development of major traffic generators, etc., that will warrant the initiation of the projects described above.
  - Phasing considerations such as earthwork, traffic control, local government agreements, environmental considerations, utilities, etc., that would require one project to precede another.
- Individual Project Cost Estimates
- Agency Coordination
  - Local government agreements, both existing and needed prior to construction.
  - Discussion of public lands involvement such as Arizona State Land Department, Bureau of Land Management, Indian Tribes, etc.
  - Environmental clearance items, those items identified during the Corridor Study that must be resolved or revisited prior to construction.

ADOT Roadway Predesign Section will review a preliminary copy of the Initial Implementation Report after completion of the Public Hearing. The Plan will then be distributed for review.

The preferred implementation strategy will be selected by ADOT. The Final Implementation Plan will be used as a guide for programming all projects within the study limits and will be included as a part of the Final Location/Design Concept Report.

Change of Access Report (Interstate Highways)

The purpose of the Change of Access Report is to obtain the approval of the Federal Highway Administration for additional traffic interchange or a modification of an existing interchange that revises the existing access control on the Interstate Highway System.

The basic items of justification FHWA considers in evaluating a request for a new interchange are:

Explanation as to why current access is inadequate.

Identification of the traffic demands that would be served by the new facility.

Indication that adequate freeway operation will not be affected by the addition.

The general criteria set forth by the FHWA in this regard are as follows:

Spacing:

It is important that interchanges be located so as to properly discharge and receive traffic from other interstate and Federal-aid system routes, or major arterial highways or streets. It is equally important that they not be spaced so closely as either to unnecessarily increase the cost of the system or interfere with the free flow and safety of traffic on the Interstate System.

Documentation:

A statement of the type and condition of the cross-road including:

The system or regional plan of which it is a part.

ADT current and design year; through and turning.

Number of existing traffic lanes and type of highway.

Probable number of traffic lanes for the design year.

Distance to and size of communities directly served.

Distances to the next interchange in each direction.

An analysis of the crossroads, the other roads and streets in the area, and the relation of the interchange to them and to other interchanges to assure the ability of the said streets and roads to effectively collect and distribute interstate highway traffic.

The relationship of the interchange to adjacent interchanges of the interstate highway and the acceptable merge and diverge lengths, and the ability to sign adequately.

The existence of other roads or streets, or the probability of developing them generally to the Interstate System, which could be used by interstate highway traffic by way of interchanges other than the one under consideration in traveling to and from its origin or destination.

A statement of the cost resulting from construction of the interchange, together with the estimated benefit-cost ratio, as part of a cost effectiveness analysis.

A special case where the interchange is clearly necessary to serve a compelling public need.

Where the primary need for the additional service is due to a single new development, information regarding the type, intensity and timing of this development, and its relation to traffic demand is very important.

In addition, any supportive position from other public agencies such as the county or a school district which would reasonably benefit from the proposed interchange would be helpful.

Final AASHTO Controlling Design Criteria Report and Request for Design Exceptions

The Consultant shall prepare a Final AASHTO Controlling Design Criteria Report which shall describe how the features will be treated, either left as is or improved as part of the project. Design exceptions required for the proposed highway will be clearly identified.

Justification for non-corrective action shall be clearly stated in a Request for Design Exceptions. Such reasons as excessive cost, future remedial projects and non-accident history are factors which might support not improving the features. ADOT will review this request and foreword the request to the Assistant State Engineer (Roadway Group) or the FHWA for consideration and approval.

FINAL LOCATION/DESIGN CONCEPT REPORT (Concurrent with Final Environmental Document)

The Consultant shall prepare the Final Location/Design Concept Report for signatures and distribution.

The report shall document the selection to be programmed for construction and shall include refinements of the information developed since the Initial Location Design Concept Report and modifications resulting from review comments and public comment.

The Final Location/Design Concept Report shall include the Final Implementation Plan.

The Final Location/Design Concept Report shall reflect the Assistant State Engineer's or FHWA's action (approval or disapproval) regarding AASHTO Controlling Design Criteria design exceptions.

The Consultant shall submit the Final Location Design Concept Report, sealed by an Arizona-registered Professional Engineer.

FINAL ENVIRONMENTAL DOCUMENT (Concurrent with the Final Location/Design Concept Report)

Upon completion of the public hearing process, the Consultant shall prepare the final environmental document, incorporating a description of the public involvement process and responses to all comments received, and submit it for review. The final environmental document shall be prepared in an addendum format.

Pre-review of the final environmental document by ADOT EPG and Roadway Predesign Section will be required prior to submittal to FHWA or other participating agencies.

DOCUMENT DISTRIBUTION

The consultant shall print and distribute reports as follows. Upon completion of any report for distribution, the Consultant shall prepare and submit, to ADOT Roadway Predesign Section, two preliminary copies of the complete document, transmittal letter, and distribution list for pre-review. Upon receipt of comments, the Consultant shall prepare and distribute the documents for formal review. Copies of review submittals and finalized documents shall be delivered to ADOT by the Consultant accompanied by a transmittal letter and distribution list with complete mailing addresses. All deliveries shall be by hand or overnight courier. All plans shall be half-size black and white sheets. Reviewers will be asked to submit their comments on separate comment forms. The number of copies to be distributed should be confirmed with the Predesign Project Manager prior to printing.

PUBLIC INVOLVEMENT PLAN

Roadway Predesign Section	Predesign Project Manager	2
Environmental Planning Group	Project Environmental Planner	1

INITIAL AASHTO CONTROLLING DESIGN CRITERIA REPORT

Roadway Predesign Section	Predesign Project Manager	2

Note: Roadway Predesign Section will forward the Initial AASHTO Controlling Design Criteria Report to Traffic Studies Section for an Accident Analysis.

INITIAL SCOPING SUMMARY (PROJECT SCOPING REPORT)

Roadway Predesign Section	Predesign Project Manager	2
Environmental Planning Group	Project Environmental Planner	1
Agency Scoping Meeting Attendees	Each	1
Scoping Field Review Attendees	Each	1
Other Project Participants	Each	1

ALTERNATIVES SELECTION REPORT

Roadway Predesign Section	Predesign Project Manager	15

Note: The Alternatives Selection Report will be distributed by Roadway Predesign Section. The Consultant shall furnish a distribution list with complete mailing addresses. **The number of copies to be printed should be confirmed with the Predesign Project Manager prior to printing.**

PRELIMINARY GEOTECHNICAL REPORT

Roadway Predesign Section	Predesign Project Manager	1
Materials Section	Geotechnical Engineer	2

PRELIMINARY DRAINAGE REPORT

Roadway Predesign Section	Predesign Project Manager	1
Roadway Drainage Section	Drainage Engineer	2

PRELIMINARY TRAFFIC REPORT

Roadway Predesign Section	Predesign Project Manager	1
Traffic Engineering Section	Project Traffic Engineer	2

BRIDGE CONCEPT REPORT

Roadway Predesign Section	Predesign Project Manager	1
Bridge Group	Bridge Engineer	2

ORIGIN-DESTINATION STUDY

Roadway Predesign Section	Predesign Project Manager	1
Traffic Engineering Section	Project Traffic Engineer	2

BIOLOGICAL EVALUATION REPORT

Roadway Predesign Section	Predesign Project Manager	1
Environmental Planning Group	Project Environmental Planner	2

CULTURAL RESOURCES REPORT

Roadway Predesign Section	Predesign Project Manager	1
Environmental Planning Group	Project Environmental Planner	2

AIR QUALITY REPORT

Roadway Predesign Section	Predesign Project Manager	1
Environmental Planning Group	Project Environmental Planner	2

NOISE ANALYSIS REPORT

Roadway Predesign Section	Predesign Project Manager	1
Environmental Planning Group	Project Environmental Planner	2

HAZARDOUS MATERIALS SURVEY REPORT

Roadway Predesign Section	Predesign Project Manager	1
Environmental Planning Group	Project Environmental Planner	2

VISUAL IMPACT ANALYSIS

Roadway Predesign Section	Predesign Project Manager	1
Environmental Planning Group	Project Environmental Planner	2

INITIAL LOCATION/DESIGN CONCEPT REPORT

Roadway Predesign Section	Predesign Project Manager	15

Note: The Initial Location Design Concept Report will be distributed by Roadway Predesign Section. The Consultant shall furnish a distribution list with complete mailing addresses. **The number of copies to be printed should be confirmed with the Predesign Project Manager prior to printing.**

DRAFT ENVIRONMENTAL DOCUMENT

Roadway Predesign Section	Predesign Project Manager	1
Environmental Planning Group	Project Environmental Planner	3

Note: The draft environmental document will be distributed to FHWA by Environmental Planning Group.

INITIAL IMPLEMENTATION PLAN

Roadway Predesign Section	Predesign Project Manager	15

Note: The Initial Implementation Plan will be distributed by Roadway Predesign Section. The Consultant shall furnish a distribution list with complete mailing addresses. **The number of copies to be printed should be confirmed with the Predesign Project Manager prior to printing.**

CHANGE OF ACCESS REPORT

Roadway Predesign Section	Predesign Project Manager	2

FINAL AASHTO CONTROLLING DESIGN CRITERIA REPORT AND REQUEST FOR DESIGN EXCEPTIONS

Roadway Predesign Section	Predesign Project Manager	2

Note: The Final AASHTO Controlling Design Criteria Report and Request for Design Exceptions will be forwarded. by Roadway Predesign Section, to the Assistant State Engineer (Roadway Group) or the FHWA for approval of Design Exceptions.

FINAL LOCATION/DESIGN CONCEPT REPORT

Roadway Predesign Section	Predesign Project Manager	15

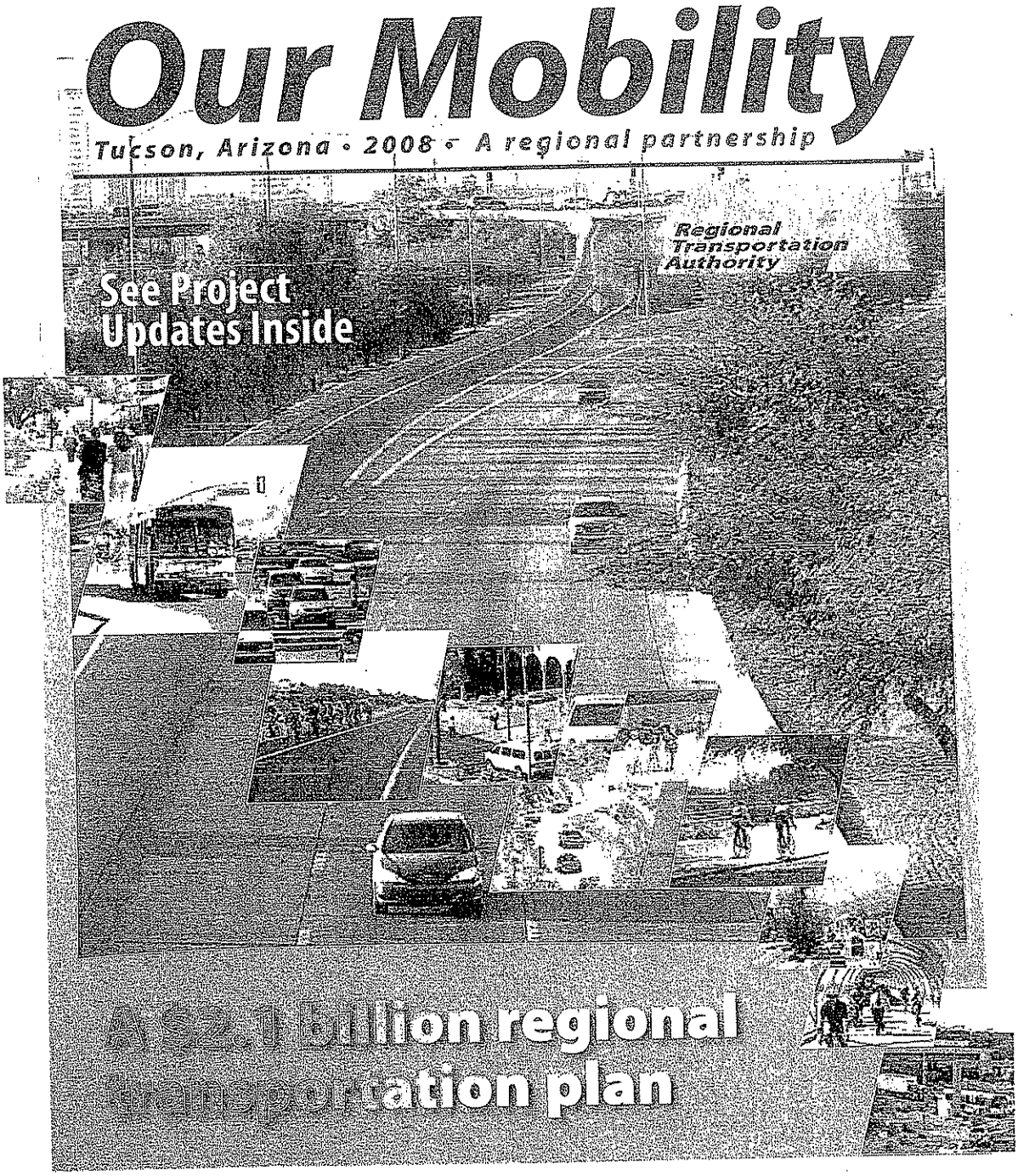
Note: The Final Location Design Concept Report will be distributed by Roadway Studies Section. The Consultant shall furnish a distribution list with complete mailing addresses. **The number of copies to be printed should be confirmed with the Predesign Project Manager prior to printing.**

FINAL ENVIRONMENTAL DOCUMENT

Roadway Predesign Section	Predesign Project Manager	10
Environmental Planning Group	Manager	2

Note: The environmental document will be distributed by Environmental Planning Group and Roadway Predesign Section. The Consultant shall furnish a distribution list with complete mailing addresses. **The number of copies to be printed should be confirmed with the Predesign Project Manager prior to printing.**

REGIONAL TRANSPORTATION AUTHORITY CHART
APPENDIX D



REGIONAL TRANSPORTATION AUTHORITY CHART (continuation)
APPENDIX D

Project list in 2006 dollars (constant)

	Roadway Improvement Element	RTA Project Budgets ★ (000's)	Committed [illegible] ♦ (000's)	Construction Start Period ◆
1	Tangerine Rd., I-10 to La Cañada Drive: Widen to 4-lane divided desert parkway, bike lanes, drainage & turn lanes	$ 45,325	$ 28,890	2nd, 3rd & 4th Periods
2	Camino de Mañana, Tangerine Rd. to Linda Vista: New 2 & 4-lane roadway, bike lanes & drainage	$ 6,185	$ 9,500	1st Period
3	Twin Peaks Rd., Silverbell Rd. to I-10 (including I-10 traffic interchange): Bridge over Santa Cruz, new 4-lane roadway connecting to I-10	$ 30,752	$ 45,670	1st Period
4	La Cholla Boulevard, Tangerine Rd. to Magee Rd.: Widen to 4-lane desert parkway, bridge over Cañada del Oro wash, bike lanes & drainage	$ 42,233	$ 6,100	2nd & 4th Periods
5	Silverbell Rd., Ina Rd. to Grant Rd.: Widen to 3 & 4-lane divided desert parkway, drainage improvements & bike lanes	$ 42,653	$ 14,400	2nd & 4th Periods
6	Railroad Overpass at Ina Rd. east of I-10: Roadway and railroad separation, eliminates at-grade rail crossing	$ 34,218	$ 20,165	2nd Period
7	Magee Rd./Cortaro Farms Rd., La Cañada Dr. to Thornydale Rd.: 4-lane divided arterial, eliminates jog at La Cholla Blvd., bike lanes & sidewalks	$ 29,570	$ 3,700	1st Period
8	Sunset Rd., Silverbell Rd. to I-10 to River Rd.: New 3-lane arterial, bridge over Santa Cruz & bike lanes	$ 12,764	$ 10,000	3rd Period
9	Ruthrauff @ I-10/ RR Overpass: Roadway and railroad separation, eliminates at-grade rail crossing	$ 59,364	$ -	3rd Period
10	La Cholla Blvd, River Rd. to Ruthrauff Rd.: Widen to 6-lane desert parkway, new bridge at Rillito River, bike lanes & sidewalks	$ 14,760	$ -	1st Period
11	La Cañada Drive, Calle Concordia to RiverRd.: Widen to 4-lane arterial roadway, equestrian trial, drainage & multi-use lanes	$ 27,665	$ 14,066	1st Period
12	Magee Rd., La Cañada Drive to Oracle Rd.: Widen to 4-lane arterial roadway, bike lanes & sidewalks	$ 5,850	$ 3,750	2nd Period
13	First Ave., Orange Grove Rd. to Ina Rd.: Widen to 4-lane arterial roadway, bike lanes & sidewalks	$ 6,556	$ 700	4th Period
14	First Ave., River Rd. to Grant Rd.: Widen to 6-lane roadway, bike lanes & sidewalks	$ 71,398	$ 3,000	3rd Period
15	Railroad Underpass at Grant Rd.: Expand railroad underpass east of I-10 to accommodate 6-lanes .	$ 37,382	$ 319	3rd Period
16	Downtown Links, I-10 to Broadway Rd.: New 4-lane urban linkage, enhanced multi-modal features, drainage & noise mitigation measures	$ 76,134	$ 8,540	2nd & 3rd Periods
17	Broadway Blvd., Euclid Ave. to Country Club Rd.: Widen roadway to 6-lane arterial plus 2 dedicated bus lanes, bike lanes & sidewalks	$ 42,125	$ 29,222	2nd Period
18	Grant Rd., Oracle Rd. to Swan Rd.: Widen to 6-lane arterial, streetscaping, bike lanes & sidewalks	$ 160,850	$ 6,000	2nd, 3rd & 4th Periods
19	22nd St., I-10 to Tucson Blvd./Barraza-Aviation Pkwy.: Widen to 6 lanes, 6-lane bridge over railroad tracks, bicycle lanes & sidewalks	$ 104,952	$ 3,000	2nd & 3rd Periods
20	Barraza/Aviation Pkwy., Palo Verde Rd. to I-10: Advanced right-of-way funding for future connection of Parkway with I-10	$ 19,600	$ -	Design & Right-of-way only
21	Valencia Rd., Ajo Rd. to Mark Rd.: Widen to 4-lane desert parkway, bike lanes & sidewalks	$ 15,057	$ 23,100	2nd Period
22	Irvington Rd., Santa Cruz River to east of I-19: Improve intersections, provide access management, bike lanes & sidewalks	$ 9,800	$ -	4th Period
23	Valencia Rd., I-19 to Alvernon Way: Access management improvements, safety improvements & intersections improvements	$ 9,800	$ -	4th Period
24	Valencia Rd., Alvernon Rd. to Kolb Rd: Widen to 6-lane desert parkway, bike lanes & sidewalks	$ 43,298	$ 3,000	2nd Period
25	Valencia Rd., Kolb Rd. to Houghton Rd.: Widen to 6-lane desert parkway, bike lanes & sidewalks	$ 25,882	$ 9,000	3rd Period
26	Kolb Rd. Connection with Sabino Canyon Rd.: New 4-lane roadway connecting Sabino Canyon Rd. with Kolb Rd., bike lanes & sidewalks	$ 9,115	$ -	1st Period
27	Tanque Verde Rd., Catalina Highway to Houghton Rd.: Widen to 4-lane roadway, bike lanes & sidewalks	$ 12,833	$ -	1st Period

RESPONSIBILITY CHART
APPENDIX E

(To be used as a guide only. Will be subsequently developed to meet Plan Development Stage II specific needs)

	ITEM	SCOPE SECTION	CONSULTANT	ADOT	OTHERS
A.	**AERIAL MAPPING**	410			
1.	Geodetic Control			X	
2.	Photogrammetric Control & Panels			X	
3.	Aerial Photography			X	
4.	Plotter Compilation			X	
	a. Planimetric Map			X	
	b. Contour			X	
	c. Topographic Map			X	
B.	**CONTROL SURVEYS**	410			
1.	Geodetic Control			X	
2.	Horizontal			X	
3.	Vertical			X	
4.	Topographic Map			X	
5.	Utility Locations		X		
6.	Right-of-Way			X	
7.	Roadway Cross Sections		X	X	
8.	Drainage Cross Sections		X	X	
9.	Structures Surveys			X	
C	**ENVIRONMENTAL**	420			
1.	Environmental Analysis Document	421	X		
2.	Air Quality Technical Report	422	X		
3.	Noise Analysis Technical Report	422	X		
4.	Cultural Resources Survey	423	X		
D.	**MATERIALS INVESTIGATION**	415			
1.	Provide Soil Survey	416		X	
	a. Roadway			X	
	b. Lateral Ditches			X	
	c. Earthwork	417		X	
	d. Retention/Detention Ponds			X	
2.	Provide Final Bridge Foundation and Retaining/Sound Wall Foundation Investigations	416		X	
3.	Provide Testing and Analysis	417		X	
4.	Provide Final Pavement Design	419		X	
5.	Preliminary Materials Memorandum	419		X	

RESPONSIBILITY CHART (continuation)
APPENDIX E

(To be used as a guide only. Will be subsequently developed to meet project specific needs)

	ITEM	SCOPE SECTION	CONSULTANT	ADOT	OTHERS
E.	**DESIGN TRAFFIC DATA**	460			
1.	Gather Statistics		X		
	a. 2-Way ADT		X		
	b. Turning Movements		X		
	c. 24 Hour Traffic Counts		X		
2.	Prepare Traffic Data Sheets		X		
3.	Prepare Equivalent 18 Kips		X		
4.	Prepare Traffic Analysis		X		
5.	L.O.S. Analysis		X		
6.	Comp. Traffic Control Device Plan	467	X		
F.	**RIGHT-OF-WAY**	470			
1.	Develop Requirements	471	X		
2.	Secure Title Search	472		X	
3.	Prepare R/W Plans and Legal Descriptions	472		X	
4.	Prepare Transfer Documents	472		X	
5.	Provide Appraisals	472		X	
6.	Negotiate Right-of-Way	472		X	
7.	Condemnation Proceedings	472		X	
8.	Testify in Court (by contract modification)	472	X	X	X
9.	R/W Cost Estimates	472	X		
10.	Relocation Assistance	472		X	
11.	Property Management	472		X	
12.	Clearance Letter	472	X	X	
G.	**CONSTRUCTION PLANS**				
1.	Plot Design Survey	410			
2.	Roadway Plans & Retaining/Sound Wall Design	440	X		
3.	Drainage Design	450	X		
4.	Bridge Design	(445)	X		
5.	Roadway Lighting Plans	(464)	X		
6.	Traffic Signal Plans	(464)	X		
7.	Signing & Pvmt Marking Plans	465-466	X		
8.	Utility Adjustment Plans	433	X		
9.	Maintenance of Traffic Requirements	462	X		
10.	Landscape Architectural Design	455	X		
11.	Architectural Design		X		
12.	Plumbing and Mechanical Design		X		
13.	Electrical		X		

RESPONSIBILITY CHART (continuation)
APPENDIX E

(To be used as a guide only. Will be subsequently developed to meet project specific needs)

	ITEM	SCOPE SECTION	CONSULTANT	ADOT	OTHERS
H.	**SECTION 404 PERMIT**	453			
1.	Coordinate with Permitting Agencies		X	X	
2.	Prepare Permit Application		X		
	a. Forms		X		
	b. Sketches		X		
	c. Hydraulic Calculations		X		
	d. Supporting Documents		X		
3.	Process Permit Application			X	
I.	**UTILITY & RAILROAD**	430			
1.	Utilities Conflict Identification	431	X		
2.	Prior Rights Information		X		
3.	Conduct Utility Pre-Design Conference		X		
4.	Review Utility Adjustment Plans		X		
5.	Secure Utility Relocation Schedule		X		
6.	Secure Utility Agreements		X	X	
7.	Process Relocation Schedule & Agreement		X	X	
8.	Clearance Letter		X	X	
J.	**COST ESTIMATES**	480			
1.	Prepare Construction Cost Estimates		X		
2.	Prepare R/W Cost Estimates		X	X	
K.	**SPECIAL PROVISIONS**				
1.	Roadway Construction Plans		X		
2.	Bridge Plans		X		
3.	Signing & Pavement Markings		X		
4.	Traffic Signal Plans		X		
5.	Preparation for pre-bid conference		X		
6.	Attend pre-bid conference		X		

RESPONSIBILITY CHART (continuation)
APPENDIX E

(To be used as a guide only. Will be subsequently developed to meet project specific needs)

	ITEM	SCOPE SECTION	CONSULTANT	ADOT	OTHERS
L.	**CONTRACTS AND SPECIFICATIONS**	490			
1.	Respond to questions on Final		X		
2.	Final Revisions		X		
3.	Addenda to Final, as required		X		
4.	Preparation for pre-bid conference		X	X	
5.	Attend pre-bid conference		X		
M.	**POST DESIGN SERVICES**	600			
1.	Respond to questions on project under construction		X		
2.	Review and approve shop drawings		X		
3.	Provide contact person		X		
N.	**VALUE ANALYSIS**	1050			
1.	Roadway Construction Plans Review		X		
2.	Bridge Construction Plans Review		X		
3.	R/W Plans Review		X		
O.	**SUBMITTAL REVIEWS**	1060			
1.	Roadway Construction Plans Review		X	X	
2.	Bridge Construction Plans Review		X	X	
3.	Design Concept Report Submittal	1061	X	X	
4.	Environmental Reports	1062	X	X	
5.	Stage I Design Submittal	1063	X	X	
6.	Stage II Design Submittal	1064	X	X	
7.	Stage III Design Submittal	1065	X	X	
8.	Final Design Submittal	1066	X	X	

The following is the distribution of reports, plans, estimates and special provisions as specified in Paragraph 1060 of the Scope of Work.

DISTRIBUTIONS LIST
APPENDIX F

(To be used as a guide only. Will be subsequently developed to meet project specific needs)

PLANS – SPECIAL PROVISIONS – COST ESTIMATES (Stage I, II)

Location	Title	No. of copies
Bridge Group	Bridge Design Leader	1
Contracts & Specifications	Transportation Engineer	1
District	Development Technician	4
Environmental Planning	Manager	1
FHWA	Area Engineer	1
Materials	Pavement Design Section Engineer	1
Materials	Geotechnical Design Section Engineer	1
Materials	Geotechnical Operations Section Engineer	1
Right-of-Way- Plans	Manager	1
Roadside Development	Manager	1
Roadway Design Section	Engineer-Manager	1
Roadway Drainage Section	Engineer-Manager	1
Roadway Predesign Section	Engineer-Manager	1
Statewide Project Mgmt Section	Project Manager	1
Traffic Design	Traffic Engineer	1
Utilities & Railroad	Engineer-Manager	1

CROSS SECTIONS, if required

District	Development Technician	4
Materials	Geotechnical Design Section Engineer	1
Materials	Geotechnical Operations Section Engineer	1
Roadway Design Section	Engineer-Manager	1
Roadway Predesign Section	Engineer- Manager	1
Statewide Project Mgmt Section	Project Manager	1
Traffic Design	Traffic Engineer	1

AASHTO REPORT, if required

Roadway Group	Assistant State Engineer	2
Statewide Project Mgmt Section	Project Manager	1

DISTRIBUTIONS LIST (continuation)
APPENDIX F

(To be used as a guide only. Will be subsequently developed to meet project specific needs)

Location	Title	No. of copies
	DRAINAGE REPORT	
Bridge Group	Bridge Design Leader	1
Bridge Group	Bridge Drainage Design Leader	1
District	Development Technician	1
Roadway Drainage Section	Engineer-Manager	1
Roadway Design Section	Engineer-Manager	1
	FOUNDATION REPORT, if required	
Bridge Group	Bridge Design leader	2
Materials	Geotechnical Design Section Engineer	3
	GEOTECHNICAL REPORT	
Materials	Pavement Design Section Engineer	1
Materials	Geotechnical Design Section Engineer	3
	MATERIALS DESIGN REPORT/PAVEMENT DESIGNS	
Contacts & Specifications	Transportation Engineer	1
District	Development Technician	1
Materials	Pavement Design Section Engineer	3
Statewide Project Mgmt Section	Project Manager	1
UTILITY REPORT		
District	Development Technician	1
Utilities & Railroad	Engineer-Manager	5
Statewide Project Mgmt Section	Project Manager	1

APPENDIX G

FINAL COST PROPOSAL

APPENDIX H

PAYMENT REPORT FORMAT

APPENDIX I

EVALUATION SCHEDULE

APPENDIX J

ARIZONA DEPARTMENT OF TRANSPORTATION

INTERMODAL TRANSPORTATION DIVISION
PRE-DESIGN SECTION

PART B:

DICTIONARY
OF
STANDARDIZED WORK TASKS

June 27, 2008

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PART B: DICTIONARY OF STANDARDIZED WORK TASKS

.1 SECTION 400 - DESIGN WORK PERFORMED BY CONSULTANT

The Consultant shall be responsible for providing the engineering services required to accomplish the work products identified in the Project Scope of Work. The services may include the tasks of data preparation, data interpretation, and document preparation including scoping documents, reports, corridor management plans, contract plans, special provisions, construction estimate, and post-design services.

402 Partnering Process

The Consultant and subconsultants shall participate in a Partnering Process consisting of the following items:

- Scope Clarification Meeting
- Design Partnering Kick-Off Workshop
- Participation in the Partnering Evaluation Program (PEP)
- Construction Partnering Workshop
- Project Close-Out

405 AASHTO Design Criteria Report

Any changes to the design criteria which result in the need for a design exception shall be submitted to the Roadway Design Group for approval. The request shall describe the deficiencies not previously approved which are not being corrected, and the justification for the design exception. The report shall be developed consistent with the Design Exception and Design Variance Process Guide that can be found in the Roadway Design Section website under design memorandums (dated 1/16/2007). ADOT will forward the design exception request to FHWA, if necessary. The Consultant is responsible for providing copies for ADOT and FHWA. The request shall be submitted a minimum of fifteen (15) calendars days prior to the Stage II design submittal, in accordance with Section 1060.

410 Surveys and Mapping

The Consultant shall review data provided by ADOT. Any field surveys required shall be suitable for contract documents preparation and meet the technical requirements of ADOT and the State Board of Technical Registration.

A. All surveys and mapping for projects utilizing existing roadway(s) shall be referenced and tied directly to the existing as-built roadway centerline. The centerline shall be re-established in its original position by locating, marking, staking and referencing the PC, PT, TS, SC, CS, ST, PI (if possible), and a minimum of fifty (50) feet station intervals along the curves and one hundred (100) feet station intervals on tangents. The use of offset baselines for re-establishing or defining the existing centerline is not permitted unless approved in advance by ADOT. The centerline stationing of the project shall be on ADOT's established field stationing.

B. Completed surveys shall be submitted in permanently bound books (3-ring binders are not acceptable) with the final plans. The surveys shall include locations, stakes and references of control points, (including the beginning and ending points of the project), PC's, PT's, TS's, SC's, CS's, ST's, and PI's (if possible) of curves, POT's with a maximum interval of one thousand (1,000) feet, and bench marks on alternate sides of the roadway with a maximum interval of five hundred (500) feet. Any survey data provided must be certified by an Arizona Registered Land Surveyor. Any coordinates used shall comply with the Arizona State Plane Coordinate System.

C. Surveys may include, as applicable:

1. Base line control

2. Control for aerial mapping

3. Right-of-Way surveys

   a) Section corner and land ties

   b) Existing right of way monumentation

   c) Staking of new right of way for appraisal purposes

   d) New right of way monumentation

   e) A "Results of Survey" map

4. Topographic surveys

5. Roadway drainage surveys

6. Utility locating - set control points with coordinates and elevations at five hundred (500) ft. maximum intervals adjacent to the road and along the utility lines (See Section 430)

7. Centerline staking, centerline of each roadway, as applicable for field review (lath stakes at PC, TS, SC, CS, ST, PT, and PI (if possible) at approximate two hundred (200) ft. intervals, and at selected locations if required to define the approximate limits of construction).

8. Centerline and edge elevations of existing pavement at fifty (50) ft. intervals

9. Ties to Arizona State Plane Coordinates

10. Final alignment staking

11. Crossroads tie-ins, turnouts and driveways

12. Above ground utilities

D. The Consultant shall obtain any permits that may be required prior to beginning field work. A traffic control plan may also be required. Preparation of surveys shall conform to applicable documents referenced in Section 200 of the scope of work, including (but not necessarily limited to) procedures, record-keeping requirements, equipment use, and safety precautions.

E. Unless otherwise directed by the ADOT project manager, the Consultant shall be responsible for selecting a scale that results in good plan clarity. The following scales are suggested:

1. 1" = 500' (Drainage map and R/W key sheet)

2. 1" = 50' (Construction Plans and R/W maps)

3. 1" = 30' (Landscape and Irrigation Plans)

4. 1" = 20' (Intersections, urban streets, and other items of considerable detail)

F. The Consultant may be responsible for setting R/W markers. R/W markers shall be set by an Arizona Registered Land Surveyor after acquisition of R/W, or, in some instances, after construction. All R/W drawings and legal instruments shall be approved and sealed by an Arizona Registered Land Surveyor.

G. The Consultant may be responsible for delineating the R/W so that utility companies may prepare relocation plans. Delineation with strips of plastic flagging attached to lath located at intervals shall provide a clear delineation of the R/W; this work shall be completed immediately prior to the date that utility company personnel are scheduled to conduct a field survey of the project.

H. Completed surveys and maps shall be recorded in an acceptable format. Upon final approval, the books, maps and CADD files, shall be submitted to the ADOT project manager.

In addition to the CADD requirements stated in section 1040, all designers of ADOT projects shall provide the following information, if applicable to the project, to the Engineering Survey Section:

- Ground Adjustment Factor (G.A.F.):
- Contour Interval (C.I.):
- Project Scale:
- Horizontal and Vertical Datums:
- Arizona Zone:
- Hard copy of reports including any plots

Based on the Scope of Work, the consultant should select the items, from the list below, to be included with the project information previously described:

a. Hard Copies shall consist of the following:

- Field notes
- Sketches
- Transit and Level books
- Plots
- Reports

b. (.DGN) file containing graphical representation of the project (i.e. Planimetrics and contours).

c. (.3D) file containing graphical representation (i.e. breaklines and random points) to produce the DTM.

d. (.DTM) containing Engineering Surveys approved features that make up a correct surface representation.

e. (.ALG) file containing the project alignments (.RPT) file including curve data from the alignment.

f. ASCII (.CSV) files shall contain the following:

1. File Header information:
   - Project GAF
   - Project Datums
   - Arizona Zone
   - Basis of Alignment
   - Basis of Stationing
   - Basis of Horizontal Control
   - Basis of Elevation
   - Basis of Bearing
2. All Project Control
3. Section Corners
4. R/W Monumentation
5. Structures
6. Edge of pavement
7. Centerline and driving stripes
8. Other features as requested

Note: Two (.CSV) files shall be submitted, one containing the RAW survey data and another containing the Edited survey data.

g. All film negatives used to map a project

h. Scanned images and/or diapositives used to map project

i. Aerotriangulation files used to control photography

j. Orthophotos produced for the mapping project

k. Record of Survey: When requested, Record of Survey shall be in electronic (.DGN / .PDF) format with a stamped original.

l. Pictures: Upon Request pictures shall be taken for all structures including end of pipes and headwalls, caps, and any unnatural terrain feature in a (.JPG or .BMP) file format (check scope of work).

If unclear about items needed for your project, please contact the Engineering Survey Section.

ADOT PROJECT MANAGER:
All survey and photogrammetry projects shall be submitted to the Engineering Survey Section through the ADOT and Consultant Project Manager, for verification of deliverables and archiving purposes. A notification of findings shall be sent to the Project Manager after completion of project review.

415 Materials Design

416 Geotechnical Investigation

Geotechnical requirements contained in the Materials Preliminary Engineering and Design (MPE & D) Manual and AASHTO Manual (Reference Section 200 of the scope of work) on Subsurface Investigations shall be considered as minimum requirements. These requirements are not intended to preclude innovative methods of Geotechnical investigations and testing the Consultant may propose. Laboratories selected by the Consultant to perform construction materials testing and analyses must meet the requirements of ADOT's "System for the Evaluation of Testing Laboratories." The Geotechnical Investigation will include appropriate reports, as required, for bridge and retaining/sound barrier wall designs and pavement design.

Prior to submitting a proposal for geotechnical services, the ADOT Project Manager will schedule a meeting with the prime designer, the geotechnical consultant and the ADOT Geotechnical Design Section project team member. Project geotechnical issues will be discussed at this meeting and a consensus geotechnical work plan will be developed. Any subsequent changes due to access limitations, environmental restrictions, etc., will be reviewed and approved by the ADOT Geotechnical Design Section team member prior to the changed work being performed.

The Consultant Geotechnical Engineer is responsible, but not limited, for the following:

A. The Consultant shall perform a Geotechnical investigation of the project in accordance with the requirements of ADOT - the MPE & D and Materials Testing Manuals. (Reference Section 200 of the scope of work).

B. The Consultant shall secure an access permit from the appropriate agency, if required, which may at a minimum require the preparation of an equipment access plan, description of equipment types, a plan of the test hole locations, etc. The Consultant shall adhere to all traffic control requirements when taking samples on existing roadways. A traffic control plan may be required.

C. The results of the Geotechnical investigation shall be contained in the Geotechnical Report and the Bridge Foundation Report, if applicable. The Geotechnical investigation shall include all necessary sampling and laboratory testing and analyses of materials.

   Upon approval of the Geotechnical report, the Consultant may proceed with preparation of the pavement and/or foundation designs and the Materials Design Memorandum.

D. The Consultant's Geotechnical investigation shall include, but not be limited to the following as appropriate:

1. Roadway structural section requirements and the availability of structural section materials
2. Location and depths of topsoil
3. Soil shrinkage/swell characteristics
4. Slope stability in embankment/excavation locations
5. Groundwater pH and resistivity conditions requiring design considerations
6. Design values for active, at rest, and passive soil pressures
7. Allowable design loads or pressures for each foundation type
8. Design methods for shallow and deep foundations
9. Potential imported borrow site(s) meeting the requirements for the material(s) required (see also Section 417)
10. Design alternatives based on Geotechnical findings

E. The Consultant shall include in the Special Provisions all notes related to materials found on the final construction plans and not already covered by the Specifications.

F. The Geotechnical Consulting Engineer shall submit the following CADD requisites to ADOT Materials Group:

1. One (1) Electronic Copy of the final Geotechnical Design sheets submitted on CD-ROM.
2. One (1) half-size (11"x17") print of the Geotechnical sealed and signed final design sheets.

417 Earthwork

The Consultant shall attempt to achieve an approximate earthwork balance for the project consistent with good engineering practice based upon the type of material and with consideration given to environmental mitigation measures unless otherwise directed. This may be accomplished by: a) refining roadway geometry (alignment and/or profile) utilizing ADOT Standard Drawings C-02 for slopes; b) adjustment of ditch widths and/or back slope rates to obtain excavation of additional suitable material; c) flattening of embankment slopes or creation of 'false cuts' to dispose of excess material; or combinations of a), b) and c). Adjustments shall not adversely affect water quality and must be coordinated with the project team, including the USFS coordinator, if applicable. Cost of additional right-of-way and environmental concerns must be weighed in determining the most feasible solution for the project.

When a project requires borrow or waste sites, the Consultant shall investigate and recommend the site requirements as outlined under paragraphs A, B, C and/or D below:

A. Current ADOT Borrow Pits

The investigation shall begin with a review of current borrow pit information available in the ADOT Material Section. "Current" in this context means that ADOT has or is expected to have licenses for any recommended pits that will not expire until after the estimated construction completion date. Note that ADOT is not necessarily licensed for wasting at all current borrow pits. The results of the investigation shall be included in the Consultant's Geotechnical investigation (see Section 416).

B. Commercial Borrow Pits

Commercial borrow pits are an acceptable alternative to ADOT borrow pits. If recommended, the analysis and test results of the commercial borrow materials shall be included in the Consultant's Geotechnical investigation (see Section 416).

C. New Borrow Pits

The licensing of new borrow pits for ADOT use is a lengthy process and should be considered only in the absence of acceptable current ADOT or commercial borrow pits. If the location, testing and environmental analysis of any new borrow pit is required to complete the design of the project, this work will be added to the contract by contract modification. The analysis and test results shall be contained in a separate report submitted by the Consultant not later than the Stage III submittal.

D. Waste Sites

If it is determined that a designated waste site is required, the Consultant shall investigate and recommend the nearest site where material can be wasted. (See Section 455)

418 Special Materials

In the case where a special material(s), i.e. a material with characteristics and design values out of the normal range, is required to meet exacting design requirements, the Consultant shall coordinate with the ADOT Project Manager, Materials Section, and/or the Engineering District before changing the design or researching the location of such material(s).

419 Pavement Design

A. The Consultant shall prepare a pavement design in accordance with the requirements of the ADOT MPE & D Manual.

B. New pavement design shall conform to the approved AASHTO method. Structural overlay design shall conform to the Structural Overlay Design for Arizona (SODA) method.

C. The Consultant's proposed pavement design recommendation shall be included in the Pavement Design Summary as described in the ADOT MPE & D Manual, section 505.00. "Materials Section Design Report Standard Items" shall be used in the preparation of the pavement design report.

D. The Material Design Memorandum shall contain the Consultant's final recommendations for the proposed pavement design, including recommendations for special provisions and construction procedures, as described in the ADOT MPE & D Manual section 505.00, including the use of "Material Section Design Report Standard Items".

420 Environmental Studies

Activities that require soil and/or vegetation disturbance such as Geotechnical investigations, surveys, etc. may not begin until the appropriate environmental clearance (i.e., cultural resources, hazardous materials, or biological evaluations) is issued. The project's environmental footprint shall consider all utility relocation work required for the project. ADOT Environmental and Enhancement Group, in coordination with the affected federal, state and local agencies and jurisdictions, will issue the required clearance.

425 Public Information Meetings and Public Hearings

The Consultant shall provide staff and/or materials for public information meetings as outlined below if they are found to be necessary. ADOT will be responsible for advertisement and will make arrangements for the public information meeting. ADOT will provide a moderator and any liability insurance required.

A. Public Information Meetings

The Consultant and staff shall be available, at five (5) workdays notice, to attend meetings or make presentation at the request of ADOT. The purpose of these meetings shall be to inform the public of and answer questions regarding the scope, details, and anticipated schedule of the project. Such meetings and presentations may be held at any hours between 8:00 AM and 12:00 midnight on any day of the week, except legal holidays. The Consultant will be responsible, as applicable, for the preparation of graphics, hand-out materials, minutes of the meetings, audiovisual displays and similar material for such meetings. All such materials shall prominently identify ADOT. The Consultant shall expect to work with the team to finalize the agenda for any public meetings.

B. Public Information News Releases

The Consultant and staff shall be available, with one workday of notice, to support the ADOT preparation of newspaper articles, newsletters, flyers, radio and TV announcements, etc. and to assist ADOT with responses to verbal and written questions from the media and the general public. The purpose of these news releases shall be to provide the media and public with the latest information on the project scope, details and schedule of the project.

430 Utilities and Railroads

A. General

All work shall be performed in accordance with ADOT's *Guide for Accommodating Utilities on Highway Right-of-Way* and *Utility Coordination Guide for Design Consultants.*

B. Definitions

Utility - A facility which transmits or distributes communication, cable television, electricity, heat, gas, oil, crude products, water, sewer, waste or any other similar commodity which directly or indirectly serves the public.

Utility Company - A municipality, public service corporation, utility district, etc., which owns and operates utilities that serve the general public. Unless otherwise noted, the procedures to be used with railroad companies will be the same as those used with utility companies.

Prior Rights documentation - Documents showing that the utility company's facility predates the acquisition of the property for highway purposes, or that it occupies an easement or other compensable land right. Such documents provide verification that the State is obligated to compensate the utility company for the cost of relocations or adjustments required to accommodate the highway project.

U & RR - Utility and Railroad Engineering Section of the Arizona Department of Transportation.

C. Previous Information

The Consultant shall use all available utility location information including that obtained during the DCR phase; this information, and additional information gathered later, shall be shown on the plans prior to submittal to the utility companies for review.

D. Identification of Utilities

1. By Design Consultant - The Design Consultant shall contact and coordinate with all the utility companies serving the project area to obtain utility facility location records and as-built information.

2. By Locating Consultant - The Design Consultant shall prepare and furnish a base map with ground controls at intervals of no more than five hundred (500) feet together with a description of the desired area to U & RR for horizontal utility designation. This mapping will be used by the locating consultant for identification and horizontally locating all utilities. This will be accomplished prior to the completion of Stage II plans. The map shall be presented on CDs using current ADOT CADD standards. The Design Consultant shall provide a list of requested potholes to U & RR, for use by the Locating Consultant, for utilities that may conflict with the project. This pothole data will be obtained prior to completion of the Stage III plans.

3. Railroad information - The design Consultant shall request U & RR to make the initial contact with the railroad company to obtain railroad information if railroads are involved in the project prior to the design kickoff meeting.

431 Utilities Conflicts and Adjustments

A. The Consultant shall determine all utility conflicts which require the utility to be relocated or adjusted and shall advise U & RR and the utility company.

B. The Consultant shall advise U & RR of upgrades or betterments requested by utility companies.

C. When property is acquired for a highway project, private utility issues are resolved as part of the right of way acquisition. The Consultant shall coordinate these and any private utility issues with the ADOT Right of Way Coordinator and Project Manager.

D. The Consultant shall arrange and conduct utility coordination meetings to facilitate identification and resolution of conflicts based on project needs as requested by the ADOT Project Manager and the U & RR Coordinator.

E. The Consultant shall be responsible for reviewing relocation plans produced by utility companies to assure that all utility conflicts with project plans and with planned utility relocations are eliminated, that proposed utility installations conform to ADOT's *Guide for Accommodating Utilities on Highway Right-of-Way* and that the plans meet ADOT permit requirements.

F. The Consultant shall solicit submittal of and verify that prior rights documentation submitted by utility companies represent the correct relocation area and shall submit this reviewed documentation to the U & RR coordinator. The request for prior rights shall take place after the Stage II submittal. Complete prior rights documentation shall be submitted to U & RR no later than the Stage III submittal.

G. Only U & RR will authorize utility companies to start design for relocation of their facilities where they have prior rights and want reimbursement for their design.

H. The Consultant shall prepare draft Utility Special Provisions and submit them to U & RR for comment. This includes Section 107, Force Accounts and Line Item Specifications. Specifications shall be drafted starting at Stage III and progress with the project to the PS&E Stage.

I. With each stage submittal listed below the Consultant shall submit a Utility Report. The Report shall detail the recent events with regard to the progress of the utility conflicts and mitigation effort. The efforts made shall be in accordance with a sequence of events established in the *"Utility Coordination Guide For Design Consultants"*.

Within the first thirty (30) days after Notice to Proceed (NTP) the Consultant shall prepare a Utility Report containing a list of all utility companies in the project area, the utility company contact person and their phone number for submittal to U & RR.

At Stage II the Utility Report shall contain an update of the listing provided in item 1 above plus an initial cost evaluation. All right of way necessary for utility relocations shall also be identified.

At Stage III the Utility Report shall contain all of the above plus a list by prior rights of who is responsible for payment of relocation work, a list of the mitigation measures by utility, a summary of the meetings held with each utility company - what was discussed and when, what actions were taken to arrive at the selected mitigation measure, what pothole data were requested and provided, a copy of all correspondence between the Consultant and each utility company, a preliminary estimate of ADOT's cost for utility relocations and betterment requests by utility company for work to be included into the ADOT project. Final mitigation measures shall be approved by the Utility and Railroad Engineering Section.

At Stage IV the Utility Report shall contain all of the above plus any changes to what was previously presented, a notification of approval of utility company relocation plans as to conformity with the project design and standard ADOT procedures and practices, a construction schedule for each utility, a final cost estimate for each utility with approved prior rights, a final cost estimate for each utility desiring betterments be included in with the project design and the Final Utility Clearance Letter.

J. The Consultant is to work closely with the utility company and the U & RR coordinator to determine the relocation requirements of the utility facility. The Consultant shall inform ADOT Right of Way on or before the Stage II submittal if new right of way is required which exceeds what is needed for the highway improvements.

K. ADOT's Roadside Development Section (landscape and irrigation), Transportation Planning Division (Traffic Counter Systems) and Transportation Technology Group (FMS) shall be treated as utilities and consulted about their needs during the project development process. New electric service drops and water connections for planned landscape irrigation systems, lighting, traffic signals and FMS facilities shall be included in the scope of the project.

432 Utility Plans

A. The Consultant shall indicate all existing utilities in plan view on the Stage II plans; this should include utility poles, pedestals and other aboveground appurtenances with an indication of overhead line direction and all underground utilities, including drainage facilities.

B. The Consultant shall indicate potential areas of conflict between utility facilities and project improvements. The Consultant shall work with the utilities to resolve all conflicts. Project plans are to be adjusted as much as possible to avoid utility conflicts without impacting the needs of the project or public safety. Vertical locations of underground utilities shall be shown in profiles and on cross sections or details at Stage II at approximate normal elevation. Pothole data will be made available to utility companies no later than Stage III plans.

C. The Consultant shall furnish copies of the Stage II, III, IV and PS&E project plans to U & RR and each utility which has facilities in the area. The Consultant shall furnish copies of cross sections to U & RR and, upon request, to the utility company. Cross section plans will be required when existing utility facilities have been installed parallel to the roadway centerline within ADOT's right of way. Cross section plans shall show the location and depth of utilities running parallel to the roadway centerline. The size of the plans, 1/2 size or full size, shall be as requested by the utilities. In all cases, plans shall be scaleable, i.e., full size or true half-size. The Consultant shall send plans to the utility companies, receive the comments and responses, and provide U & RR copies of all correspondence to and from the utility

companies. Utility comments and their resolutions shall be included on the appropriate Stage Comment Resolution Form and distributed to all team members ten working days after the Comment Resolution Meeting.

D. The Consultant shall include utility relocation plans no later than the Stage IV submittal.

433 Utility Relocations and Adjustments

Where a utility relocation may be required:

A. The Consultant shall identify possible alternatives (including joint use of trenches) to minimize the number of utility conflicts and minimize the cost of mitigating conflicts.

B. The Consultant shall notify U & RR promptly upon determination that relocation of a utility company facility is required. Where the utility relocation is to be included as part of the project and where the ADOT contractor will perform the work, the Consultant shall provide U & RR with design cost details, drawings and a summary of the construction costs for the work to be billed. The Consultant shall use input and drawings supplied by the utility company to the extent possible.

C. U & RR will determine, by examination of prior rights documentation provided by the utility company, the utility's rights to occupy the area of conflict and who is responsible for the cost of the relocation. U & RR will notify the utility company to relocate at its own expense, or will obtain the necessary cost estimates and prepare the necessary utility agreements to allow for payment of utility relocation work when it is at ADOT expense.

D. At the request of the utility and/or the U & RR coordinator, utility adjustments or installations may be included in the plans and specifications for work to be performed by ADOT's contractor. This may require a JPA or Utility Agreement between the utility and ADOT. The Project Manager will prepare a JPA and the U & RR coordinator will prepare a Utility Agreement. The decision to include this work shall be determined no later than the Stage III submittal date. Initial cost estimates shall be provided with the Stage III submittal to assist programming and budgeting efforts.

1. Utilities with prior rights--ADOT is responsible for cost:

   a. Consultant shall advise U & RR of utility company's request for work to be included with ADOT's contract.

   b. Consultant shall provide an estimate of the cost, or review and comment on cost estimates provided by the utility company.

   c. Consultant shall cooperate with each utility company to ensure that adequate information is included in the bid package.

2. Additions, betterments, and utilities lacking prior rights--utility company is responsible for cost:

a. Consultant shall advise U & RR of utility company's request, and shall advise the utility company that approval of its request is subject to concurrence by ADOT.

b. Consultant shall provide an estimate of the cost, or review and comment on cost estimates provided by the utility company.

c. Consultant shall cooperate with utility company to ensure that adequate information is included in the bid package.

d. The Consultant shall provide U & RR and the Project Manager the actual cost of design and expenses for utility relocation and adjustments for inclusion in the JPA or Utility Agreement.

434 Utility Special Provisions and Clearance Letter

A. Special Provisions

The Consultant shall prepare Special Provisions and submit them to each affected utility company and U & RR for comment at Stage III, IV and at PS&E.

The Utility Special Provisions shall include the following:

1. List of utility companies in the area, and contact person's name and telephone number.

2. A statement that there are no utility conflicts or a list of utilities that are in conflict.

3. Work to be performed by utility companies in conjunction with the contractor during project construction.

4. Completion date or schedule for each utility conflict to be resolved by each utility company.

5. Work to be performed for each utility company by the Contractor.

Utility license, permit, insurance, or right of entry requirements.

Indication of all workday windows or any restrictions required by the utility the contractor should be aware of for construction scheduling purposes, including utility outage/shut-down limitations.

Indicate special conditions, locations or clarifications in direction related to utility facilities or work that might affect a contractor's bid or schedule.

B. Clearance Letter

The Consultant shall prepare a Utility Clearance Letter prior to Stage IV and submit it at Stage IV, together with copies of correspondence from utility companies verifying the information, to U & RR for review and concurrence; this shall include the Consultant's final review and submittal of Section 107 or other Special Provisions related to utility work.

1. If there are no conflicts:

   A statement that there are no utility conflicts with the project shall be used only when there are no utility facilities needing adjustment or when all adjustments have been completed prior to writing the Clearance Letter.

2. If adjustments are needed:

   The Clearance Letter shall list each utility company separately, showing:

   a. The name of the company, address, contact name and phone number.

   b. The nature of required adjustment

   c. The status of Agreements and applicable permits (City, County, Forest, State Land, etc.)

   d. The status of the utility adjustment

      (1) Completed

      (2) To be done by contractor during construction

      (3) To be done by utility company during construction, with estimated completion date or number of working days required following milestone achievement

      (4) In progress, with estimated completion date

435 Establishing Utility Service Connection

Utility service connections are required to facilitate operation of lighting, signals, irrigation controllers, pump stations and FMS systems, etc. The Consultant is responsible for securing establishment of service connections prior to construction.

A. Steps for securing service:

Consultant shall determine service need(s) based upon concept and preliminary work; this shall be done shortly after Stage II submittal.

Consultant shall determine which utility serves the area and who the utility's coordinator is; this shall be done within thirty (30) days after NTP.

Consultant shall meet with the utility's Coordinator to review the project's proposed construction and determine how service can be brought to the desired location(s). Preferred location for service Load Centers and meters is just inside ADOT right of way and outside Controlled Access; this shall be done shortly after the Stage III submittal.

Consultant shall prepare a service request letter on ADOT letterhead for ADOT signature to the utility with a copy to U & RR that contains the following:

a. Number of electrical services required

b. The address of each service

c. The required voltage/volume/pressure of each service

d. The load breakdown for each service

e. A brief description of the work required

f. Who is responsible for signing the utility's service agreement and who will pay connection/extension charges.

g. Who is responsible for paying the utility bills and to whom and where to send the monthly billings

The Consultant shall receive and review the service agreement from the utility company which will provide service at the location(s) requested in the service request letter.

The Consultant shall forward service agreements to the ADOT utility coordinator to complete the agreement signing process and prepare the applicable payment agreement.

The Consultant shall include the name and phone number of the utility contact person responsible for arranging the new service in the Special Provisions with instruction to the Resident Engineer to contact the utility for scheduling the work when service is desired.

Consultant shall place the service address on the plans adjacent to the appropriate Load Center and/or meter.

Consultant shall show the location of the utility service source so the contractor will know where to excavate to/from.

The service agreement shall be signed shortly after the Stage IV (95%) submittal

B. The Consultant shall assist in the development of exhibits for transfer of right of way to utilities with prior rights.

440 Roadway Design

The Consultant shall prepare design plans on ADOT standard sheets and construction documents for the roadway improvements including but not limited to the following:

A. Face sheet and List of Standard Drawings (ADOT will provide these sheets for incorporation into the design plans)

B. General notes

C. Design sheet and index

D. Typical roadway and detour sections

E. Roadway and detour plans and profiles

F. Intersection plans and profiles, including staking plans

G. Cross road and frontage road plans and profiles

H. Retaining wall and sound barrier wall plans and profiles

I. Earthwork quantities

J. Details

K. Special provisions

L. Annotated cross sections

L. Arizona State Plane Coordinate Ties

NOTES:

Standard plan sheet size is 22" x 34" (ANSI "D" Size) with borders as specified by ADOT. All plan sheets shall be suitable for plotting at true half scale.

Cross sections will not be part of the plans, but will be reviewed and made available to contractor's bidding on the project. Therefore, the cross sections must be suitable for reproduction. Horizontal and vertical scales shall be the same. Preferred scale: 1"=10', (1"=5' or 1"=20' are also acceptable if special conditions warrant). Each cross section shall show the plotted finished grade roadway template(s) including the subgrade superimposed on the plotted natural terrain (dashed line) and shall include as a minimum the following annotation: centerline finished grade elevation and station value of controlling roadway template on each cross section, R/W limits indicated with symbol. Slope rates (X:1) should be shown on the cross sections, on each side of the controlling roadway, on the last slope that connects to the existing ground. Connecting slopes from adjoining roadways, such as median slopes, should have both connecting slopes annotated, if applicable. The slope rate information may be provided separately in a station by station listing as an alternative. Construction phasing, temporary roadways and detours shall be shown on cross sections, if applicable. CADD computer generated cross sections shall be plotted with a 1" grid and shall have an appropriate horizontal and vertical tick marks (10 tick marks per inch) with 1" datum annotations (elevation on vertical and distance on horizontal) and shall be plotted on vellum paper suitable for reproduction.

The final submittal shall be on standard 22"x 34" sheets submitted with a copy of the work on CD as stated in section 1040. Cross sections shall normally be prepared at one hundred (100) foot intervals, as a minimum, with additional sections at breaks in the terrain unless otherwise directed by the ADOT project manager. Cross sections shall be included in all submittals to utility companies and as requested by other members of the team.

3. All designs shall conform to the latest Americans with Disabilities Act Accessibility Guidelines Title I and II.

4. The Consultant shall provide the various ADOT Technical Sections involved in the design of this project with roadway base sheets as required.

445 Bridge Design

The Consultant shall prepare design and construction documents for structural design including, but not necessarily limited to:

A. General plan

B. General notes and quantities

C. Foundation sheets

D. Abutment details

E. Pier details

F. Superstructure sheets

G. Screed elevations

H. Special details (if applicable)

I. Stage construction sequencing details (if applicable)

J. Pile records (if applicable)

K. Special provisions and cost estimates

In addition to the general CADD requirements (See section 1040), the consultant shall use the following identification labeling in ALL CADD files:

a. Structure Number (4 digit number)
b. Structure Name (i.e. Apprentice Wash Bridge)
c. Type of work category:
   - Major Structure – New Bridge
   - Bridge Replacement

- Minor Structure
- Deck Rehabilitation
- Hinge, Deck or Joint Repair
- Barrier Replacement
- Bridge Widening
- Scour Protection
- Seismic Retrofit

446 Bridge Selection Report

During Stage II, prior to preparation of final design and construction documents, the Consultant shall submit a Bridge Selection Report for the new bridge and/or for renovation of the existing bridge. The report shall be prepared in accordance with the ADOT Bridge Designing and Detailing manual. ADOT must approve the report prior to the Consultant beginning the final design of the bridge.

The final structural plans shall reflect the most current design standards, specifications and ADOT policy. Therefore, the Consultant shall be responsible for studying revisions to the plans made during the development of the project and ascertaining how the structural design will be affected. The Consultant shall work with the ADOT project manager, who will give the final authorization, in determining the propriety of modifying the design to accommodate the revised standards, specifications and ADOT policy. The Consultant will be compensated by Contract Modification for any significant redesign resulting from this requirement. A final review of the applicable standards and specifications will be conducted by the Consultant at Stage IV.

450 Drainage Design

451 Drainage Reports

A. The Consultant shall be responsible for preparing the Initial and Final Drainage Reports for drainage.

B. The Consultant shall conduct hydrologic and hydraulic analysis and/or obtain available public information to identify flood plains and probable flood plain impacts. The Consultant shall determine existing and developed conditions, discharges for all pertinent drainage systems, and existing flow patterns; assess possible drainage problems, identify possible solutions, and propose tentative hydraulic improvements.

   Part A of the Initial Drainage Report, hydrologic information, may be submitted and informally discussed with the ADOT Drainage Section prior to detailed hydraulic analysis in order to facilitate proper progress of the study. The Drainage Report may require additional data as it relates to NPDES, i.e., flow analysis in ditches, intersecting drainage's, etc., in order to adequately design temporary erosion control structures.

   Following Part A, Hydrologic Information Review, the Consultant shall conduct hydraulic analyses of proposed flood plain modifications, hydraulic structures, and drainage-related improvements which are proposed. The Consultant will then prepare an Initial Drainage Report consisting of both Part A, Hydrologic, and Part B, Hydraulic, studies and their supporting documentation.

C. The Consultant shall prepare a Final Drainage Report, pursuant to comments and approval of the Initial Drainage Report, based on refined hydraulic structure selections and sizing. The report shall provide analysis of changes to existing flow patterns and the design of channels, culverts and other drainage structures.

D. The Consultant shall submit to ADOT Roadway Drainage Section one electronic copy containing all final drainage reports of the project in digital format (PDF) on a CD-ROM or DVD and one hard copy of the final sealed and signed reports. The reports will include not only the analytical data and computations, but the entire report, including but not limited to texts and graphics.

The Final Drainage Report shall be submitted concurrent with the Stage III Design submittal unless other arrangements are made with the ADOT Project Manager.

452 Drainage Designs

The Consultant shall prepare designs and construction documents for drainage features including, but not limited to:

A. Drainage culverts and underpass structures for cattle/game crossings

B. Catch basins, manholes and connector pipes

C. Drainage Pipe and Concrete Box Culvert Summary Sheets

D. Drainage details

E. Drainage culvert profiles

F. Retention/Detention Basins

453 Section 404 Permit

ADOT with the Consultant, as appropriate, in consultation with the Corps of Engineers, will determine the need for a Section 404 permit. If a permit is required, ADOT will process the permit application. The Consultant shall be responsible for providing ADOT with technical data for the roadway cross drainage-ways (i.e. typical sections, location and approximate areas of cut and fill within each drainage way) to support the determination of need for a permit and/or the permit application.

454 Evaluation of Alternative Pipe Culvert Materials

The Consultant shall be responsible for evaluating all forms of ADOT approved pipe culverts. Evaluation documentation shall be included with the design calculations per Section 1040. Valid designs shall be indicated on the New Pipe Summary Sheet.

455 Landscape Architectural Practice and Design

A. The Landscape Architect shall be responsible for performance of professional services such as investigation, reconnaissance, research, planning, design or responsible supervision in connection with the development of land and incidental water areas where the dominant purpose of such services is the preservation, landscape ecological restoration, enhancement of proper land uses, natural land features ground cover and planting, naturalistic and aesthetic values, the settings and approaches to building, structures, facilities or other improvements, natural drainage and the consideration and the determination of inherent problems of the land relating to erosion wear and tear, light or other hazards.

B. Landscape Architecture services to accomplish the above, may result in the preparation of the following work products including: Reports for Site Analysis and Planning; Visual Analysis; Resource Planning Inventory and Evaluation; Research Information and Documentation; Design and Construction Documents, Specifications, Constructability Reviews, Post Design and Responsible Construction Supervision.

C. Investigation, Reconnaissance Research, Planning, Design and Responsible Supervision Work may include but not be limited to: Aesthetic evaluations and Visual Quality and Impact Analysis to determine appropriate mitigations; Design of Structure and Wall Aesthetic Treatments; Landscaping and Irrigation Systems and when possible Sustainable Landscaping; Landform Grading and Graphics; Water Conservation Measures, Audits and Water Harvesting; Landscape Ecological planning involving Resource Conservation and Protection; Habitat Mitigation Restoration; Reclamation and Revegetation; Native Plant Inventory, Salvage, Replanting and Establishment; Noxious Weed Control; application of Best Management Practices (BMPs) for Erosion and Sediment Control, Water Quality Protection; Storm Water Pollution Prevention Plan (SWPPP) Index Sheet, Erosion and Sediment Control Plans; preparation of Design Construction Plans Documents, Specifications and Estimates.

D. The Landscape Architect consultant shall be responsible for coordination of work with Roadside Development Section during all design phases. Work completed shall be in accordance with AASHTO, ADOT Design Manuals, Guidelines and Policies.

E. The consultant shall complete and Seal Project Plans, Specifications and Estimates necessary for project design development for use by other team members and for bidding and construction. The consultant may be required to provide Responsible Construction Supervision or Construction Contract Administration.

460 Traffic Engineering Design

461 Traffic Engineering Study

The Consultant shall perform a Traffic Engineering Study which addresses those concerns that are appropriate for the project. The study shall provide all necessary data not already furnished by the Department. It is expected that the Consultant will make one or more visits to the project site to familiarize themselves with any issues that may have any bearing on the success of the project.

The Traffic Study should also address the items listed below. The items listed are intended only as a guide and are not meant to necessarily limit the scope of the study:

A. Average Daily Traffic

B. Turning movements at each intersection

C. Accident Data and Analysis

D. Access Control

E. Signing

F. Pavement Markings

G. Pass/No Pass Zones

H. Speed Zones

I. Signal Warrants

J. Left and Right Turn Warrants

K. 30th Hour Design Hour Volume

L. Peak Hour Volume

M. Bicycle Activity

N. Pedestrian Activity (ADA Requirements)

O. Parking

P. School Zones

Q. Appurtenances (guardrail, barriers, etc.)

R. Channelization, Turning Templates

S. Signal Phasing & Timing

T. Capacity

Note: The need for these items will vary depending on the nature and locale of the work.

462 Traffic Control Plans

When required by the complexity of the project, the Consultant shall prepare an appropriate phasing plan for the project. The plan shall be consistent with good constructability, taking into account the contractor's probable approach to the work and the cost and inconvenience to local businesses and residents. Phasing and project duration should be coordinated through the Project manager, the Construction District and Contract & Specifications Services.

Once the project phasing has been determined, the Consultant shall prepare a traffic control plan which may be as simple as a few paragraphs in the Special Provisions outlining which setups in Part VI of the MUTCD or the ADOT supplement are to be used or may be a set of detailed plans showing exact configurations of

traffic control devices for the project. A summary of quantities and duration along with an estimate of costs and any special provisions shall be provided by the Consultant at each stage of the project beginning with Stage II.

New construction, reconstruction, pavement rehabilitation, overlays, bridge widening or repairs and other similar work generally will have a significant impact on traffic operations and will normally require a set of Traffic Control Plans with quantities, duration, unit prices, and special provisions.

The following categories of projects generally have a low impact on traffic operations and do not normally require traffic plans:

A. Landscaping projects of short duration

B. Signal projects

C. Scour protection projects

D. Fencing projects

E. Sound wall projects

F. Signing projects

G. Lighting and other electrical projects

H. Sidewalk and ADA ramp projects

I. Bike lane projects

J. Rest area construction projects

K. Minor surface treatments (Chip Seals)

Special Provision 701 DETRM can be used for projects that fall into the low impact categories. This special provision provides pre-determined unit prices for all of the likely pay items. There are, however, two lump sum items which must be computed. Item 7010001 is intended to provide a summary of the anticipated cost of the devices to be used on the project; this item shows in the bid schedule as a fixed price. The second lump sum item, 7010006, allows the contractor to recover his costs for furnishing, placing, and removing the various devices during the construction.

Two other pay items may be included in the bid schedule, when appropriate. Both items require the contractor to provide a bid amount. The items are 7010010, Temporary Concrete Barrier and 7010012, Temporary Impact Attenuation Devices.

Upon final design approval for any and all work that involves Traffic Engineering/Design, the Traffic Engineering Group requires that the following CADD related deliverables be submitted to the Design Project Manager as indicated in the General Specifications for adherence to ADOT's CADD Standards:

a. All SignCad files shall be submitted in ADOT's current version of SignCad (.SGN).
b. All design CADD files associated with Traffic Design, including Traffic Signals, Signing, Pavement Marking, Traffic Control, Pre-Design, HES Projects, and Permit Designs, shall be submitted in ADOT's current version of MicroStation 2D format (.DGN)(2D).

In addition, a copy of the Letter of Transmittal indicating all Traffic related deliverables have been submitted to ADOT shall be forwarded to the Traffic Engineering Project Manager for approval.

463 Intersection Signalization and Roadway Lighting

The designer shall prepare construction documents for installation of traffic signals. Installations for future signals may require only conduits and pullboxes.

The designer shall comply with ADOT's current lighting policy and provide a complete set of roadway lighting construction documents including, but not limited to:

A. Complete freeway lighting including mainline, entrance and exit gore areas, ramps, and crossroads.

B. Underdeck Lighting.

C. Sign Lighting.

The designer shall in accordance with Section 430 of the Dictionary of Standardized Work Tasks and the project scope of work coordinate with the local electric utility to provide electric service. If warranted, the designer shall advise the project manager of the need for an IGA with the local jurisdiction for funding, maintenance, and energy costs.

464 Signing Plans

The Consultant shall prepare designs for signing that are consistent with current signing practice and in conformance with the Manual on Uniform Traffic Control Devices (MUTCD), the Traffic Engineering Design Manual, the Manual of Approved Signs (MOAS), and Traffic Group's Sign Sheeting Guidelines, dated May 31, 1996. Freeway signing within the MAG system shall in addition conform to the MAG network Signing Plan, dated January 1992.

A signing summary shall be provided in the project plans. Non-standard signs shall be detailed on the project plans following the formats given in the above referenced documents. The signing summary, a detailed estimate of costs, and any special provisions shall be included with each submittal beginning with Stage II.

465 Pavement Marking Plans

The Consultant shall prepare permanent pavement marking designs for the roadways within the project limits to show center, edge and lane line striping, stop lines, crosswalks, arrows, legends, and symbols, raised or recessed pavement markers, object markers, delineation or other markings as may be consistent with the needs of the project and in conformance to the requirements of the MUTCD, the Traffic Design Manual, and the Standard Drawings. The Consultant shall confer with the district representative and Traffic Group to determine which types of marking or delineation materials are appropriate for the project. The summary of quantities, a detailed estimate of costs, and any special provisions shall be included with each submittal beginning with Stage II.

466 Intelligent Transportation Infrastructure

The designer shall prepare construction documents for elements to be included in the project for accommodation of the Intelligent Transportation Infrastructure in accordance with the ADOT Freeway Management System Design Guidelines.

470 Right-of-Way

471 Right-of-Way Requirements Determination

The Consultant shall determine the requirements for new right-of-way (R/W) and easements, including, but not limited to, new roadway R/W, slope easements, drainage easements, temporary construction easements, waste site R/W, access control R/W, borrow source R/W and haul road R/W.

The Consultant shall submit to ADOT, in writing, the preliminary R/W requirements on or before the Stage II design submittal and the final R/W requirements on or before the Stage III design submittal. No revisions or additions to the R/W requirements will be allowed after the Stage III submittal without the approval of the ADOT Project Manager.

The new R/W requirements shall be submitted in triplicate to ADOT for review and shall include the following as a minimum:

A. A letter indicating the project name, contract number, project location, originator of report (Firm's Name), submittal date and submittal type (Stage II or III).

B. A plan of sufficient scale and detail to show the existing and proposed roadway R/W and proposed easements.

C. Type of acquisition required:

   At the Stage II submittal, the new requirements may be estimates of the final R/W with enough definition to identify all ownership's that will be affected. The preliminary requirements should be large enough to cover all possible R/W needs.

   At the Stage III submittal, the new requirements shall be accurately defined with widths, lengths, stations, offsets, etc.

In addition, all R/W plans shall conform to current Right of Way Plans Standards and Manual. When all comments have been addressed, the designers of ADOT projects shall submit the following:

a. Beginning and Ending Mileposts in tenths of a mile.
b. Revised Calculation Book sheets and Point ID sheets, if necessary.
c. An ASCII coordinate electronic file in the following format: Point Number, Northing, Easting and Description using <u>commas as delimiters</u>. Designers of ADOT projects shall ensure that this file is free of extraneous text such as page numbers, headers, batch commands, and the like. The

file shall be such that it can be imported into a COGO program without reformatting by ADOT Right of Way Plans Section. Only numeric numbers shall be accepted.

d. One (1) half-size print of the Final Right of Way Plans set.

e. One (1) full-size set of sealed and signed Mylars trimmed to 22" x 34"

472 Right-of-Way Acquisition

If new R/W is required for the project, ADOT will acquire all necessary R/W and easements. Based on the requirements provided by the Consultant, ADOT will:

A. Prepare final R/W plans and associated documents necessary for R/W acquisition (Final plans may be prepared by others)

B. Acquire necessary R/W including easements, material sites and waste sites

C. Obtain the necessary authority to proceed with the various phases of property acquisition

D. Prepare the necessary data for Transportation Board resolutions and project clearance letters

473 Temporary Entry Documents

A temporary entry document for entry to each parcel for any or all of the following activities is required: Geotechnical investigations, and design or construction survey work. The Consultant shall notify ADOT of the need for any temporary entry documents no later than thirty (30) days after the notice to proceed. ADOT will obtain the appropriate owner's signature. The Consultant may not enter any such property prior to approval of the temporary entry documents by ADOT.

480 Cost Estimates

The Consultant shall prepare combined and detailed estimates (cost estimates) in the format recommended by Contracts and Specifications Section. The cost estimate shall include a recapitulation sheet concurrent with each review submittal. Computer generated estimate forms may be used, provided the format is approved by the Contracts and Specifications Section. At the Stage II review, the Consultant shall prepare a bidding schedule and concurrently with each review submittal thereafter. ADOT will provide the necessary format.

The budgeted cost for the project is indicated in Section 140 of the Scope of Work. The Consultant shall immediately advise ADOT, in writing, if there is any reason to believe the project cannot be constructed within the allocated budget. The Consultant shall identify options to maintain the project within budget, including shortening the project, revising criteria, or phasing changes.

485 Specifications

The Consultant shall be responsible for identifying critical elements of construction, including, but not limited to, construction limits, access requirements, potential night construction, coordination with affected local agencies (police, fire, USFS, etc.), traffic lanes open, scheduling of work time (bar chart format illustrating estimated construction time), utility trench close ups, incentives and liquidated damages, State-furnished

materials, critical materials requiring pre-bid purchase, and limitations specifically addressed in the environmental, right-of-way, and utility clearances.

490 Special Provisions

The Consultant shall prepare Special Provisions for items, details, and procedures not adequately covered by ADOT's Standard Specifications and Stored Specifications. Unusual requirements necessary for obtaining permits for hauling materials shall also be included. Special Provisions shall be submitted at the Stage III and Stage IV project reviews. Final Special Provisions shall be sealed by the Engineer in responsible charge. The Consultant shall be responsible for incorporating any specifications provided by ADOT technical sections into the draft and final Special Provisions. ADOT shall review all submittals of Special Provisions and the Consultant will prepare the final Special Provisions.

495 Contracts and Specifications Process

The Consultant shall, under the direction of ADOT, support the Contracts and Specifications process after completion of the Final Submittal stage leading to the complete bid documents as follows:

A. Promptly answer questions relative to the plans, quantities, and Special Provisions.

B. Make any necessary corrections to the plans, typical sections, Special Provisions, quantities, notes, etc. as required.

C. Prepare any addenda required to clarify the work included in the contract documents as requested by the Contracts & Specifications section. The addenda shall be prepared immediately upon request. Addenda may be required based on the project inspection with the assigned ADOT Resident Engineer, questions developed in the pre-bid conference, or conditions discovered by bidders during the bid period.

D. The Consultant shall, prior to the pre-bid conference be prepared to walk the project with the assigned ADOT Resident Engineer to discuss the plans and details.

E. The Consultant shall be prepared to attend the pre-bid conference, if one is scheduled, and present an appropriately-sized display showing the project layout, proposed traffic control and construction phasing, and shall be prepared to discuss other constraints so that the potential bidders will be better able to relate to the intent of the construction of the project. The Consultant shall respond to questions related to the plans, details and special provisions.

F. The Consultant shall be prepared to assist in the analysis of bids, including: determination of reasonableness and justification of cost variances, analysis of original cost estimate compared to contractor bid costs.

.2 SECTION 600 - POST DESIGN SERVICES

ADOT will coordinate all post-design services and will act as the principal initial contact for post-design questions. The Consultant shall be responsible for the post-design services described below. Post-design services will be added to the contract by contract modification.

A. The Consultant shall be available, within twenty-four (24) hours of notification, to respond to questions in the field that may arise relative to the plans, details, or special provisions during construction.

B. The Consultant shall review and approve shop drawings, erection procedure plans, and form work details, review proposals for substitutions or "approved alternates," assist the resident engineer in developing change orders, and provide other engineering services required to facilitate construction of the project.

C. The Consultant shall appoint a responsible member of the firm to be the contact person for all post-design services; this person shall be continually available during the course of construction for review and updating of design plans.

D. The Consultant shall make every reasonable effort to process any material presented for review in a prompt manner.

E. The Consultant may be required to attend the Pre-Construction Partnering Workshop and/or utility coordination meetings.

F. The Consultant shall submit sealed and properly signed required construction modifications (change orders) of the original design in a hard copy as well as in electronic format as stated in section 1040.

G. The Consultant shall prepare the As Built plans for the project based on redlined construction plans provided by the ADOT Resident Engineer. The As Built submittal shall also include electronic files consistent with ADOT's electronic archiving process. The Consultant shall submit the following:

1. Two (2) half-size (11" by 17") prints of the final prepared As Built plans set.
2. ***One (1) full-size print set of the prepared As Built plans sheets trimmed to 22" x 34".***
3. One (1) electronic copy of the CADD design files containing the submitted As Built Plans on compact disk(s) (CD) or DVD(s).
4. Two (2) electronic copies containing the prepared As Built Plans scanned onto CD(s) or DVD(s) in PDF format (Adobe Portable Document Format).
5. The original set containing the field redlines sent by the Resident Engineer.

The cover sheet of each As Built Plan set shall contain the following information transcribed onto the original cover sheet:

- Project Number and Tracs number (if applicable).
- Name of the Construction Company who built the project.
- The name of the Professional Registered Engineer or Certified Professional who oversaw the As Built Plans Procedure.
- The date the process was completed.

- The name of the Resident Engineer (and consulting firm if applicable) who supervised the project field construction.
- The date when the Resident Engineer approved submittal of the field redline information.

.3

.4 SECTION 700 - MATERIALS FURNISHED BY ADOT

710 Surveys and Mapping

ADOT will provide the following materials, as available:

A. Horizontal and vertical control for existing alignments

B. Descriptions and values for Geodetic control

C. Field Survey

1. Planimetric maps
2. Topographic maps
3. Digital Terrain Model
4. Profile maps

D. Control for aerial maps

E. Photogrammetric Mapping (Contour Interval = 2 ft.)

1. 1" = 50' photogrammetric mapping
2. 1" = 100' photogrammetric mapping
3. 1" = 50' Digital Terrain Model
4. 1" = 100' Digital Terrain Model

F. Photo mosaic

G. Aerial photos

H. ADOT State Plane Coordinate Grid Adjustment Factor(s)

720 Materials Investigation

ADOT will provide the following materials:

A. Geotechnical Report if applicable

B. Pavement Design Summary if applicable

C. Materials Design Report if applicable

D. Review of all submitted reports prepared by others for this project.

730 Record Documents

The Consultant shall obtain the following ADOT drawings:

A. Available "as built" plans, of existing conditions

B. Available right-of-way plans of existing conditions

740 Traffic Data

The Consultant shall obtain from ADOT the following design traffic data:

A. Current and design year ADT

B. K, D, and T factors

750 Environmental Studies

In addition to the Final Environmental documents, ADOT will provide, at the Consultant's request, any available environmental data prepared for the project (such as cultural resource surveys and investigations).

760 Base Sheets

ADOT will provide the Consultant with one (1) reproducible copy of each of the following base sheets as required for completion of the project plans. For other compatible CADD systems, these items shall be provided on computer CDs.

A. Roadway Design Section sheet

B. New Pipe Summary sheet

C. Barrier Summary sheet

D. Reinforced Concrete Box Culvert Summary sheet

E. Roadside Development Section sheet

F. Corrugated Aluminum Pipe Extensions Summary sheet

G. Corrugated Steel Pipe Extensions Summary sheet

H. Combination Barrier and Pipe Summary sheet

I. Cell Libraries (CADD only)

J. Font Libraries (CADD only)

K. Face sheet

L. List of Standard Drawings sheets

M. Traffic Design Section sheets

N. Traffic Operations Section sheets

O. Right-of-Way Plans Section sheet

770 Final Design Concept Report

The Final Design Concept Report will be provided to the Consultant.

.5 SECTION 1000 - CONTRACT ADMINISTRATION

1010 Arizona Department of Transportation

ADOT's Project Manager shall:

A. Conduct ongoing reviews of the Consultant's progress in performing the work and ensure timely comments from the technical units.

B. Direct design consensus status and team building meetings with all appropriate partners at the start and on a monthly basis during the project development period.

C. Review the Consultant's billings

D. Review and evaluate the Consultant's requests for extension of time and supplemental agreements

E. Review all correspondence with public agencies prior to the Consultant's mailing of any correspondence

F. Coordinate the distribution of public information

G. Provide a focal-point contact for all questions, requests, and submittals

H. Coordinate project scheduling with the Consultant, ADOT sections, and ADOT Program and Project Management Section.

1020 Consultant

The Consultant shall:

A. Establish, furnish and maintain suitable office facilities to serve as the project office for the duration of the project in the location specified in the Consultant's technical proposal

B. Maintain an adequate staff of qualified support personnel to perform the work necessary to complete the project

C. Establish internal accounting methods and procedures for documenting and monitoring project costs

D. Establish and maintain contract administration procedures, which will include supplemental agreements, time extensions and subcontracts

E. Include the complete TRACS number and project name on all correspondence related to the contract.

F. Participate in design consensus, status and team building meetings with all appropriate partners at the start, on a monthly basis during the project development period and as needed to maintain the design schedule. If requested by the ADOT Project Manager, the Consultant shall act as the lead.

The Consultant is responsible for the accuracy and completeness of contract documents and related design prepared under the project. The plans will be reviewed by the project team including representatives of ADOT technical sections for conformity with ADOT procedures and the terms of the contract. **Review by ADOT does not include detailed review or checking of design of major components and related details or the accuracy with which such designs are depicted on the plans.**

1021 Project Control

The Consultant shall provide data, in the format specified by ADOT, upon request to monitor costs and manpower and to report progress.

The project control system may include features to:

A. Determine and highlight critical path work from initial plans as work progresses

B. Identify progress against schedule for each identified work item

C. Forecast completion dates from current progress

D. Highlight rescheduled work in any area which is out of the required sequence

E. Determine any physical area that requires more resources than originally allocated

F. Forecast future conflicts in any area

G. Provide estimates of time, manpower, and dollars required at the lowest work element tracked, based upon current expenditures versus schedule

H. Provide the capability of random inquiry concerning the status of any work element in terms of schedule, manpower, and dollars

1022 Subcontract Services

Due to the nature and scope of the required services, it may be desirable for the Consultant to subcontract portions of the work. However, the subcontracting firms must be approved in writing prior to initiation of any work. The volume of work performed by the subcontractors shall not exceed 49 percent (49%) of the total contract value.

1023 Project Related Correspondence

The Consultant shall furnish written documentation of communications between the Consultant and any party, pertaining specifically to the project, to ADOT for record keeping within one week of the communication. The Consultant is responsible for recording and distributing to the participants the minutes of all meetings pertaining to the project within one (1) week of the meeting.

1024 Quality Control

The Consultant is responsible for the accuracy and completeness of the plans and related design prepared under the contract and shall check all such material accordingly. The Consultant shall have a quality control plan in effect during the entire time work is being performed under the contract. The plan shall establish a process whereby plans, calculations and documents submitted for review shall be clearly marked as being fully checked by a qualified individual other than the originator. Non-compliance will be sufficient cause for rejection of submittal. Periodic Quality Control audits may be performed by the ADOT Project Manager.

The Consultant shall submit the quality control plan to ADOT for approval within fifteen (15) working days of receipt of written Notice to Proceed. The plan shall comply with the requirements of Section 1025. The plan shall address as a minimum: checking procedures, training of employees in quality requirements, methods of monitoring and documenting quality control activities.

1025 Quality Control Plan Requirements

A. Identification of key personnel and definition of specific responsibilities:

The plan will identify, by name, the specific project personnel and their individual responsibilities relative to the project and the Quality Control process.

B. Technical review process:

Technical review shall be distinguished from checking. Checking is for verification of the accuracy of the documents; technical review is for the verification of the overall design concept of the project. As a minimum, technical review will do the following:

1. Determine the adequacy of the design process to achieve the desired goals
2. Evaluate the general selection and sizing of materials and equipment
3. Determine if all viable alternatives have been considered
4. Determine the practicality of the design concept
5. Determine if legal and physical restraints were considered
6. Determine if the design theory, concepts, and project layout are logical
7. Determine applicability of computer programs used
8. Determine if the technical specifications are sufficiently comprehensive
9. Determine the constructability of the selected design

C. Checking procedures:

The checking process should assure that all documents produced, including, but not limited to, plans, reports, calculations, specifications, special provisions, estimates, and schedules, are thoroughly checked by an individual equally competent to the originator of the document to verify accuracy. The process will address resolution of conflict and assure agreement of computer programs and procedures for checking computer input and output. Checking shall not only confirm the accuracy of calculations, but shall include a thorough review of the proper use of Standard Drawings, Drafting Guide, Project Design Guidelines, and other manuals and documents referenced under Section 200 of the scope of work.

D. Program to train employees in the quality control requirements:

The training program should provide an opportunity for all project staff to become familiar with the design and the quality control process that will be required on the project. Particular attention should be directed to defining specific individual responsibilities and assuring their understanding.

E. Process to monitor and document quality control activities:

A method for monitoring and documenting the required processes is essential to achieve desired results; this process should easily and quickly verify the entire Quality Control process. A checklist should be developed for quick reference and periodic review by the Project Principal and ADOT.

1026 Consultant Personnel

The Consultant's work shall be performed and/or directed by the key personnel identified in the technical/fee proposal presentations by the Consultants. Any changes in the indicated key personnel or the Consultant's officer-in-charge of the work, as identified in the Consultant's proposal, shall be subject to review and approval by ADOT.

1027 Site Visit

The Consultant shall make arrangements to visit the project site, with agency representatives as appropriate (ADOT, FHWA, National Forest and other interested persons), at least two (2) weeks prior to the visit. The visit will be held within fifteen (15) working days of the receipt of written Notice to Proceed, or as otherwise instructed by the ADOT Project Manager. Within seven (7) calendar days of the site visit, the Consultant shall issue to ADOT a brief written report including observations, discussions, and any questions pertaining to the scope or level of effort of the project. The purpose of the site visit is to acquaint key personnel with the details and features of the project to facilitate the design process.

1030 Acceptability of the Work

The plans, design, requested calculations, reports and other documents furnished under the Scope of Work shall conform to "standards-of-the industry" quality. Criteria for acceptance shall be a product of neat appearance, well organized, accurate and complete, technically and grammatically correct, checked in accordance with the approved Quality Control program, and with the designer, maker and checker identified.

1040 Design Documentation

A. If requested, the Consultant shall submit any design notes, sketches, worksheets, and computations to document the design conclusions reached during the development of the contract documents to ADOT for review.

B. Structural calculations will only be submitted when requested by the Bridge Group and for specific elements.

C. At the project completion (immediately prior to the bid advertisement), a final set of project documentation sheets, sealed by a Professional Engineer, Landscape Architect, or Architect, registered in the State of Arizona, shall be submitted to ADOT with the record set of plans.

D. Project Documentation shall include, but are not necessarily limited to, the following data:

1. Design criteria used for the project
2. Right-of-Way calculations (including easements)
3. Geotechnical reports for the pavement and/or bridge design
4. Documentation of decisions reached resulting from meetings, telephone conversations or site visits
5. Drainage reports
6. Field survey notes and computations
7. Calculation of quantities

E. Computer-Aided Design and Drafting (CADD) Standards for all Projects related Deliverables. ADOT shall retain all rights and ownership of all Electronic Files and Hardcopy Deliverables throughout the Design Phases.

F. During project construction, and as part of the post-design services rendered by the Consultant, any modification(s), redlines shall be prepared in accordance with the as built procedure stated in section 600 (G). ADOT retains all rights and ownership of the Electronic Files and Hardcopy Deliverables throughout the Construction Phase.

CADD General Specifications

All drawings to be archived shall conform to ADOT drafting and CADD standards, including CADD file naming convention. The current ADOT approved version of Bentley's MicroStation software will be used. All graphic files shall be provided in MicroStation's native design file format (.dgn), and contain data in vector format only. Digital Terrain Model (.dtm) files shall be produced with Bentley's InRoads/Site/Survey Select CAD compatible file formats. Raster data shall not be accepted unless otherwise stated by ADOT. Use of non-MicroStation vector format and subsequent translation of graphic files to the .dgn format shall not be acceptable. No zipped files will be accepted. Reference files are not to be copied into the plan sheets master file. All electronic "design sheets" will be delivered in a typical "Plan View" (dependant upon sheet contents) in view 1. ADOT cells are not to be modified unless approved by ADOT.

All final Consultant project Electronic CADD data files may be delivered through a File Transfer Protocol (FTP) Site. Alternatively, two (2) copies of the electronic files shall be submitted on CD-ROM/DVD (multiple CDs /DVDs shall be allowed). All final project documentation, electronic files (.DGN, ASCII, .ALG, .DTM, .SGN, .XLS project wide reference files, etc.) and hard copy, shall be packaged separately, suitably labeled and delivered to the assigned ADOT primary Project Manager, and/or to the Technical Leader as identified.

All deliverables shall contain an electronic Index of Files and a letter of transmittal to the designated areas and all CDs/DVDs must be labeled with the information stated below:

<u>Identification Label for CD/DVD and Case:</u>

- Prepared By:

- Federal Project Number:
- Route:
- Milepost (Beginning/Ending):
- Prefix (Rt, Co, MP) and TRACS Number:
- Project Name:
- Type of Files:
- Creation Date:
- Disc (#) of (total #)

In addition to the requirements stated above in the General Specifications, all designers of ADOT projects shall provide the information requested by the individual areas. If unclear about items needed for your project, please contact the Design Project Manager.

1050 Value Analysis

"Value Analysis", also know as "Value Engineering" consists of those tasks performed by a Value Analysis Team in accordance with the Value Analysis Program Manual as referenced in Section 200 of the Scope of Work and available from the ADOT Value Analysis Section. Any studies or other activities of a similar nature shall not be referred to as "Value Analysis" or "Value Engineering."

The design team is encouraged to recommend value analysis for ADOT standards and specifications, as well as for elements of the project.

1051 Value Analysis Team

The value engineering study will be performed by a value analysis team consisting of ADOT personnel, personnel from consultants or outside agencies, or some combination of these sources. The design team shall cooperate fully with the value analysis team, providing necessary background information for the study. At the discretion of the Project Manager, the design team may be requested to assign one of its representatives to the value analysis team.

1052 Design Team Responsibilities

A. The design team, upon notification of the approval of a value analysis, shall compile appropriate data for analysis and make a presentation to the value analysis team, in accordance with the Study Plan prepared by the Value Engineer. The design team shall communicate and cooperate fully with ADOT's Value Engineer and the value analysis team.

B. It is expected that the elements necessary for a value study can be assembled and delivered by the design team with minimum expenditure of effort and time under its normal design procedures in approximately four (4) working days. The design team will be allowed to budget thirty-two (32) man-hours for data compilation, the presentation, and study response, if appropriate. If the design team is requested to furnish a representative to participate as a member of the value analysis team, additional hours may be necessary. Although costs for value analysis activities are not identified as a separate expense item for accounting

purposes, the design team shall report the hours expended and estimated costs of labor and materials to the ADOT Value Engineer for cost tracking and value analysis program evaluation purposes.

C. In accordance with the Program Manual, the findings and recommendations of the value study will be forwarded to the ADOT Project Manager for review. The Project Manager will review the value analysis recommendations with the project team and respond to the Value Analysis section as soon as practical indicating acceptance, possible acceptance pending further investigation, or rejection of each recommendation. The design team shall implement the approved recommendations of the value study. If significant effort is required, the additional work will be added to the Scope of Work by contract modification.

1060 Reviews and Submittals

A. Review and coordination of the Consultant's work by ADOT will continue through the project development process. The Consultant may continue the design work while design submittals are being reviewed by ADOT. Doing so however in no way relieves the Consultant of the responsibility to incorporate review comments into the design, nor does it entitle the Consultant to any additional design fees as a result of making changes due to review comments.

B. Partnering Workshops

1. If requested by ADOT, the Consultant shall participate in joint progress meetings and consensus sessions with other designers on the corridor.

2 The Consultant shall participate in a Construction Partnering Seminar after the project has been awarded and prior to the start of construction.

C. Submittals for review shall be made when the studies and/or plans have been developed to the following levels of completion:

1. Quality Control Plan

2. Stage I design

3. AASHTO Report

4. Stage II design

5. Stage III design

6. Stage IV design

D. The project may be subject to a constructability review. The Resident Engineer or other assigned District representative will be the leader of the constructability review which would normally occur after the Stage III submittal and before the Stage IV submittal.

E. Copies of review submittals and finalized documents shall be distributed by the Consultant in accordance with the Distribution List maintained by the Statewide Project Management Section (see Appendix C) or as per the ADOT Project Manager's instructions. The appropriate name for each position may be obtained from the ADOT Project Manager upon request one week prior to any submittal deadline. All deliveries shall be by hand or overnight courier. All plans and cross sections shall be half-size black and white sheets and in CD-ROM/DVD containing the CADD (Microstation) design files used to develop the plan sheets as specified in Section 1040.

1061 Environmental Reports - N/A

1062 Stage I Design Submittal

An informal review and discussion of the project shall be held prior to the Stage I review submittal. The meeting shall take place as soon as the Consultant has established pre-initial roadway alignment, typical roadway sections, and a tentative plans layout for the project.

The attendees shall consist of the Consultant, the assigned design team including ADOT staff involved in the project design, the ADOT Project Manager and other concerned personnel invited by the ADOT Project Manager.

A. The following material shall be developed and submitted to the ADOT Project Manager for review:

1. Initial typical roadway sections
2. Initial roadway plan and profile sheets at the scales set in Section 410.
3. Tentative plans layout
4. Initial environmental mitigation measures
5. Request for utility designation services
6. Two copies of all plans and cross sections; one set shall be half-size black and white sheets and the other set in PDF format.

1063 Stage II Design Submittal

A. The following material shall be developed and submitted for review:

1. Typical roadway and detour sections
2. Final roadway geometry and preliminary roadway and detour plan and profile sheets
3. Location of existing utilities and identification of initial utility conflicts

4. Utility report

5. Preliminary R/W and easement requirements

6. Preliminary roadway drainage plans and details and Initial Roadway Drainage Report

7. Bridge Drainage Report

8. Bridge Selection Report

9. If required, draft applications for environmental permits including preliminary input for Section 404 permit

10. Any significant change in engineering data supporting previous environmental decisions or applications

11. Preliminary summary of required environmental mitigation measures

12. Preliminary Landscape Architectural plans with proposed sources of power and water

13. Preliminary development of intersection plans including basic geometry and channelization

14. Preliminary layouts for proposed retaining and sound barrier walls

15. Preliminary construction sequencing plans

16. Final Geotechnical Report

17. Final survey information

18. Initial quantities and cost estimate

19. Preliminary roadway cross sections at one hundred (100) ft. intervals, as a minimum, with additional sections at breaks in the terrain. See Section 440, Roadway Design.

20. Preliminary summary of earthwork quantities

21. Two copies of all plans and cross sections; one set shall be half-size black and white sheets and the other set in PDF format.

B. The Geotechnical Report shall be submitted to ADOT for review and approval a minimum of fifteen (15) calendar days prior to the Stage II Design Submittal.

1064 Stage III Design Submittal

A. The following material shall be developed and submitted for review:

1. Final typical roadway and detour sections
2. Pre-final roadway and detour plan and profile sheets
3. Identification of final utility conflicts and preliminary plans of utility installations and/or re-locations to be included in project construction
4. Pothole data made available to utility companies
5. Utility report
6. Final R/W and easement requirements
7. Pre-final roadway drainage plans and details and Final Roadway Drainage Report
8. Completed applications for environmental permits including final input for Section 404 permit
9. Any significant change in engineering data supporting previous environmental decisions or applications
10. Final summary of required environmental mitigation measures
11. Pre-final intersection plan sheets
12. Final construction sequencing plans
13. Pre-final layouts for retaining and sound barrier walls
14. Preliminary landscape architectural plans, summaries and details, and proposed sources of water and power
15. Preliminary design sheet with index and general notes, summary sheets and special details
16. Preliminary summary sheets
17. Preliminary special details
18. Preliminary bridge structure plans
19. Preliminary retaining wall and sound barrier wall design plans
20. Preliminary traffic control plans
21. Preliminary pavement marking and signing plans
22. Preliminary traffic signal plans
23. Preliminary lighting plans

24. Preliminary erosion control plans, summaries and details

25. Preliminary special provisions including ADOT Stored Specifications

26. Preliminary quantities, cost estimate and bidding schedule

27. Preliminary construction schedule in bar chart format

28. Preliminary roadway cross sections at one hundred (100) ft. intervals, as a minimum, with additional sections at breaks in the terrain. See Section 440, Roadway Design.

29. Preliminary summary of earthwork quantities

30. Preliminary Utility Special Provisions

31. Two copies of all plans and cross sections; one set shall be half-size black and white sheets and the other set in PDF format.

An office review and field review will be held following submittal of the Stage III plans to review the proposed roadway alignments and bridge site. See Section 410 of this Dictionary of Standardized Work Tasks for field review staking requirements.

1065 Stage IV Submittal

A. The following final material shall be completed, checked and submitted for review:

1. Design sheet(s) with index and general notes

2. Summary sheets

3. Special details

4. Typical roadway and detour sections

5. Roadway and detour plan and profile sheets

6. Drainage plans and details

7. Intersection plans and details

8. Construction sequencing plans

9. Traffic control plans

10. Traffic signal plans

11. Signing and pavement marking plans

12. Lighting plans

13. Bridge plans

14. Retaining wall and sound barrier wall design plans

15. Landscape Architectural plans and details

16. Utility installation/relocation plans and details to be included in project construction

17. Utility report

18. Utility Special Provisions

19. Utility relocation schedule and costs

20. Erosion control plans

21. Roadway cross sections (see Section 440, Roadway Design)

22. Final summary of earthwork quantities

23. Quantities, cost estimate and bidding schedule (provide the work done using Microsoft Excel in one hard copy and another in a CD-ROM)

24. Special provisions (provide hard copy and CD-ROM using Microsoft Word)

25. Construction schedule

26. Environmental permits

27. Summary of environmental mitigation measures and disposition

28. Final design calculations

29. Two copies of all plans and cross sections; one set shall be half-size black and white sheets and the other set in PDF format.

NOTE: The ADOT technical reviewer may require checked computations and checked data on the plans for all of these items prior to submittal.

B. ADOT's review of the submittal will include technical content, incorporation of previous comments, and completion of design and details, as well as:

1. Conformance with ADOT requirements

2. Completeness of the contract documents

3. Compatibility of plans, specifications, and special provisions

4. Coordination between disciplines, phases, and outside parties

5. Clarity of the contract documents

6. Consistency of presentation

If additional submittals at this level are required due to noncompliance with the Scope of Work or ADOT's review comments, the work shall not entitle the Consultant to any additional design fees.

The Consultant shall prepare and submit to U & RR Section, a Utility Clearance Letter in the style and manner as outlined in the *Utility Coordination Guide for Design Consultants*. The clearance letter shall be sent before the Final Submittal is made.

1066 Final Submittal

A. The following material shall be submitted for completion of the project:

1. A complete reproducible set of sealed and signed contract document originals necessary to construct the road and/or bridge improvements identified in the contract.

2. A complete sealed and signed reproducible set and one copy of special provisions to cover design items not identified in the ADOT Standard Specifications for Road and Bridge Construction, current edition.

3. The Consultant shall provide a copy, in electronic version, of the CADD design files used to create all plan sheets as specified in Section 1040. The Consultant shall also provide a separate CD/DVD containing all plan sheets, properly sealed by a Registered Engineer, in PDF format. Filenames shall conform to the format provided by ADOT in section 1040 and/or required by any ADOT technical section.

4. Final and complete quantity summaries and cost estimates

5. An estimate of the contract time for the project construction

6. Final survey computations and original field books

7. Approved environmental permits if required

8. A reproducible set of earthwork cross sections by station showing the plotted roadway template superimposed on the plotted natural terrain (see Section 440, Roadway Design)

9. A reproducible set of final earthwork quantities, calculations and overall summaries

10. Return any documents and other materials provided for use on the project

NOTE.- The Consultant Project Manager will make sure that the printed copies comply with the following list:

1. All seals must be of reproducible quality and all signatures in black ink.
2. All final plan sheets shall be trimmed to 22" by 34".
3. All final plan sheets shall be printed on 20 pound vellum not less than 3 mil nor more than 5 mil.
4. Printed plan sheets shall be black printing only.
5. Do not use paste-ups, tape or sticky back.
6. Do not use pencil on final drawings.

All review submittal prints of the construction plans shall be clearly stamped "**PRELIMINARY - NOT FOR CONSTRUCTION**". The percentage of completion and date submitted should be clearly evident. Failure to comply may be cause for rejection of the submittal. Only the final approved plans shall be properly sealed by an Arizona Registered Professional Engineer and issued without the above stamped notation.

SECTION IX

ADVANCE AGREEMENT CHECKLIST

ARIZONA DEPARTMENT OF TRANSPORTATION

ENGINEERING CONSULTANTS SECTION

ADVANCE AGREEMENT CHECK LIST
(See FAR 31.109)

1. Direct Labor

Direct labor will be billed at actual costs, as defined in FAR 31.001, unless a specific classification or individual's billing rate is capped. However, for partners, sole proprietors and Limited Liability Companies (LLCs) where owners may not be paid an hourly wage or salary, direct labor will be billed at rates agreed to by ADOT. (Also see **Compensation for Personal Services**.)

Only the pay rates of those employees who will likely be expected to be directly involved on the Project stated in the Contract can be used in developing cost proposal rates.

2. Home Office Allocations or Similar Allocated Costs

FAR 31.109(h)(14) states, "General and administrative costs (e.g., corporate, division, or branch allocations) attributable to the general management, supervision, and conduct of the contractor's business as a whole." These costs may represent a significant portion of indirect (Overhead) costs.

All Cost Principles addressed in the Contract Cost Allowability Guidelines and Policies ("CCAGP") must be followed by a Consultant/Subconsultant's home office, division or other related entity that allocates costs to the Consultant/Subconsultant (see the CCAGP **A.5. Allocability of Costs**). These costs should be identified and agreed to in advance as to the amounts considered reasonable and allocable to ADOT contracts.

3. Overhead Rates by Type of Engineering Discipline or Specialty

Firms qualified to provide more than one engineering discipline or specialty must be able to substantiate separate overhead rates for each of the following disciplines:

- Construction Administration (CEI)
- Design
- Geotech
- Supplemental Services

4. Compensation for Personal Services

See CCAGP **B.31.205-6 Compensation for Personal Services**.

Compensation for personal services is normally the most significant element of indirect cost. The components of compensation for personal services should be identified and the amounts to be considered reasonable and allocable to ADOT contracts agreed to in advance.

In particular, the following elements of Compensation for Personal Services, if applicable, should be agreed to in advance:

- Both the reasonableness and allocability of compensation paid to partners, sole proprietors, or owners and family members of same, along with highly compensated employees.
- Allowability of bonuses. Under above reference, see 2. *Bonuses and incentive compensation*.

5. Cost of Money

If this item is requested, it must be properly proposed as a separate line item in the Derivation of Costs Proposal, and documented in accordance with 31.205-10. Also see FAR 31.201-1.

6. Bid and Proposal Costs (see FAR 31.205-18) and Selling/Marketing Costs (see FAR 31.205-38)

Bid and proposal costs and selling/marketing costs will be looked at carefully in the preaward review. Any unreasonable and/or unallocable costs being claimed will be disallowed. Adequate documentation will be expected for such claimed costs. Unallowable portions will be expected to be properly identified.

7. Other Direct Costs

It will be expected that Other Direct Costs (any expense/cost other than Direct Labor and Subconsultants) be included in the Overhead cost pool. If a Consultant/Subconsultant proposes Other Direct Costs, it will need to obtain prior approval of its accounting methods by ADOT's Office of Audit & Analysis—External Audit Team before it can include such costs in its Derivation of Costs Proposal submitted to ADOT's Engineering Consultants Section.

7. Other Direct Costs, continued

The list of incidental costs that follow should not be considered to be "all-inclusive". However, the items noted below are specific costs ADOT has identified as being onerous to deal with as Other Direct Costs. Most Consultants/Subconsultants already include such costs in Overhead cost pools.

- Audio/Video equipment and supplies, including VCRs and video cameras
- Cell phones
- Copy machines
- Densometer
- FAX
- Internet/electronic mail
- Mileage for company vehicles
- Office space considered to be "extra". (Exception is for Construction Administration field office.)
- Postage and/or Courier
- Survey supplies
- Telephone calls--both local and long distant

Additional points to consider:

- If a Consultant/Subconsultant does not have separate cost pools (for example CADD and Reproduction Costs), ADOT believes it will be very difficult to adequately substantiate such costs.

- Be aware that if the costs of specific services normally provided by a Consultant/ Subconsultant are included in its Overhead Cost Pool, then any unexpected costs that may be incurred to provide those same services must be charged to an Overhead cost account. Any questions regarding this matter should be directed by ADOT's Office of Audit & Analysis—External Audit Team.

8. Incidental Costs Which Should Normally Be Charged Directly to the Contract

- Lease/rental of vehicles or other specialty equipment. (This cost should be substantiated by evidence of appropriate bidding including support for the bid accepted.)
- Mobilization of equipment.
- Travel and Lodging, including per diem, following ADOT's Travel Authorization Policy.
- Special reproduction costs provided by outside vendors

SECTION X

ADOT CONSULTANT AUDIT CRITERIA

Arizona Department of Transportation

Intermodal Transportation Division

206 South Seventeenth Avenue Phoenix, Arizona 85007-3213

Janet Napolitano
Governor

Victor M. Mendez
Director

Floyd Roehrich, Jr.
State Engineer

October 15, 2008

INFORMATION BULLETIN NO. 08-03

TO: Consultant Engineering Firms, ADOT Project Managers & ADOT Office of Audit & Analysis

FROM: Engineering Consultants Section

SUBJECT: Pre-Award Audit Requirement Timeframe

ADOT is striving to be more efficient in working with Consultants to negotiate overhead rates prior to the execution of contracts and to minimize the problems associated with adjusting overhead rates and "truing-up" the costs mid-way through the contracts.

Therefore, effective immediately, the procedure below must be followed in order to help ensure that overhead rates can be negotiated prior to contract execution, where applicable.

Within two weeks after receiving a notice of selection, the selected Consultant and its Subconsultants are required to comply with the Advance Agreement Checklist (SOQ Package, SECTION IX) and submit financial documentation to ADOT Office of Audit & Analysis (A&A) as detailed in SECTION X of the SOQ Package.

At a minimum, for overhead-based firms, the following documents must be submitted to A&A within two weeks of contract award.

1. Completed Consultant Audit Questionnaire
   For Consultant Audit Questionnaire and other relevant reference materials, visit A&A website at http://www.azdot.gov/inside_adot/audit/publications.asp
2. Financial Schedules / Statements
3. Schedules of Indirect Costs

Additional information and supporting documentation may be requested by A&A as needed.

Subconsultants that are proposing Unit Rates or Commercial Pricing Rates may have different audit submittal requirements and should contact A&A for clarification.

Failure to comply with audit requirements by the established timeframe may substantially delay the contract execution and may be considered failed negotiations.

If you have any questions or require any additional information, contact A&A at (602) 712-7491.

Vivien H. Lattibeaudiere, Ph.D.
ECS Director

SECTION XI

BOILER PLATE CONTRACT

Contract No.:09-022
TRACS No.: H7583 01L
Project No.:

A.G. Contract No: KR94-1408ALS

CONSULTANT CONTRACT

This CONTRACT is made and entered into on _____, 20__ by and between the State of Arizona, Arizona Department of Transportation, Intermodal Transportation Division, acting by and through the Director, hereinafter called STATE, and

(Consultants Name and Address Inserted Here)

hereinafter called the CONSULTANT.

The Description and Location of the CONTRACT and related project(s) are as follows:

Description:

Design Concept Report,
Environmental Studies
And
Up to 30% Plans

Location:

Contract No. 09-022
I-10, Ina TI to Ruthrauff TI
TRACS No. H7583 01L

RECITALS

1. The STATE desires that design concept report and design plans be prepared for the above location. The trained personnel needed for the CONTRACT and related project(s) are not currently available within its own organization.

2. The CONSULTANT firm with its principals and employees is considered to be qualified and otherwise capable of performing the work required by this contract in the time allotted.

3. Therefore, pursuant to Arizona Revised Statutes, Section 28-1803(5) it is deemed to be in the public interest to enter into this contract.

AGREEMENT

Therefore, in consideration of these premises and of the mutual clauses and agreements herein contained, and the faithful performance thereof, the CONSULTANT and the STATE contract and agree:

2.01 SCOPE OF WORK

The CONSULTANT shall perform engineering services for the satisfactory completion of the CONTRACT and related project(s) as detailed and described in the following Scope of Work dated August 2008 which is considered to be a part of this CONTRACT.

(Scope of Work Inserted Here)

3.01 CONTRACT SCHEDULE AND COMPLETION DATE

Work on the CONTRACT and related project(s) is scheduled to commence on _____. Work is to be completed within __540__ calendar days from notice to proceed for an estimated completion date of _____, 20_____. The STATE assumes no liability for work performed or costs incurred prior to the beginning date or subsequent to the CONTRACT completion date. Extensions of time allowed for completing the CONTRACT may be granted under appropriate circumstances.

3.02 CONSULTANTS COMPENSATION - MULTIPLE PHASES

1. The Costs Plus Fixed fee method of compensation for CONSULTANT'S services shall be used for Phase I.

   a. PHASE I – INITIAL DESIGN CONCEPT REPORT

      CONSULTANT'S total compensation for work on Phase I of the CONTRACT shall not exceed the sum of $_____ plus approved adjustments, and shall consist of three parts:

      (1) The CONSULTANT'S total allowable costs incurred as hereinbelow defined which are estimated to be $_____. Such costs shall not be exceeded without prior written approval of the STATE.

      (2) A fixed fee portion of the CONSULTANT'S compensation for rendering of the professional services herein contemplated shall be $_____.

   b. PHASE II – FINAL DESIGN CONCEPT REPORT

      The Lump Sum method of compensation for Phase II shall be used. Funds will be added and Notice of Said Determination shall be made by Contract Modification.

   c. TOTAL CONTRACT COMPENSATION

      CONSULTANT'S total compensation for work on the CONTRACT shall not exceed the sum of $_____ plus approved adjustments.

2. "Costs" as used in this context shall be construed to mean the CONSULTANT'S actual, reasonable costs, subject to any limitation set forth in this CONTRACT, attributable and properly applicable to the conduct of the CONSULTANT'S business in the performance of this CONTRACT in accordance with procedures as set forth in Chapter 1 of the Federal Acquisitions Regulations System, 48 CFR 31.2, and any other mutually agreed upon policies or regulations, as appropriate. Costs for each subcategory (line item) shall not exceed the allowable rates as set forth on the DERIVATION OF COST PROPOSAL located in the SCOPE OF WORK section, Appendix_____ of the CONTRACT, or are approved by contract modification, or by Administrative Determination Letter, as applicable. Such costs shall be allocated to the following categories and respective subcategories and may include, but are not necessarily limited to:

a. Direct Labor

Gross Salaries and/or wages paid to employees for work on the CONTRACT and related project(s), for time actually spent by CONSULTANT'S employees in direct productive efforts. Regarding CONSULTANT'S employees who charge their time to projects, their non-project pay, such as holiday pay, vacation pay, or any other form of indirect pay which is included in the employees' gross wages, will not be charged as direct labor to the CONTRACT or to related project(s). Non-project pay is to be included in 3.02 2.b.(2). Also payments to individuals other than the CONSULTANT'S employees are specifically excluded as direct labor costs. Payment of premium overtime (i.e., time and a-half or double time, over and above the normal 40 hour work week) must have the prior written approval of the STATE. If payment of premium overtime is approved, it will be treated as Other Direct Costs.

b. Indirect Costs (Overhead)

(1) Applicable to straight time portion of Direct Labor only, as defined in 3.02 2. a..

(2) Indirect labor which includes non-project pay to CONSULTANT'S employees who normally charge their time to projects, salaries and wages paid to support staff such as secretarial, clerical and custodial, plus managerial employees whose time is not considered chargeable project time to this CONTRACT and related project(s) or any other specific project of the CONSULTANT.

(3) Payroll costs-taxes and fringe benefits such as matching funds or employer's contributions paid for employee's social security, unemployment compensation, worker's compensation insurance, medical/dental life or disability insurance, pension plans, dependent care or medical expense reimbursement accounts, or similar employee benefits.

(4) Normal operating costs, including but not limited to, reasonable office rental or depreciation expense, repairs, maintenance, parking, janitorial, supplies, telephone and utilities for CONSULTANT'S facilities unless specifically waived by the STATE.

(5) Payment to the CONSULTANT for Indirect Costs shall be made pursuant to Federal Acquisition Regulation, 48 CFR Chapter 1 Part 31.2, and ADOT Contract Cost Allowability Guidelines and Policies as of August 28, 1998. During the period of the CONTRACT, partial payments will include payments for indirect costs at a provisional rate established by the pre-negotiation review by the audit and analysis office of the department. The Negotiated Provisional overhead rate of _____% will be set until receipt of the Pre-Negotiation Audit Review. A contract modification will be executed to establish the Provisional overhead rate. The Overhead rate, Direct Expenses and Fee are subject to change pending Pre-Negotiation Audit Review. A one time redetermination adjustment in the total amount paid or to be paid on all payment reports shall be made to reflect the established overhead rate and any resulting additional payments, refunds, or credits shall be made promptly. The

contract Notice to Proceed date will be the effective date for all redetermination of costs.

(6) The CONSULTANT is responsible for identifying its costs as allowable and unallowable pursuant to FARS 48 CFR Chapter 1 Part 31.2 and any other mutually agreed upon policies or regulations. Within five months after the CONSULTANT'S fiscal year-end, the CONSULTANT will have properly accounted for its allowable Indirect Costs (Overhead) as set forth herein.

(a) If the actual Overhead rate is lower than the provisional rate used, the CONSULTANT must determine the difference on the progress billings previously paid by the STATE, and remit to the STATE the amount overpaid by the STATE no later than the end of the sixth month following its fiscal year-end. If the CONSULTANT fails to comply with this condition, a penalty of 20% of the over-paid amount will be assessed. If by the end of the sixth month the CONSULTANT has not remitted either the over-paid amount or the penalty thereon, interest of 1% per month will be charged on the unpaid amount until all amounts owing have been paid. Interest will cease to accrue should the combined amount of penalties and interest accumulate to a maximum of 33% of the amount over-paid by the STATE.

(b) If the actual Overhead rate is higher than the provisional rate used, the CONSULTANT may determine the amount of additional Overhead due and request payment of same. The payment request must be properly documented and certified by the Chief Financial Officer of the CONSULTANT. The maximum Overhead allowed, will be the CONSULTANT'S actual percentage for the fiscal year as determined by 3.02 2.b.(6) or (B).

(c) If the CONTRACT period exceeds one fiscal year of the CONSULTANT, the provisional rate should be modified to more correctly reflect the actual experience or anticipated experience of the CONSULTANT or any of its Subconsultants, if applicable. Either the STATE or the CONSULTANT may initiate the request to modify the provisional rate to prevent substantial overpayment or underpayment.

(7) Upon completion of the CONTRACT, a final determination of Indirect Costs (Overhead) may be made based on an audit of financial records pursuant to 3.02 2.e.

c. <u>Other Direct Costs</u>

Direct expenses for travel, subsistence, per diem, or other mutually agreed upon expenses of a non routine nature which can be identified directly to the CONTRACT and related project(s). Out of State travel must have prior approval of the STATE.

Facilities Capital Cost of Money will be allowed when properly supported. The provisional rate for this contract is _____%.

d. Outside Services

Salaries and wages paid to individuals, other than the CONSULTANT'S regular employees, such as payments to other consultants, subconsultants, sub-contractors or vendors for engineering and professional services directly attributable to the CONTRACT.

e. Audit of CONSULTANT'S Business Operations and Financial Records

(1) All costs billed to the STATE are subject to audit. The CONSULTANT, and by way of subcontract, all subcontractors or Subconsultants, shall allow the designated STATE auditors to perform an audit as deemed appropriate. Such an audit will take into consideration consistent application of Generally Accepted Accounting Principles and Contract Cost Principles and Procedures as set forth in Chapter 1 of the Federal Acquisition Regulations System, 48 CFR Part 31.2 and any other mutually agreed upon policies or regulations.

(2) The CONSULTANT shall insert in each of its subcontracts the above requirement and also a clause requiring its Subconsultants to include the above requirement in any lower-tier subcontracts.

3. The STATE shall pay the CONSULTANT in installments based upon Progress and Final Payment Reports and Work Hour Reports submitted by the Consultant. A summary of costs billed by category or subcategory, as required by ADOT, is to be included with the invoice. The Payment Reports shall show allowable costs incurred to date under the CONTRACT and the pro-rata portion of the fixed fee earned, with the CONTRACT billed amount subject to the following limitations:

a. Prior to approval of the Stage II Design Submittal, the billed amount shall not exceed _____% of the total contract amount.

b. Prior to approval of the Stage III Design Submittal, the billed amount shall not exceed _____% of the total contract amount.

c. Prior to the approval of Final Design Submittal, the billed amount shall not exceed _____% of the total contract amount.

d. The STATE, at its discretion and with the recommendation of ADOT's Project Manager, may, by written notification, waive the above limitations. Approval authority shall be the same as for interim payments.

4. Costs are to be identified separately for each project number. Costs for each category must not exceed the amounts budgeted for those specific categories during the contract time frame without prior written approval of the STATE.

5. The CONSULTANT is required to submit a Monthly Progress Report in a format furnished by the STATE showing the status of the work and the degree of completion thereof.

6. The STATE shall not withhold retention on progress payments. However, if satisfactory progress has not been made, the STATE may first retain a maximum of

10% of the current and subsequent billings, or secondly, the STATE may refuse to make full progress payment(s) of such sums which are considered necessary.

7. When all work is delivered, accepted and approved as complete by the STATE, the ADOT Office of Audit and Analysis may prepare a report showing allowable costs incurred. Preparation of this report may require an audit examination of the CONSULTANT'S records. This may also include an examination of subconsultants or subcontractors records.

   During performance of progress or final audits, the allowability of direct costs will be contingent upon the CONSULTANT'S ability to demonstrate that these costs were excluded from the overhead cost pool.

8. Final payment shall be made as soon as possible after 60 days from the date of acceptance of the audit findings, if applicable, by the STATE and the CONSULTANT.

9. In the event the STATE requires substantial changes in the scope, character or complexity of the work on the CONTRACT, the total compensation as well the fixed fee portion may be re-evaluated and adjusted to a greater or lesser amount by mutual agreement between the CONSULTANT and the STATE.

10. In the event this CONTRACT is terminated by the STATE as herein provided, the CONSULTANT may be paid all the allowable costs incurred, including mobilization and demobilization expense, plus that portion of the fixed fee earned to date of termination as determined by the STATE. Mobilization and demobilization expenses shall include only reasonable costs of marshalling personnel (and equipment if specifically provided for in the contract) for performing this work and of terminating employment of such personnel. No costs will be allowable in connection with termination of employment if incurred later than fifteen (15) days after the date of termination. Costs will be determined as provided in the Federal Acquisition Regulations and may be verified by an audit.

4.01 CONSULTANT AND SUBCONSULTANT PAYMENT

The CONSULTANT shall submit invoices on a regularly monthly basis in accordance with a timetable agreed to in contract negotiations. Invoices should be sent directly to ADOT Project Manager or Project Monitor.

The CONSULTANT will submit invoices for work performed by their Sub-consultants even though the prime CONSULTANT may not have performed working during the preceding month.

On or before the seventh day after the STATE makes a progress payment to the CONSULTANT, the CONSULTANT shall pay the Sub-consultants for the work performed to the extent of each Sub-consultant's contractual interest in the progress payment.

4.02 CONTRACT MODIFICATIONS

1. Contract modifications, defining and limiting the terms of the contract and compensation, must be approved by the STATE, and shall be submitted in the form and format provided by the STATE. The CONSULTANT will be compensated only with prior written authorization by the STATE. Any administrative/technical costs associated with the preparation of said modifications are solely the responsibility of the CONSULTANT.

   a. Supplemental Agreements

      Significant changes in the scope, character, or complexity of the work may be negotiated if it is mutually agreed that such changes are desirable and necessary. Contract changes defining and limiting the work and compensation must be authorized by the STATE. Such supplemental agreement(s) shall be made in writing, and it is expressly understood and agreed that no claim for extra work performed or materials furnished shall be made by the CONSULTANT until authorization to proceed is granted, in writing, by the STATE.

   b. Changes Orders

      The STATE may at any time, by written order, and without notice to sureties, if any, make (or direct) changes within the general scope of this CONTRACT in the services to be performed.

4.03 DELAYS AND EXTENSIONS

The CONSULTANT agrees that no charges or claims for damages shall be made against the STATE for any delays or hindrances during the progress of this CONTRACT. Such delays or hindrances, if any, will be covered by an extension of time for such reasonable period as mutually agreed upon between the parties. It is agreed and understood, however, that permission to proceed with the CONTRACT after the established completion date, shall not be construed as a waiver by the STATE of any of its rights herein.

4.04 LATE SUBMITTAL OF INVOICE

Unless waived by the STATE, in writing, all invoices for work performed under this CONTRACT shall be submitted within 60 days from date of acceptance of the completed portion of the work performed.

4.05 PERFORMANCE EVALUATIONS

The CONSULTANT'S performance will be evaluated periodically in accordance with the schedule set forth in Appendix_____ of this CONTRACT.

4.06 GENERAL COMPLIANCE WITH LAWS

The CONSULTANT shall comply with all Federal and State laws, and local ordinances and regulations.

4.07 LITIGATION

In the event of litigation between the CONSULTANT and the STATE involving this CONTRACT, the laws and decisions of the State of Arizona shall apply and any such litigation shall be commenced and prosecuted in the appropriate court of competent jurisdiction of the Federal or State Court System within the geographical boundaries of the State of Arizona.

4.08 DISPUTE ESCALATION (Administrative Review)

A written dispute escalation process will be utilized to resolve questions of fact during the course of this CONTRACT. The final determination will be made by the STATE.

4.09 ARBITRATION

The parties agree to use arbitration, after exhausting applicable administrative reviews, to resolve disputes arising out of this agreement where the sole relief sought is monetary damages of $100,000, or less, exclusive of interest and costs.

4.10 TERMINATION, POSTPONEMENT OR ABANDONMENT

1. The right is reserved by the STATE to terminate, indefinitely postpone work, or abandon the CONTRACT. The STATE may terminate this CONTRACT in any one of the following circumstances:

    a. Failure of the CONSULTANT to perform the services as detailed herein and in any modifications to this CONTRACT.

    b. Failure of the CONSULTANT to complete this CONTRACT within the time specified herein and in any modifications to this CONTRACT.

    c. Failure of the CONSULTANT to comply with any of the terms of this CONTRACT.

    d. When, for any reason, the STATE shall determine that such termination is in its best interest.

2. If the STATE contemplates termination under the provisions of paragraphs 1.a., 1.b., or 1.c. above, the CONSULTANT shall have five (5) days in which to cure such failure. In the event the CONSULTANT does not cure such failure, the STATE may terminate the CONTRACT without further consideration.

3. If, after Notice of Termination of this CONTRACT under the provisions of 1.a., 1.b. or 1.c. of this clause, it is determined that the CONSULTANT was not in violation or default, the Notice of Termination shall be deemed to have been issued under the terms of 1.d. of this clause.

4. Termination shall be effected by delivery to the CONSULTANT of a Notice of Termination specifying whether termination is for default of the CONSULTANT or for the convenience of the STATE, the extent to which performance of the CONTRACT is terminated, and the date upon which such termination becomes effective.

5. In the event of termination, the STATE shall be liable to the CONSULTANT only to the extent and as provided in SECTION 3.02 (CONSULTANTS'S COMPENSATION) of this CONTRACT.

6. In the event this CONTRACT is terminated, the STATE shall have the option of completing the CONTRACT, or entering into an agreement with another party for the completion of this CONTRACT according to the provisions and agreements herein.

7. If the STATE exercises this option, all costs and charges incurred by the STATE, together with the cost of completing the work under CONTRACT, will be deducted from any monies due or which may become due the CONSULTANT.

4.11 CANCELLATION OF STATE CONTRACTS

In accordance with Arizona Revised Statutes 38-511, the STATE may cancel any CONTRACT, without penalty or further obligation, made after the effective date of this section by the STATE or any of its departments or agencies if any person significantly involved in initiating, negotiating, securing, drafting or creating the CONTRACT on behalf of the STATE or any of its departments or agencies is, at any time while the CONTRACT or any extension of the CONTRACT is in effect, an employee of any other party to the CONTRACT in any capacity or a CONSULTANT to any other party of the CONTRACT with respect to the subject matter of the CONTRACT. The cancellation shall be effective when written notice from the STATE is received by all other parties to the CONTRACT unless the notice specifies a later time.

4.12 SUCCESSORS AND ASSIGNS

The CONSULTANT and all successors, executors, administrators and assigns of CONSULTANT'S interest in the work or the compensation herein provided shall be bound to the STATE to the full legal extent to which the CONSULTANT is bound with respect to each of the terms and agreements of this CONTRACT.

4.13 CONTINUING OBLIGATION

The CONSULTANT agrees that if because of death or any other occurrence it becomes impossible for any principal or employee of the CONSULTANT to render the services required under this CONTRACT, neither the CONSULTANT nor the surviving principals shall be relieved of any obligation to render complete performance. However, in such event, the STATE may terminate this CONTRACT if it considers the death or incapacity of such principal or employee to be a loss of such magnitude as to affect the CONSULTANT'S ability to satisfactorily complete the performance of this CONTRACT.

4.14 INSURANCE

1. Without limiting any liabilities or any other obligations of the CONSULTANT, the CONSULTANT shall provide and maintain the minimum insurance coverage listed below. Coverage will be provided with forms and insurers acceptable to ADOT and maintained at a minimum until obligations under this CONTRACT are satisfied.

   a. If applicable, Workmen's Compensation insurance to cover obligations imposed by Federal and State statutes having jurisdiction of its employees engaged in the performance of the services, and Employers' Liability insurance with a minimum limit of one hundred thousand dollars ($100,000). Evidence of qualified self-insured status shall suffice for this section.

   b. Architects' and Engineer's Professional Liability insurance in the amount of one million dollars ($1,000,000) each claim, with said coverage to remain in force and effect for a minimum of one year past ADOT's acceptance of the CONTRACT.

   c. Comprehensive General Liability insurance with a minimum combined single limit of one million dollars ($1,000,000) each occurrence. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, contractors protective, products and completed operations. Said policy shall contain a severability of interest clause.

   d. Commercial Automobile Liability coverage with a combined single limit for bodily injury and property damage of not less than one million dollars ($1,000,000) for all owned, leased, hired and non-owned vehicles. The State of Arizona and the Arizona Department of Transportation must be named as Additional Insureds and Certificate Holder on the policy.

   e. Valuable Papers insurance in an amount sufficient to assure the restoration of any documents, memoranda, reports, or other similar data relating to the work of the CONSULTANT used in the completion of this CONTRACT.

   f. The policy required by Sections c. and e. above shall be endorsed to include the STATE and ADOT, its agents and officials and employees as additional insureds and shall stipulate that the insurance afforded CONSULTANT shall be primary insurance and that any insurance carried by ADOT, its agents, officials or employees shall be excess and not contributory insurance to that provided by CONSULTANT.

   g. A certificate of insurance acceptable to ADOT shall be issued to ADOT prior to commencement of the CONTRACT as evidence that policies providing the required coverages, conditions and limits are in full force and effect. Such certificate shall contain provisions that coverage afforded under the policies will not be cancelled, terminated or materially altered until at least 30 days prior written notice has been given to ADOT.

4.15 INDEMNIFICATION - RESPONSIBILITY FOR CLAIMS AND LIABILITIES

1. For Professional Liability

To the fullest extent permitted by law, the CONSULTANT shall indemnify and hold harmless the State of Arizona, its agents, representatives and employees from and against liability for loss or damage resulting from the negligence of the CONSULTANT, or any subconsultant, or anyone directly or indirectly employed by the CONSULTANT or any subconsultant, but only to the extent the loss or damage results from the negligence of the CONSULTANT, or any subconsultant, or anyone directly or indirectly employed by the CONSULTANT or any subconsultant.

2. For Other than Professional Liability

To the fullest extent permitted by law, the CONSULTANT shall indemnify and hold harmless the State of Arizona, its agents, representatives and employees from and against liability for loss or damage resulting from the negligence of the CONSULTANT, or any subconsultant, or anyone directly or indirectly employed by the CONSULTANT or any subconsultant, but only to the extent the loss or damage results from the negligence of the CONSULTANT, or any subconsultant, or anyone directly or indirectly employed by the CONSULTANT or any subconsultant.

4.16 ANTITRUST VIOLATIONS

The CONSULTANT and the STATE recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact borne by Purchaser or ultimate user: in this case, the STATE. Therefore, CONSULTANT, acting as a Vendor, hereby assigns to the STATE any and all claims for such overcharges.

4.17 LIQUIDATED DAMAGES

(This is an optional provision applied, on an exception basis, primarily to contracts initiated and administered by the Arizona Transportation Research Center - Not applicable to this contract)

4.18 CONSULTANT'S RESPONSIBILITY

The CONSULTANT has total responsibility for the accuracy and correctness of plans and related data prepared under the terms of this CONTRACT, and shall check all such material accordingly for completeness, missing items, correct multipliers and consistency. The plans will be reviewed by ADOT for conformity with ADOT procedures and contract terms. Review by ADOT does not include detailed review or checking of design of major components and related details or the accuracy with which such designs are depicted on the plans.

4.19 ACCURACY OF WORK

Acceptance of the work by the STATE will not relieve the CONSULTANT of the responsibility for subsequent correction of any such errors and the clarification of any ambiguities. The CONSULTANT shall make all necessary revisions or corrections resulting from errors and omissions on the part of the CONSULTANT without additional compensation.

4.20 CONSULTANT'S ENDORSEMENT OF PLANS, ETC.

The CONSULTANT'S seal shall be endorsed and affixed to plans, reports and engineering data furnished under this CONTRACT.

4.21 PROFESSIONAL CONDUCT

The CONSULTANT shall comply with the provisions of A.C.R.R.R4-30-301 (which is the official compilation of the Administrative Rules and Regulations for the State of Arizona), entitled Rules of Professional Conduct, Rules of the State Board of Technical Registration for Architects, Assayers, Engineers, Geologists, Landscape Architects and Land Surveyors, which are incorporated herein by reference and hereby made a part of the CONTRACT.

4.22 IMPROPER EXERCISE OF AUTHORITY

It is further understood and agreed that the CONSULTANT shall not in any way exercise any portion of the authority or powers of the State of Arizona, and shall not make a contract or commitment, or in any way represent itself as an agent of the State of Arizona beyond the scope of this CONTRACT unless expressly authorized, in writing, by the STATE.

4.23 CONFLICTS OF INTEREST

1. The CONSULTANT shall not engage the services on this CONTRACT of any present or former STATE employee who was involved as a decision maker in the selection or approval processes or who negotiated and/or approved billings or contract modifications for this CONTRACT.

2. The CONSULTANT agrees that no public or private interest exists and none shall be acquired directly or indirectly which would conflict in any manner with the performance of the CONTRACT.

4.24 ORGANIZATIONAL CONFLICTS OF INTEREST

1. No contract for the construction of a project shall be awarded to the firm that designed the project, or its subsidiaries, affiliates, the parent company or subconsultants, except with the written approval of the STATE.

2. The applicability of the above also applies to a Management and/or General Consultant or any of its subsidiaries, affiliates, the parent company or subconsultants that were involved in any aspect of the design process.

4.24.1 CONSULTANT - CONTRACTOR CONFLICTS OF INTEREST

The CONSULTANT agrees that it shall not perform services on this project for the contractor, sub-contractor or any supplier.

The CONSULTANT shall not negotiate, contract, or make any agreement with the contractor, subcontractor or any supplier with regard to any of the work under this project, or any services, equipment or facilities to be used on this project.

4.25 ORGANIZATION EMPLOYMENT DISCLAIMER

1. The CONTRACT is not intended to constitute, create, give to, or otherwise recognize a joint venture agreement or relationship, partnership, or formal business organization of any kind, and the rights and obligations of the parties shall be only those expressly set forth in the CONTRACT.

2. The parties agree that no persons supplied by the CONSULTANT in the performance of CONSULTANT's obligations under the CONTRACT are considered to be STATE employees, and that no rights of State civil service, retirement or personnel rules accrue to such persons. The CONSULTANT shall have total responsibility for all salaries, wages, bonuses, retirement, withholdings, workmen's compensation, occupational disease compensation, unemployment compensation, other employee benefits and all taxes and premiums appurtenant thereto concerning such persons, and shall save and hold the STATE harmless with respect thereto.

4.26 NONPROCUREMENT DEBARMENT AND SUSPENSION

1. In accordance with 49 CFR 29.505, and by signature on this CONTRACT, the CONSULTANT certifies its' compliance, and the compliance of any subconsultants or subcontractors present or future, by stating that any person associated therewith in the capacity of owner, partner, director, officer, principal investor, project director, manager, auditor, or any position of authority involving Federal Funds:

   a) is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal Agency;

   b) does not have a proposed debarment pending;

   c) has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal Agency within the past 3 years; and

   d) has not been indicted, convicted, or had a civil judgment rendered against the firm by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years as specified by 49 CFR paragraph 29.305(a).

Where the CONSULTANT or subconsultant is unable to certify to the statement in 4.26.1(a) above, the CONSULTANT or subconsultant will be declared ineligible to enter into CONTRACT or participate in the project.

Where the CONSULTANT is unable to certify to any of the statements as listed in 4.26.1 (b), (c) or (d), the CONSULTANT shall submit a written explanation to the STATE. The certification or explanation will be considered in connection with the STATE's determination whether to enter into CONTRACT.

2. The CONSULTANT shall provide immediate written notice to the Department if at any time the CONSULTANT or any subconsultants or subcontractors, present or future, learn that its Debarment and Suspension certification has become erroneous by reason of changed circumstances.

4.27 COVENANT AGAINST CONTINGENT FEES

The CONSULTANT warrants that he has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT, to solicit or secure this CONTRACT, and that he has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of this CONTRACT. For breach or violation of this warranty, the STATE shall have the right to annul this CONTRACT without liability, or in its discretion, to deduct from the contract price or consideration, or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

4.28 SUBLETTING, ASSIGNMENTS AND TRANSFERS

The CONSULTANT firm was chosen to perform the work on this CONTRACT based upon training and qualifications of its members. Therefore, subletting, assignment or transfer of any work to subconsultants and lower tier subconsultants, unless approved in writing by the STATE prior to performance of work, is expressly prohibited.

4.29 SUBCONSULTANTS

1. The CONSULTANT may retain Subconsultants on an "as required" basis, provided that the Subconsultants selected, and the rates to be paid, are identified on each Subconsultant's DERIVATION OF COST PROPOSAL located in the SCOPE OF WORK section, Appendix _____ of the CONTRACT, or are approved by contract modification, or by Administrative Determination Letter, as applicable. All Subconsultants shall be required to follow the terms and conditions of this CONTRACT.

   a. Subconsultants' Compensation

      Each Subconsultant will be expected to follow covenants set forth in 3.02 2. unless the subcontract is considered a Lump Sum by Task (fixed price) subcontract and not a Costs Plus Fixed Fee subcontract. However, with respect to 3.02 2.b.(5), the Indirect Costs (Overhead) rates for each Subconsultant, when applicable, will be the actual allowable overhead rate or the Negotiated Provisional rate stipulated in each Subconsultant's final DERIVATION OF COST PROPOSAL, as concurred with by the STATE. Each Subconsultant's actual allowable overhead rate or the negotiated provisional Overhead rate is separately determined and may not be the same rate as stipulated for the CONSULTANT.

b. CONSULTANT'S Responsibility Regarding Subconsultant's Costs

The Subconsultant's allowable costs shall be governed by 3.02 2. The CONSULTANT shall monitor the billings received from the Subconsultants and ensure that all costs are documented and supported.

Regarding Indirect Costs (Overhead), the CONSULTANT is responsible for determining that the Subconsultants comply with 3.02 2.b.(6) with respect to the actual allowable or negotiated provisional Overhead rates. The Overhead rates for Subconsultants are "actual allowable" or "negotiated provisional", and must be accounted for annually. A Subconsultant may not bill more than its actual allowable Overhead rate or the negotiated provisional Overhead rate. In the event any Subconsultant violates this subsection, the penalties set forth in 3.02 2.b.(6)(a) will be assessed to the CONSULTANT.

All costs of the Subconsultants are subject to audit unless waived by the STATE. The cost to the STATE for Subconsultants shall be in amounts equal to the actual allowable costs paid to the Subconsultants.

2. The volume of work performed by the Subconsultants shall not exceed 49% of the total contract value unless waived by the STATE.

4.30 SUBCONTRACTS

The CONSULTANT agrees to insert in all subcontracts the clauses hereof entitled "Civil Rights," "Affirmative Action," "Ownership of Documents," "Patents and Copyrights", "Anti Lobbying and Disclosure," "Retention of Records" and "Immigration". The CONSULTANT further agrees to insert in any subcontract exceeding $100,000 the clause hereof entitled "Environmental Protection."

4.31 KEY PERSONNEL

Any substitution or transfer of personnel specifically identified in CONSULTANT'S proposal as assigned to the work of this CONTRACT shall be subject to prior written approval by the STATE.

4.32 EMPLOYMENT OF PERSONNEL OF PUBLIC AGENCIES

The CONSULTANT shall not engage the service of any person or persons then in the employ of the STATE for work covered by the terms of this CONTRACT without the prior written approval of the STATE.

4.33 ANTI-LOBBYING

1. The CONSULTANT agrees to comply with the provisions of Section 1352 of Title 31, U.S.Code (Public Law 101.121) as codified in Title 48, Federal Acquisition Regulations Subpart 3.8 and Subpart 52.203-11. The legislation prohibits federal funds from being expended by a recipient or any lower tier sub-recipients of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence a Federal agency or Congress in connection with the award of any Federal contract, cooperative agreement, including the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan or cooperative agreement. All disclosure statements are to be furnished to the STATE.

2. The CONSULTANT agrees to require all subconsultants and lower tier subconsultants who have agreements exceeding $100,000 to complete the Certification of Federal Contracts (ECS Form 90-1) and, when appropriate, the Disclosure of Lobbying Activities (ECS Form 90-3) prior to execution of the Prime Consultants Agreement with the STATE. Lower tier certifications are to be maintained by the CONSULTANT.

4.34 OWNERSHIP OF DATA

1. The CONSULTANT agrees to maintain (in sufficient detail as will properly reflect all work done and results achieved in the performance of this CONTRACT) tracings, plans, specifications and maps, basic survey notes and sketches, books, records, reports, research notes, charts, graphs, comments, computations, analyses, recordings, photographs, computer programs and documentation thereof, and other graphic or written data generated in connection with the work called for in the CONTRACT; all such information and documentation to be termed "Data" under this CONTRACT.

2. All Data procured hereunder for the work funded by ADOT shall become the property of ADOT and delivered to ADOT upon request, and shall not be used or released by the CONSULTANT or any other person except with the prior written approval of the STATE; provided however, that CONSULTANT shall not be required to retain any Data not requested by ADOT within five years from the date of final payment to the CONSULTANT hereunder; and provided further that until such delivery to ADOT the CONSULTANT agrees to permit representatives of ADOT and the Federal Highway Administration to examine and review at reasonable times all Data still in the possession of the CONSULTANT.

3. All services, information, computer program elements, reports and other deliverables which may be patented or copyrighted and created under this CONTRACT are the property of the State of Arizona and shall not be used or released by the CONSULTANT or any other person except with the prior written approval of the STATE.

4.35 ADOT PRODUCTS

ADOT will provide the consultant with the ADOT developed software for the sole purpose of completing this contract, as set forth in the Site License Contract (which includes a detailed list of Software that will be provided to the consultant). The software is provided to the

consultant solely for the purpose of completing this contract and for no other purposes. ADOT developed software including: manuals, electronic information, programs, and associated materials, remains the property of ADOT. Any use of this software for purposes other than the fulfillment of this contract is strictly prohibited. The consultant shall not copy the software or provide, distribute or demonstrate the software to other entities. Upon completion of the contract or when otherwise notified by ADOT, the contractor will return all software, backup copies, manuals, electronic information and associated materials to ADOT.

4.36 RETENTION OF RECORDS

1. The CONSULTANT and any subconsultant/subcontractor/vendor shall keep and maintain all books, papers, records, accounting records, files, accounts, reports, costs proposals with backup data and all other material relating to the CONTRACT and related project(s), and shall make all such material available at any reasonable time during the term of work on the CONTRACT and related project(s) and for five (5) years from the date of final payment to the CONSULTANT for auditing, inspection and copying upon the STATE'S request, or at the request of the Federal Highway Administration or any other authorized representative of the Federal Government.

2. The CONSULTANT shall insert in each of its subcontracts the above requirement and also a clause requiring its subconsultants to include the above requirement in any lower-tier subcontracts or purchase orders.

4.37 REVIEW AND INSPECTION

Representatives of the STATE and the Federal Highway Administration are authorized to review and inspect the CONTRACT activities and facilities during normal business hours.

4.38 PROPERTY OR EQUIPMENT

Except as otherwise provided in this CONTRACT, the lease, rental or purchase of property or equipment to perform the work herein described must have the prior written approval of the STATE. The control, utilization and disposition of property or equipment acquired using FEDERAL/STATE funds shall be determined by the STATE in accordance with the property management standards set forth in 49 CFR Part 18 , ADOT Manual - FIN 11.02, and Highways Division Policy and Implementation Memorandum No. 89-04.

4.39 CIVIL RIGHTS

1. The CONSULTANT is required to comply with Executive Order 75-5, "Non-discrimination in Employment by Government Contractors and Subcontractors," which is hereby included in its entirety by reference and considered a part of this CONTRACT.

2. The CONSULTANT is required to comply with Title VI of the Civil Rights Act of 1964, as amended. Accordingly, Title 49, Code of Federal Regulations, Part 21 through Appendix H and Title 23, CFR 710.405 (b) are made applicable by reference and are hereinafter considered a part of this CONTRACT.

3. The CONSULTANT is required to comply with the provisions of Executive Order 11246, entitled "Equal Employment Opportunity," as amended by Executive Order 11375, and as supplemented in Department of Labor Regulations (41-CFR Part 60). Said provisions are made applicable by reference and are hereinafter considered a part of this CONTRACT.

4. The CONSULTANT shall post in conspicuous places available to employees and applicants for employment, the following notice:

> It is the policy of this company not to discriminate against any employee, or applicant for employment, because of race, color, religion, creed, national origin, sex, age, handicapped, or disabled veterans and Vietnam era veterans. Such actions shall include, but are not limited to: employment, upgrading, demotion, transfer, recruitment, or recruitment advertising; laying-off or termination; rates of pay or other compensation; and selection for training, and on-the-job training. Also, it is the policy to insure and maintain a working environment free of harassment, intimidation and coercion.

4.40 AFFIRMATIVE ACTION

CONSULTANT shall take the following affirmative action steps with respect to securing supplies, equipment or services under the terms of this CONTRACT:

1. Include qualified firms owned by socially and economically disadvantaged individuals on solicitation lists.

2. Assure that firms owned by socially and economically disadvantaged individuals are solicited whenever they are potential sources.

3. When economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum participation by firms owned by socially and economically disadvantaged individuals.

4. Where the requirement permits, establishing delivery schedules which will encourage participation by firms owned by socially and economically disadvantaged individuals.

5. Use the services and assistance of the Small Business Administration, the Office of Minority Business Enterprise of the Department of Commerce and the Community Services Administration as required.

4.41 PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES

The CONSULTANT is required to adhere to the commitment made to participation by ADOT certified Disadvantaged Business Enterprises (DBE) as indicated in the firms Technical Proposal or subsequently agreed to by the STATE during negotiations. The STATE, at its discretion on a case by case basis, may waive the above limitations.

The CONSULTANT must submit the DBE Compliance Report to the Civil Rights Office by the 3rd Friday of each month. The report shall indicate the amount earned by and paid to each DBE working on the project for the preceding month.

4.42 ENVIRONMENTAL PROTECTION
(This clause is applicable if this contract exceeds $100,000.00. It applies to Federal Aid Contracts Only.)

CONSULTANT is required to comply with all applicable standards, orders or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857 (h), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15) which prohibit the use under non-exempt Federal contracts, grants or loans of facilities included on the EPA List of Violating Facilities. Violations shall be reported to the Federal Highway Administration and to the U.S.E.P.A. Assistant Administrator for Enforcement. (EN-329).

4.43 ENERGY CONSERVATION
(This clause is applicable to Federal Aid Contracts Only.)

CONSULTANT is required to comply with mandatory standards and policies, as applicable, relating to energy efficiency which are contained in the State Energy Conservation Plan issued by the State of Arizona in compliance with the Energy Policy Conservation Act (P.L. 94-163).

4.44 PUBLICATION PROVISIONS

The CONSULTANT shall provide annual, quarterly or monthly written progress reports requested by the STATE. Prior to completion of the CONTRACT and related project(s), the CONSULTANT shall prepare a final report summarizing activities, conclusions, and recommendations in a form as prescribed by the STATE, and this report shall be a prerequisite for final payment. Publication rights to all reports are reserved by the STATE. The CONSULTANT shall not release information developed under the CONTRACT prior to publication, except upon written approval of the STATE.

4.45 PUBLICATION PROVISIONS (RESEARCH AND UNIVERSITIES)
(Not applicable to this contract)

4.46 PATENTS AND COPYRIGHTS

All services, information, computer program elements, reports and other deliverables which may be patented or copyrighted and created under this CONTRACT are the property of the State of Arizona and shall not be used or released by the CONSULTANT or any other person except with the prior written approval of the STATE.

4.47 PATENTS AND COPYRIGHTS (RESEARCH AND UNIVERSITIES)
(Not applicable to this contract)

4.48 FEDERAL IMMIGRATION AND NATIONALITY ACT:

1. General: The consultant, including all subconsultant, shall comply with all federal, state and local immigration laws and regulations, as set forth in Arizona Executive Order 2005-30, relating to the immigration status of their employees who perform services on the contract during the duration of the contract. The State shall retain the right to perform random audits of consultant and subconsultant records or to inspect papers of any employee thereof to ensure compliance.

2. Compliance Requirements: By submission of a proposal, the consultant warrants that the consultant and all proposed subconsultants are and shall remain in compliance with all federal, state and local immigration laws and regulations relating to the immigration status of their employees who perform services on the contract. The State may, at its sole discretion, require evidence of compliance from the consultant shall have ten working days from the receipt of the request to supply adequate information.

   The Department will accept, as evidence of compliance, a showing by the consultant or subconsultant that it has followed the employment verification provisions of the Federal Immigration and Nationality Act as set forth in Sections 274A and 274B of that Act, including implementation of regulations and agreements between the Department of Homeland Security and the Social Security Administration's verification service.

   The Consultant shall include the provisions of Subsection 4.30 in all its subcontracts.

3. Sanctions for Non-Compliance: Failure to comply with the immigration laws or to submit proof of compliance constitutes a material breach of contract. The Department will reduce the consultant's compensation by $10,000 for the initial instance of non-compliance by the consultant or subconsultant. Should the same consultant or subconsultant commit subsequent violations within a two-year time period from the initial violation, the consultant's compensation will be reduced by $50,000 for each violation. The third instance by the same consultant or subconsultant within a two-year period may result, in addition to the $50,000 reduction in compensation, in removal of the offending consultant or subconsultant, suspension of work in whole or in part or, in the case of a third violation by the consultant, termination of the contract for default. In addition, the Department may debar a consultant or subconsultant who has committed three violations within a two-year period for up to one year. For purposes of this paragraph, a violation by a subconsultant does not count as a violation by the consultant.

   Any delay resulting from a sanction under this subsection is a non-excusable delay. The consultant is not entitled to any compensation or extension of time for any delays or additional costs resulting from a sanction under this subsection.

<u>An example of the sanctions under this subsection is presented in the following table:</u>

Offense by:			Reduction in Compensation
Consultant	Subconsultant A	Subconsultant B	
First			$10,000
	First		$10,000
	Second		$50,000
		First	$10,000
	Third		$50,000 *
* May, in addition, result in removal of the subconsultant and/or debarment of the subconsultant.			

In Witness whereof the parties hereto have executed this agreement as of the day and year first herein written.

FOR THE STATE **ARIZONA DEPARTMENT OF TRANSPORTATION**

_____ **By:**_____
Date

_____
Title

FOR THE CONSULTANT **FIRM NAME**

_____ **By:**_____
Date

_____
Title