CITY OF PRESCOTT
ARIZONA
Everybody's Hometown

REQUEST FOR PROPOSAL AND QUALIFICATIONS

ENGINEERING DESIGN SERVICES

for

AIRPORT WELL #4 DRILLING AND EQUIPPING PROJECT

Public Works Department

Telephone: (928) 777-1130

Fax: (928) 771-5929

Due Date: April 21, 2016

REQUEST FOR PROPOSAL AND QUALIFICATIONS

AIRPORT WELL #4 DRILLING AND EQUIPPING PROJECT

The City of Prescott, Arizona, Requests Proposals and Qualifications (RFPQ) from design professionals/engineering firms to provide services related to the Airport Well #4 Drilling and Equipping Project. Proposals must be received before 2:00 PM on Thursday, **April 21, 2016**, at the City Clerk's Office, 201 S. Cortez Street, Prescott, Arizona 86303, at which time all proposals will be publicly opened. Any proposals received after such time will be returned unopened.

Proposals must conform to this RFPQ and the attached Project Scoping Report. The City reserves the right to reject any and all proposals and the City assumes no liability for the cost of preparing a response to this request.

Copies of the RFPQ are available for public inspection at the Public Works Department, 433 N. Virginia Street, Prescott, Arizona 86301, (Phone: (928) 777-1130; TDD: (928) 777-1100) and can be downloaded from the City's website at: http://www.prescott-az.gov/business/bids/.

A **mandatory** pre-proposal conference will be held at the Public Works conference room, 433 N. Virginia Street, Prescott, AZ 86301 at 2:00 PM on April 6, 2016.

Ken Comstock, Contract Specialist
Published: 2TC March 27, 2016 and April 3, 2016

REQUEST FOR PROPOSAL AND QUALIFICATIONS

AIRPORT WELL #4 DRILLING AND EQUIPPING PROJECT

A. DESCRIPTION OF WORK

The City of Prescott will be reviewing the proposals and qualifications of consulting firms for the purpose of entering into contracts for the following services:

The City of Prescott (City) currently utilizes well fields located in Chino Valley, for the City's primary water supply. In 2005, the Arizona Department of Water Resources (ADWR) granted the City an increase in its Designation of Assured Water Supply. Because of this increase, ADWR requested well capacity be augmented in proximity to the recharge facility in the airport area. Development of additional wells in the airport area will assist in reducing pumping requirements from the Chino Valley well fields while increasing reliability to the supply infrastructure because of the closer proximity to the City. A well site within the Zone 12 Tank Tract has already been secured for this project. The Zone 12 Tank project has provided a pump house with appurtenances ready to expand into a fully functioning well site.

The selected consultant will be contracted to verify through hydrogeology / geophysical testing if the secured well site will produce a sufficient quantity and quality of water to warrant drilling and equipping a well. It is anticipated that the consultant may drill one or more pilot wells and test for water quality including arsenic and other contaminants. If verification is positive, the consultant will design the production well, participate through post design services in the drilling and testing: Design and equip the new well site, participate in additional post design services through the construction phase, facility start up and integration into the water production system. The consultant will provide permitting through the ADWR and ADEQ for the well drilling, Authorization to Construct (ATC) and Approval of Construction (AOC).

All appurtenances will be included in the design for a fully functioning system from the production well, water tank and associated structures. SCADA, programming, interface and all software components shall be provided as part of the contract with the Consultant.

Additional information is included in the attached Project Scoping Report.

B. SUBMITTAL

Sealed Proposals and Statements of Qualifications will be received before 2:00 PM on Thursday **April 21, 2016**, at the City Clerk's Office, 201 South Cortez Street, Prescott Arizona 86303, at which time all submittals will be publicly opened. Any submittals received at or after 2:00 PM on the above-stated date will be returned unopened.

Proposals shall be submitted in seven (7 copies), and must conform to the attached Project Scoping Report dated March 22, 2016. The City of Prescott reserves the right to reject any and all statements and the City assumes no liability for the cost of preparing a response to this request.

The outside of the proposal envelope shall indicate the name and address of the respondent, shall be addressed to the City Clerk, City of Prescott at the above address and shall be marked: **Proposal and Statement of Qualifications: Airport Well #4 Drilling and Equipping**

C. **EVALUATION AND FORMAT OF PROPOSALS AND STATEMENTS OF QUALIFICATIONS;**

C.1 EVALUATION

Proposals and Statements of Qualifications will be evaluated by a Review Committee appointed by the City for this project according to the following criteria, with weighting as indicated:

1) Specific experience of the firm with comparable production well designs in municipalities within the Prescott AMA - 20%

2) Experience and performance of the proposed project team and availability, within current and anticipated workload, for this project - 20%

3) Proposed project approach including alternative delivery methods, to include a detailed discussion and identification of areas that will require special attention - 30%

4) Overall quality of the Proposal, evidencing interest in the project - 15%

5) Knowledge and experience with City of Prescott rules, regulations, procedures and local / regional construction conditions including subsurface, hydrological and geophysical conditions - 15%

C.2 STATEMENTS OF QUALIFICATIONS

The statement shall be limited to no more than 5 pages, and include the following:

- Location of the firm
- Names of the team members proposed for the project
- A list of similar projects in which the team has participated, and contact information
- A brief resume of each of the team members describing their experience and background
- A summary of the current workload of key team members and list of their notable projects
- A list of all sub-consultants proposed to be utilized on the project and a description of their roles

Five (5) additional pages of appendices are allowed and may include graphs, charts, photos, or additional resumes. The letter of transmittal shall not exceed two pages and is exclusive of the 5/5 page limitation for the Statement of Qualifications.

C.3 PROPOSAL

The proposal shall be limited to no more than 5 pages, and include the following:

- A tentative schedule for completion of the project
- A proposal that demonstrates that the firm understands of the project purpose and scope, and a description of how the firm would approach, manage, and complete the project. Refer to the attached Project Scoping Report for the City's expectations.
- Identify any suggestions to improve the project and/or schedule of delivery for the project.
- Cost Proposals will not be accepted with the initial response to this RFP. Submittal of a cost proposal with this RFP will automatically disqualify the submitting firm. Once selected, the City will negotiate a final scope of work and cost proposal with the successful firm.

Three (3) additional pages of appendices are allowed and may include graphs, charts, photos, or any additional information that would aid the review team in ranking this submittal.

D. SHORTLIST AND INTERVIEWS

Following evaluation of the Proposals and Statements of Qualifications, a shortlist of up to five (0-5) firms will be determined based upon the composite score of Review Committee members. A presentation-interview session with each of the top ranked firm(s) will comprise the second half of the evaluation/selection process, if deemed necessary by the City. In the presentation-interviews, candidate firms will be required to demonstrate their understanding and familiarity with the scope, location, and other aspects of this project. The Review Committee will have the opportunity to discuss questions regarding the firms' submittal and presentation at that time. Criteria and weighting for evaluation of the presentation-interviews are as follows:

1) Grasp of key project information, and alternative delivery methods to deliver a complete project. - 30%

2) Observation of existing conditions, and identification of issues or problems (solutions) that will need to be considered - 25%

3) Approach to project reports, information gathering and analysis, report formatting, including innovative ideas - 15%

4) Experience, capabilities, and understanding of hydrogeology and geophysical conditions; well drilling and equipping in the Prescott AMA - 30%

It is highly recommended that candidate firms visit the project site.

The City reserves the right to proceed to Final Ranking based on the Proposals and Statements of Qualifications submitted without conducting Interviews.

E. FINAL RANKING AND CONTRACT NEGOTIATION

The Review Committee members will individually evaluate the presentation-interviews of each of the candidate firm(s) and rank them according to the aforementioned criteria. The Review Committee will also consider information from the Proposals and Statements of Qualifications in their final ranking of firm(s). The Review Committee will then formulate a consensus ranking, notify each of the candidate firms of the final rankings and meet with the top-ranked firm for the purpose of initiating contract negotiations. If negotiations are unsuccessful with the top ranked firm, the City will terminate negotiation efforts and open negotiations with the 2nd ranked firm. This process will continue until negotiation efforts are successful. The final list will remain in effect for a period of twelve months from the date of issuance by the City. The City also reserves the right to reject all submittals and readvertise the project should the City not reach agreement on the terms of the contract with the selected firm(s).

Approval of the City Council will be required for award of a contract for performance of the services described herein.

CITY OF PRESCOTT
ARIZONA
Everybody's Hometown

Public Works Department

433 N. Virginia Street
Prescott AZ 86301
928-777-1130

Project Scoping Report
03/22/2016

Project Description

Project Name:	Airport Well #4 Drilling and Equipping
Project Type:	Water
Project Account No.(s)	15017
Funding Sources:	Water Fund/Water Impact Fees 7007810 8930 / 71B7810 8930

Project Schedule:

	Begin	End
PS&E	FY16	FY17
Construction	FY17	FY17

Project Team

Project Review Team:	Project Manager – Ben Burns Program Development Manager- Stephen Orosz Utilities Manager – Craig Dotseth City Engineer–Charles Andrews Drainage Engineering- Marc DuBroy Traffic Engineering- Ian Mattingly Utilities Engineering- Bruce Canavan Water Operations – Scott Ketchmark	
Prime Consultant:	TBD	
Sub-consultants:	Environmental/Permitting:	TBD
	Geotechnical:	TBD
	Systems Engineer:	TBD

Goal Statement

The project goal is to deliver a quality project on time that accomplishes the design, drilling and equipping of a new City of Prescott recovery / production well located in the City of Prescott Airport area.

The City will consider alternative delivery methods to meet the project goal.

Project Description

The City of Prescott (City) currently utilizes well fields located in Chino Valley, for the City's primary water supply. In 2005, the Arizona Department of Water Resources (ADWR) granted the City an increase in its Designation of Assured Water Supply. Because of this increase, ADWR requested well capacity be augmented in proximity to the recharge facility in the airport area. Development of additional wells in the airport area will assist in reducing pumping requirements from the Chino Valley well fields while increasing reliability to the supply infrastructure because of the closer proximity to the City. A well site within the Zone 12 Tank Tract has already been secured for this project. The Zone 12 Tank project has provided a pump house with appurtenances ready to expand into a fully functioning well site.

The selected consultant will be contracted to verify through hydrogeology / geophysical testing if the secured well site will produce a sufficient quantity and quality of water to warrant drilling and equipping a well. It is anticipated that the consultant may drill one or more pilot wells and test for water quality including arsenic and other contaminants. If verification is positive, the consultant will design the production well, participate through post design services in the drilling and testing: Design and equip the new well site, participate in additional post design services through the construction phase, facility start up and integration into the water production system. The consultant will provide permitting through the ADWR and ADEQ for the well drilling, Authorization to Construct (ATC) and Approval of Construction (AOC).

All appurtenances will be included in the design for a fully functioning system from the production well, water tank and associated structures. SCADA, programming, interface and all software components shall be provided as part of the contract with the Consultant.

Project Limits - Existing Conditions:

- A parcel (Tract G-Tank Site) was dedicated to the City of Prescott as part of the Granite Dells Estates Development. Drilling and equipping of the well will take place within this parcel. Production quantity and quality in this area is uncertain.
- Other well locations may be evaluated in the general area if initial pilot hole results do not indicate sufficient water quantity and quality.

Associated Project Studies:

- City of Prescott Well Development Plan, February 2015

Adjacent Public CIP Projects:

- Zone 12 Tank
- Zone 12 Water Improvements South of State Route 89A Phase 2
- Zone 101 Pump Station

Adjacent Private Development Projects:

- Granite Dells Estates

Public Involvement:

- It is not anticipated that there will be any significant impacts to the general public. Public meetings are not anticipated.

Primary Technical / Administrative Issues

Existing Utilities:

- A 16-inch water main and 18-inch water main enter Tract G from the north.

Utility Relocation Issues:

- None

Design:

Roadway Design

- None

Drainage Design

- Typical sight SWPPP
- Consultant must consider overflow, purging, testing and associated runoff.

Sewer Design

- None

Water Design

- Research all existing ADWR registered wells in the vicinity of the proposed site to establish potential water quantity projections.
- Perform hydrogeology testing at the well site to verify well production quality and quantity.
- Conduct an Expanded Well Impact Analysis
- Create a Well Development Plan with Model Analysis for dealing with potential private well impacts.
- Design of completed well and pumping system.
- The new well head shall tie into the existing system provided in the Zone 12 Tank Site.

Geotechnical Design and Recommendations

- Consultant to retain a qualified geotechnical firm to complete a subsurface investigation; and provide recommendations for site work to include building foundation, and pipeline.

Private Development Partners:

- None

Right-of-Way (R.O.W.) and Easements:

The development area is very tight. Temporary construction easements may be required for various elements of the project and will be prepared by the Consultant in coordination with City ROW specialist.

Environmental Constraints – Required Permits:

100-Year Floodplain –

- None

Railroad – Not Applicable

ADOT – Not Applicable

AZDEQ –

- Consultant will acquire all ADEQ permits, including the Approval to Construct (ATC), Approval of Construction (AOC), and the Engineer's Certificate of Completion.
- The project will need to obtain an AzPDES permit and proper erosion control BMPs will need to be incorporated into the plans and construction methods.
- Dust Control measures will need to be incorporated into the construction methods and a City construction permit will be required.

ADWR –

- Prepare a "Notice of Intent to Drill a New Well" (NOI) and submit to ADWR
- Prepare a well impact analysis and submit to ADWR
- Prepare a Production / Recovery Well Permit application and submit to ADWR
- Prepare New Source Approval
- Prepare Exploratory Well Permit
- Obtain waiver documents from possible impacted existing well owners for submittal with the NOI.

Yavapai County –

- Not Applicable

Other Municipalities –

- Not Applicable

Archaeological/Cultural Issues –

- Not Applicable

Endangered Species Act (ESA) –

- Not Applicable

Required Environmental Permits/Approvals -

- AZDOT Permit - None
- NPDES Permit – SWPPP and NOI
- FEMA – None

Construction Issues:

- The well site is already established. The construction area will be very tight with an existing 3.25 million gallon tank, pump house, and surrounding CMU wall in close proximity.

City Liability and Risk Assessment

- Well production quality is unknown. If pilot well results indicate quantity and quality is substandard a production well will not be drilled at this location.
- If production quantity is acceptable but quality is substandard (i.e. high arsenic found in the water), a treatment facility will need to be constructed. The contract will be modified to accommodate the additional design, and post design engineering services for the treatment facility. The City would anticipate the treatment plant process to be similar to that constructed at Airport Well #3.

Design Deliverables

1. ***Project Kick-Off Meeting.*** The Consultant will be required to attend a kick-off meeting with City staff at a time and on a date amenable to both parties. At that meeting, the Consultant will be required to provide a detailed design schedule, a list of the team members who will be involved in the project, along with their phone numbers and e-mail addresses, an org. chart showing the relationship of all of the team members and any submittals required contractually.

2. ***Design Schedule for Drilling and Equipping.*** The Consultant will be required to submit a detailed schedule depicting all major tasks and primary submittal dates for approval by the City. Thereafter, the Consultant shall submit monthly project schedule updates in the same format and shall highlight and provide justification for any changes to the approved schedule. The Consultant shall include 3 weeks for each of the City review periods.

3. ***Public Meetings.*** N/A

4. ***Preliminary Design Report and Preliminary Construction Cost Estimate for Drilling and Equipping.*** Within 60 days of entering into a contract with the City of Prescott, the Consultant will be required to provide a set of preliminary alignment plans, a preliminary design report with major infrastructure components sized and a preliminary cost estimate. An analysis of alternate considerations shall be included in this submittal outlining hydrological and geophysical testing estimations and recommendations. The appropriate exploration method recommended and used by the consulting firm should be based on specific survey needs and site characteristics.

5. ***Utility Review.*** Concurrent with submittal to the City of the 30% design, the Consultant shall submit copies to the private utility companies (electric, cable, telephone, gas) for their comments and/or clearance letters. The Consultant will provide to the City copies of each of the transmittal letters to each of the utilities. If necessary, a meeting will be held between the Consultant and reviewing agencies to discuss the conceptual plan and construction scheduling. Based upon input from the 30% plans, the Consultant shall submit a revised design completion schedule.

6. ***Utility Potholing.*** Based on the results of utility research, the need for utility potholing to establish existing horizontal and vertical locations of utilities will be established. For the purpose of this scope, the Consultant shall provide up to eight (8) utility potholes.

7. ***Geotechnical and Hydrological/Geophysical Investigation and Recommendations.*** A geotechnical and hydrological report will be prepared to identify subsurface conditions. The *Geotechnical* investigations will identify the need for any special equipment for excavation. Two (2) soil borings up to eight (8) feet in depth will be performed and a geotechnical report will be prepared. Findings in the geotechnical report will be incorporated into the design and specifications. The *Hydrological/Geophysical* investigation may use a variety of testing methods to identify hydrological conditions of the aquifer. Findings shall be incorporated into the design specifications for the well drilling and equipping.

8. ***Preparation of Preliminary (30%) Design.*** The conceptual design shall identify exiting conditions including: right-of-way and easements; topography; benchmarks; adjacent property lines; existing pavement limits; proposed plan and profile pipe alignments; and all utilities (electric, gas, fiber, water, sewer, effluent, and storm drain) located within the project limits. The conceptual design shall further identify any required additional easements/right-of-way; all existing water meters, water valves, sewer manholes and cleanouts and any other utility fixture or potential utility conflict, and any other efforts required to design and construct a quality product. The design submittal shall include a detailed construction cost estimate.

   In generating the specifications, the Consultant shall adhere to the City's boilerplate for Technical Specifications unless conditions require Special Provisions. ALL bid items SHALL be addressed in the Technical Specifications or Special Provisions. Items NOT required for the project SHALL be deleted from the text. Any deviation(s) from the boilerplate shall be brought to the City's attention. If the Consultant uses CSI 1995 format (Division 0 through 17); the Consultant will remove all Division Specifications that conflict with City Technical Specifications or the City Contract. All Division Specifications that are NOT required for the project SHALL be deleted from the text.

9. ***Preparation of Preliminary (60%) Design.*** Review comments shall be solicited, received and addressed by the Consultant. Utility conflicts that were identified from the Utility Review shall be addressed with a detailed approach for mitigation of these conflicts and coordination with respective utility companies.

10. ***Preparation of Pre-Final (90%) Plans, Specifications, and Estimate for Submittal to City and Utility Companies.*** Final review comments shall be solicited, received, and addressed by the Consultant.

11. ***Regulatory Agency Review.*** It shall be the responsibility of the Consultant to prepare the application, plans, specifications, and design report for submittal by the City to ADEQ and ADWR for review, respond to comments and obtain the "Approval to Construct", "Notice of Intent to Drill a New Well", permitting of production / recovery well, and new source approval. Any review fees assessed by the regulatory agency will be paid by the City. It will be the responsibility of the Engineer to include estimated time frames for the reviewing agency in the schedule.

12. ***Preparation of Easement Legal Descriptions and Map/Drawings.*** The Consultant shall prepare all legal descriptions, maps, and obtain all pertinent title reports for the acquisitions of additional easements (temporary construction or permanent) required, if any, to construct the proposed improvements. In the event additional easements are needed to construct the project, the Consultant shall provide two (2) originals of detailed legal descriptions and maps/drawings, both stamped by a Registered Land Surveyor. The Consultant may be required to accompany the City (or their representative) at meeting(s) held with the respective property owner(s) to explain the need for the taking and it's affect on the property. The Consultant will NOT be required to negotiate with the pertinent property owners for the acquisitions of any of the required easements. A final easement map (record of survey) will be required which indicates new permanent easements required. The additional easements shall be staked prior to meetings with property owners.

13. ***Pre-Final (90%) Design Meeting.*** A meeting will be held between the Consultant and the City to discuss any revisions or additional work required for generation of final (100%) plans and specifications.

14. ***Final Concept Stakeholder/Public Meeting.*** N/A

15. ***Preparation of Final (100%) Plans, Specifications, Design Report, Bid Schedule and Engineers Estimate.*** The final plans shall be prepared incorporating any adjustments or corrections made during the review of the pre-final plans. A set of final reproducible plans shall be provided on 3 mil Mylar and on disk (compatible with AUTOCAD *.DXF). A hard copy and disk of specifications, bid schedule, and engineers estimate, shall be submitted (compatible with Microsoft Word). Plans shall not be considered final until ADEQ "Approval to Construct" is acquired and City has approved the final PS&E. The Consultant will only be responsible for the technical provisions portion of the specifications, bidding schedule, and engineer's estimate. The City will prepare the formal contract documents.

16. ***Construction Pre-Bid Meeting.*** The Consultant shall attend the construction pre-bid meeting held by the City of Prescott to answer questions from prospective bidders. In the

event an addendum is required, the Engineer shall prepare the necessary changes to the plans and specifications.

17. ***Pre-Construction Meeting.*** The Consultant shall attend the pre-construction meeting held by the City of Prescott to answer questions from the construction contractor. The Consultant shall be prepared to address any design questions presented by the contractor.

18. ***Monthly Progress Meetings.*** In addition to those meetings indicated above, the Consultant shall meet monthly with the City to discuss the project status and any pertinent issues.

19. ***Benchmarks.*** The Consultant will be responsible for finding or setting sufficient temporary benchmarks in the field to allow the project to be constructed in accordance with the design. Permanent benchmarks may be included in some projects.

20. ***Provision of Post-Design Consultation Services for Drilling and Equipping.*** The Consultant will be retained to provide consultation assistance during construction, relative to questions pertaining to their design. Construction meeting attendance, technical submittals, RFI's, as-built coordination and preparation, quality assurance/control, project closeout, certification, and other construction phase engineering services shall be anticipated functions of the engineer of record. The Consultant will be responsible for SCADA Programming, Interface, Startup and Commissioning of the well. These items may not be part of the Contractors tasks during construction, but may be part of the Consultants contract.

21. ***Meeting Minutes.*** The Consultant shall be responsible for recording and preparing accurate minutes from all meetings involved with the project. A hard copy and disk of the minutes shall be submitted to the Public Works Department. The disk must be compatible with Microsoft Word.

Miscellaneous Other Deliverables

- Technical Design Reports (Drainage, Water, and Structural Reports)
- SWPPP Plan
- Other as may be required

Post-Design Construction Services

- Submittal / RFI reviews
- System Consultant for SCADA required for testing
- As-Built surveying and final mylar preparation; As-built certification
- Attending construction meetings
- Completion of ECC
- Completion of Well Permitting
- Construction to be managed and QA inspection by City personnel. Consultant to be retained as Engineer of Record for completion of project.

Major Milestones

Milestone	Tentative Date
Advertise RFP/RSOQ	March/April, 2016
Award Design Contract	June, 2016
Survey complete	TBD
Preliminary Design Report Complete	TBD
30% Design Complete	TBD
60% Design Complete	TBD
90% Design Complete	TBD
R/W Easements Complete	TBD
100% Plans and Specs complete	TBD
Bid Award	TBD
Begin Construction	TBD
Construction Complete	June, 2017
Project Close-out Complete	TBD

Miscellaneous Products

- Plans and Specifications
- Engineer's Estimate
- Geotechnical Report
- Hydrological / Geophysical Report
- Technical Information Report
- Project Schedule
- Water Quality Analysis
- Consultants Well Completion Report
- As-builts
- Engineers Certificate Of Completion

Approvals

City Engineer _____ Date 3-29-16

Charles Andrews, PE

Program Development Manager _____ Date 3-22-16

Stephen Orosz, PE

Utilities Manager

Craig Dotseth Date 3-24-16

Craig Dotseth

City of Prescott
CIP Design Submittal Requirements

In order to maintain a consistent and effective review of the plans, it is important for the necessary information to be provided as follows:

30% Submittal

1. Preliminary water design report
2. Preliminary drainage design report
3. Preliminary geotechnical report
4. Preliminary hydrological / geophysical report
5. Preliminary pavement recommendations
6. Aerial photograph with catch points & preliminary right-of-way superimposed (1:50) scale
7. Preliminary plan & profile for all required facilities – road, water, storm sewer
8. Preliminary catch points
9. Alternative drainage analysis, conceptual drainage layout
10. Conceptual wall locations
11. Conceptual storm water control facility location
12. Preliminary land acquisition estimate
13. Preliminary utility conflicts and relocations (dry & wet utilities)
14. Preliminary typical sections
15. Preliminary erosion control sheets
16. Total Estimated Quantities and Engineer's Estimate
17. Value Engineering Study (projects > 1 million or State or Federal funding)

60% Submittal

1. Draft final water design report
2. Draft final drainage design report
3. Draft final geotechnical report
4. Draft final hydrological / geophysical report
5. Preliminary structural design report
6. Final pavement recommendations
7. Preliminary pavement mix design
8. Final plan & profile for all required facilities – road, water, storm sewer
9. Final Intersection horizontal layout (including curb return and curb ramp info.)
10. Draft final wall locations – Plan & Profile
11. Catch points
12. Draft final drainage layout including pipe profiles
13. Updated utility locations/relocations
14. R/W purchase plans, contact summary – including property owners for water, sanitary,
15. Roadway typical sections
16. Preliminary detail sheets
17. Draft construction notes
18. Erosion control plan sheets
19. Cross Section sheets
20. Draft Specifications, Special Provisions, including landscape requirements and slope stabilization
21. Total Estimated Quantities and Engineer's Estimate
22. Variance modification requests (as required)

90% Submittal

1. Final water design report
2. Final drainage design report
3. Final geotechnical report
4. Final hydrological / geophysical report
5. Final structural design report
6. Final pavement recommendations
7. Final pavement mix design
8. Final plan & profile for all required facilities – road, water, storm sewer
9. Final Intersection horizontal layout (including curb return and curb ramp info.)
10. Final wall locations – Plan & Profile
11. Catch points
12. Final drainage layout including pipe profiles
13. Final utility locations/relocations
14. Roadway typical sections
15. Final detail sheets
16. Final construction notes
17. Final Erosion control plan sheets
18. Final Cross Section sheets
19. Final Specifications and Special Provisions
20. Total Estimated Quantities and Engineer's Estimate
21. Submit plans to all agencies required for permitting

Final P.S. & E

1. Final Civil plans (Mylar & Digital)
2. Submittal of all final Technical reports
3. Final Technical Specifications and Special Provisions
4. Final Total Estimates Quantities and Engineer's Estimate
5. Approved permits (DEQ, COE, ATC etc.)

Definitions

Conceptual: General design idea or plan based upon experience and judgment from other comparable work. Cursory plan view illustrations; calculations not required.

Preliminary: Introductory, but reasonably accurate, design element or feature. General consistency with design standards. Plan view illustration. Rough calculations and notes. First run models.

Final: Complete and ultimate design element or feature. Full consistency with design standards (or road modifications). Complete plan, profile and section views, as applicable. Thorough and complete engineering calculations and notes. Finished run models.

Alternative analysis: Study of all (at least two) viable options which satisfies a given transportation plan or design need. Analysis to include, but not limited to, comparisons of: safety, scope, cost, functionality, efficiency, compliance to standards and environmental effects.