

December 13, 2021

File: 2042584400

Attention: Sharon Gilman
Associate County Administrator
Cochise County Procurement Department
1415 Melody Lane, Building C
Bisbee, AZ 85603

Luis Pedroza
Management Services Director/City Treasurer
City of Douglas
425 10th Street
Douglas, AZ 85607

Dear Sharon and Luis,

Reference: 30% Design Engineering Documents – Douglas, Arizona Port of Entry - Scope of Services

Stantec Consulting Services Inc. (Stantec) is pleased to submit this scope of services and fee to prepare the 30% engineering design documents for the water, wastewater and broadband conduit utilities that serve the proposed Douglas Port of Entry and tributary lands. The proposed commercial Douglas Port of Entry (POE) site is located at James Ranch Road and the USA/Mexico International Boundary. The actual 80-acre POE site is not part of this proposal only the services to the site.

The scope of work is generally identified in the Phase 1 recommendations to Cochise County and the City of Douglas in the Stantec report entitled 'Proposed Douglas Port of Entry Water and Wastewater Feasibility Report' dated December 11, 2020. The project goal is to build on the December 11, 2020, report and work in close consultation with Cochise County, City of Douglas, State (ADOT, ADEQ, ADWR), Federal (GSA), Federal and State funding agencies and private sector utility providers (APS, Broadband Communication, Southwest Gas) to develop the 30% design.

The following scope of services summarizes our understanding of the requirements for this project as per Phase 1 of the December 11, 2020, report and the meeting held on February 5, 2020, at Cochise County's offices in Bisbee, Arizona with representatives of Cochise County and the City of Douglas. The scope of work is summarized as follows:

- Confirm with the City of Douglas regarding water and wastewater infrastructure, its capability and capacity limitations and the Cochise County with the land use and utility needs to support the POE.
- Work with the State (ADOT, ADEQ, ADWR), Federal Governments (GSA), Federal and State funding agencies and private sector utility providers (APS, Broadband Communication, Southwest Gas) on the capacity needs, location and permitting of the infrastructure
- Locate the water, wastewater and broadband conduit
- Provide a Phase 1 Basis of Design Report supporting the 30% design drawings and 30% Table of Content of the Technical Specifications.
- Develop a 30% design drawing documents to support the infrastructure service as follows:
 - Plan and profile drawings of the water distribution system and wastewater collection system along SR 80 and a schematic design along James Ranch Road showing service locations and hydrants servicing the POE in ACAD
 - The new High Zone Groundwater and High Zone Elevated Storage Tank in the vicinity of SR 80 and James Ranch Road site development including mechanical, electrical and instrumentation and controls

Reference: 30% Design Engineering Documents – Douglas, Arizona Port of Entry - Scope of Services

- The Wastewater West Pump Station and the Wastewater East Pump Station mechanical, electrical and instrumentation and controls and connection to the City wastewater collection system
- Location of the conduit for the fiber optic system between the west City boundaries and the POE
- Provide 30% Table of Content of the Technical Specification in the 26 Division Format coupled with County/City General Conditions and Supplementary Conditions.
- Provide a Phase 1 Opinion of Probable Construction Cost at an AAEE Class 3 Level.
- Provide a Phase 1 project design delivery schedule.

See attached Exhibit A for the Professional Services Agreement for Scope of Work, Exhibit B for the Fee Proposal. And Exhibit C for the Preliminary Project Delivery Schedule.

Please review and call if you have any questions or concerns.

Regards,

Stantec Consulting Services Inc.



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EXHIBIT A

Professional Services Agreement Scope of Work

COCHISE COUNTY & CITY OF DOUGLAS

PHASE 1 - 30% DESIGN OF WATER, SEWER, & BROADBAND CONDUIT

DOUGLAS COMERCIAL PORT OF ENTRY

REVISED SCOPE OF WORK

1. Introduction. This is a Proposal for Engineering Services to develop a 30% design of the water supply, wastewater conveyance and treatment and fiber optic communication system to support the proposed new Douglas AZ Port of Entry (POE) between the USA and Mexico. The project concept was developed in the Stantec December 11, 2020, report for the Cochise County and the City of Douglas entitled 'Proposed Douglas Port of Entry Water and Wastewater Feasibility Report' (the 2020 Report).

While the noted report developed a long-term conceptual plan to support the POE and over 7500 acres of currently undeveloped planning area in support of the POE, this proposal is limited to engineering services for the recommended Phase 1 of the conceptual plan generally is as follows:

Water System Phase 1. The Phase 1 water supply to the POE includes the new West High Zone groundwater well, the new elevated High Zone West storage tank, and a water main with fire hydrants and connections as was generally defined in the Report Figure 3-4 and identified on the accompanying Figure 1 along James Ranch Road between the POE and SR 80 and along SR 80 between the elevated storage tank and the intersection of James Ranch Road and SR 80.

ADOT Phase 1 Scope of Work James Ranch Road. ADOT has allocated funding for James Ranch Road between the POE and SR 80 for design concept report and environmental study. The Phase 1 water, sewer and broadband conduit design will be developed by ADOT. To assist ADOT we will develop a water distribution plan schematic design approach only. The design will be by ADOT.

The estimated length of water main pipe is 20,000 feet. James Ranch Road, to be designed by ADOT, will be the principal multi lane access to the POE from SR 80. The accompanying Figure 4 is an illustration of the level of detail.

Table 1- Phase 1 Summary Water System Design Features

Design Element	Description
Pipe HZ1	Estimated length 5890 ft of 12 in diameter - James Ranch Road- By ADOT
Pipe HZ2	Estimated length 5350 ft of 16 in diameter - SR 80
Pipe HZ 6	Estimated length 3165 ft of 16 in diameter - James Ranch Road By ADOT
Pipe HZ 7	Estimated length 5230 ft of 12 in diameter - US Border Patrol Frontage Road
West High Zone Ground Water Well	Approximately 1000 gpm. Location to be determined.
West High Zone Elevated Storage Tank	550,000 gallons. Location to be determined.

Note: Design Element Identifiers are from 'the Report'



The pipeline to the POE will provide the opportunity for serving a service area to be defined by Cochise County (the County) along James Ranch Road and the SR 80 in the immediate vicinity of James Ranch Road. The Phase 1 does not include water supply to Cochise College or the Border Patrol Complex on West Puzzi Ranch Road. The new production well target is approximately 1000 gpm while the elevated storage tank storage volume is 550,000 gallons. The storage volume, however, will depend on the fire flow rate/duration requirement for the POE. The water

supply infrastructure includes power supply to the groundwater well, connection to the City of Douglas (the City) SCADA system and water service connections to serve County identified service area lands adjacent to the pipeline.

Wastewater System Phase 1. Wastewater collection and treatment includes a wastewater collection system along SR 80 alignment (not the Mexico/USA border alignment evaluated in the Report) as generally defined on the Report Figure 3-9 and is identified on the accompanying Figure 2 along James Ranch Road between the POE and SR 80, along SR 80 from Cochise College to a point of connection to the City collection system for treatment at the City Wastewater Treatment Plant. The estimated length of pipe is 36,500 feet.

ADOT Phase 1 Scope of Work James Ranch Road. ADOT has allocated funding for James Ranch Road between the POE and SR 80 for design concept report and environmental study. The Phase 1 water, sewer and broadband conduit design will be developed by ADOT. To assist ADOT we will develop a wastewater collection plan schematic design approach only. The design will be by ADOT.

The wastewater collection system will provide the opportunity for serving a service area to be defined by the County along James Ranch Road and SR 80. The Phase 1 does not include serving the US Border Patrol complex. James Ranch Road to be designed by ADOT will be the principal multi lane access to the POE from SR 80.

The wastewater collection system includes two wastewater lift stations; (about 75 and 400 gpm at ultimate build out). The wastewater collection infrastructure includes power supply to the lift stations, connection to the City SCADA system and sewer connections to serve County identified lands adjacent to the collection system.

Table 2 Phase 1 Summary Wastewater System Design Features

Design Element	Description
WMH1 and WMH2	Estimated length 5600 ft of 6 in diameter force main - James Ranch Road- By ADOT
WMH5 and WMH2	Estimated length 1220 ft of 8 in diameter - James Ranch Road – By ADOT
WMH5 and WMH8	Estimated length 1990 ft of 10 in diameter - James Ranch Road by ADOT
WMH8A and WMH8	Estimated length 5860 ft of 8 in diameter - SR 80
WMH8 and WMH7	Estimated length 10800 ft of 8 in diameter - SR 80
WMH 7 and WMH 6	Estimated length 6680 ft of 12 in diameter - SR 80
WMH6 and Pump Station	Estimated length 1230 ft of 15 in diameter - SR 80
Pump Station to City Point of Connection	Estimated length 3100 ft of 24 in diameter - SR 80
Wastewater West Pump Station	In vicinity of the POE. Location to be determined.
Wastewater East Pump Station	In vicinity of Whitewater Draw. Location to be determined.

Note: Design Element Identifiers are from ‘the Report’



Broadband Conduit Phase 1. The Broadband conduit only will be located in parallel with the water and wastewater infrastructure. The fiberoptic cable and connections are not part of this 30% design. Figure 3 illustrates the broadband conduit scope of work.

For purposes of this scope of work it is noted that:

1. The water supply design criteria (domestic demand and fire flow and duration) to the serve the POE we will use the assumed design criteria in our December 2020 Report .
2. Permission will have to be granted by ADOT to locate infrastructure in SR 80 ROW. This will require early engagement with ADOT to identify ADOT direction on locating water, wastewater and broadband conduit buried infrastructure.
3. A site for the West High Zone elevated storage tank and West High Zone groundwater well will need to be established, will likely be on private land and permission will need to be granted to enter the property for purpose of providing Engineering Services. Stantec will, however, develop a general site development plan specific to this project that will assist the County in the process securing the needed site and will develop the plan further if site details are available.
4. The sites for the two wastewater lift stations, West Wastewater Pump Station and East Wastewater Pump Station, will need to be established and will likely be on private land. Permission will need to be granted to enter the properties for purposes of providing Engineering services. Stantec will, however, develop a general site development plan specific to this project that will assist the County in the process securing the needed sites and will develop the plan further if site details are available.

1. DESIGN STANDARDS

The following standards will be applicable to this project:

- Arizona Administrative Code, Title 18, Chapter 9
- Cochise County Subdivision Regulations, 2019 Edition
- Cochise County Road Design and Construction Standards and Specifications for Public Improvements
- Cochise County Comprehensive Plan, 2015
- Federal GSA Standards as applicable for the Port of Entry

2. PROJECT ADMINISTRATION

The following information is a general description of the engineering services required for this project to prepare and deliver a 30% design. The services listed may include, but are not limited to, the following:

Task 201: General Project Administration

Task 201.1: Project Management and Meetings

Project Manager will conduct project meetings to discuss the progress, direction, and technical aspects of the project. Project documentation will consist of preparing and distributing meeting agendas and minutes, and monthly reports. Meeting minutes will summarize key discussions, comments, decisions, and any action items required. The monthly project reports will summarize the monthly work progress, project issues, and project schedule status.

Meetings included in this scope of work includes:

1. The Kickoff meeting in Bisbee AZ with Cochise County/City of Douglas with two (2) Stantec Project Leaders and with Stantec Task Design Leaders (Pipeline, Electrical, I&C, Groundwater Hydrologist) on TEAMS. Included will be an area representative of APS, ADOT and GSA at the invitation of the County
2. Two meetings on site with County, City, ADOT, APS and GSA to agree on water and wastewater



infrastructure locations.

3. Two milestone meetings with Cochise County/City of Douglas to review:
 - a. The Draft 30% Basis of Design Report with two (2) Stantec Project Leaders and with Stantec Task Leaders virtually
 - b. The Draft 30% Design at Douglas AZ with two (2) Stantec Project Leaders and with Stantec Task Leaders virtually
4. Eight Monthly TEAMS Meetings August 2021 to February 2022 (8 months from Cochise County, City of Douglas /Stantec Contract date) to update progress and coordinate the development of the Data Acquisition, Basis of Design Report and the 30% Design.
5. Teams or conference calls will used between the noted milestone and monthly meetings will be utilized for most meetings to communicate effectively and minimize travel costs
6. Public meetings are not included in the scope of this project but may be added under General Allowances based of scoping meeting.

Deliverables

- Meeting Agendas
- Meeting Minutes
- Graphics, figures, plans, notes, and details necessary for meeting discussion

Task 201.2: Project Coordination

- Coordinate with Cochise County and City of Douglas Engineering and Public Works staff to ensure the goals are met and share progress and findings
- Coordinate with GSA to determine Port of Entry requirements related to fire, water, sewer, fiber, and driveway width/alignment. It is assumed that the GSA coordination will be coordinated through the County.
- Coordinate with ADOT to determine water, wastewater, broadband utility locations and right of way and permitting conditions. It is assumed that the ADOT coordination of the existing SR 80 ROW will be with the responsible ADOT representative in Cochise County and or the future James Ranch Road and intersection of James Ranch Road and SR 80 will be coordinated through the County.

Assumptions

- This process will require approximately eight months of coordination
- Cochise County representatives will be responsive and provide feedback

Task 201.3: Project Schedule and Tracking

The project engineer shall develop and maintain a comprehensive project schedule reflecting investigation of existing facilities, engineering analysis, potential routes, and costs. The engineer will include anticipated meetings in the project schedule. The schedule shall be developed in a work breakdown structure format identifying key project tasks and deliverable milestones. The schedule shall be prepared utilizing Microsoft Project and shall be updated and provided to the County monthly to be reviewed at progress meetings.

Assumptions

- Cochise County will review and approve project schedule

Deliverables

- Initial Project schedule (Microsoft Project and Adobe PDF formats)
- Monthly updates to Project schedule (Microsoft Project and Adobe PDF formats)

Task 201.4: Quality Assurance / Quality Control

The engineer will be responsible for providing Quality Assurance/Quality Control (QA/QC) of all engineering designs, analyses and deliverables prepared for the project. Engineer shall utilize our established format



that has been used on other projects. Information regarding procedure and copies of documentation is available to the Cochise County upon request. As part of the QA/QC plan Stantec will:

- Confirm appropriate standard operating procedures and standards of care are used
- Check analyses, calculations, underlying data, methodologies, and models
- Coordinate multi-disciplinary and subconsultant reviews
- Sign, stamp, or seal final deliverables

Quality checks and reviews will be documented to the project file as a required part of the project's QA/QC plan. The QA of subcontractor produced documentation involves ensuring that the work produced by the subcontractor meets the industry standard for care, as well as the satisfies the project scope of work and is coordinated with Stantec's work.

CAD Standards

The County and the City do not have CAD Standards. The drawings developments will be based on Stantec ACAD Standards.

Task 202: Data Acquisition

Task 202.1: Data Acquisition

Engineer will request, obtain, and review available relevant background information from the project provided by Cochise County and the City of Douglas, ADOT including, but not limited to:

- Cochise County will provide in CAD electronic format for purposes of developing plan and profile 30 % design drawings:
 - Identify any changes to the water and wastewater service area boundaries and zoning categories from the 2020 Report that will affect estimated design flows.
 - LIDAR/drone topography and images of Douglas, AZ, SR 80 between the City west boundary and the west boundary of Cochise College, James Ranch Road between SR 80 and the Mexico /USA international boundary. It is understood that a recent project to update the LIDAR mapping at two (2) foot contours with elevation points will be complete late September 2021.
 - Frontage road between SR 80 and James Ranch Road with access to US Border Patrol complex along West Puzzi Ranch Road.
 - Parcel data along the proposed alignments locating the land parcel legal property boundaries will be incorporated into the LIDAR topography
 - It is anticipated that the assistance of the County's drone capabilities to fly, record photographically at scale and download with referenced legal boundaries to CAD software and transfer to Stantec will be needed to complement the County's LIDAR mapping.
 - Stantec has access to the County LIDAR and parcel data that was used in the County's 2020 Report. If the project commences before the new LIDAR data is available, and to avoid delays to the project, Stantec will use these data bases.
 - Cochise County CAD standards and water and wastewater design standards
 - Cochise County will provide an e file with the County's Contracting General Conditions and Supplementary Conditions and other legal vehicles that the County uses in project bidding and may be used in bidding this project.
 - Cochise County will provide documents from funding agencies to the Phase 1 Douglas POE Water and Wastewater Infrastructure that detail any contract bidding condition requirements specific to funding.
- City of Douglas
 - Water as-builts including reservoir Top Water Levels of the City's Tanks. This will be to align the pressure zone development at POE service area with the City's pressure zone characteristics.
 - Sewer as-builts focused on the connection of the Phase 1 wastewater collection system to the City Collection system
 - Location of the pipe serving the 'Old hospital' and the pipe from BDIA only as they relate to



- the proposed sanitary sewer system identified in the 30% design.
- Stormwater management design standards and facilities as-builts
- City CAD standards and City water and wastewater design standards
- Master water and wastewater SCADA system characteristics
- The City will provide an e file with the City's Contracting General Conditions and Supplementary Conditions and other legal vehicles that the City uses in project bidding and may be used in bidding this project.
- The City will provide documents from funding agencies to the Phase 1 Douglas POE Water and Wastewater Infrastructure that detail any contract bidding condition requirements specific to funding.
- Existing Water and Wastewater SCADA systems and capability to receive and integrate SCADA from installations proposed in Phase 1
- ADOT- Work within ADOT ROW's.
 - ADOT design standards for locating utilities in the ADOT ROWs specific to this 30% design.
 - As Builts of improvements in SR 80 ROW between West boundary of Cochise College and the west boundary of the City of Douglas including culverts under the highway.
 - Data gaps that may exist will be identified and options for filling those gaps will be provided.
 - Whitewater bridge structural capacity to handle a sanitary sewer line between the west and east side of White-Water Draw.
- APS- Power Supply to High Zone Well and Storage Tank, West Wastewater Pump Station and East Wastewater Pump Station
 - APS primary power and service connection details to serve the West High Groundwater Well and Storage Tank and the Wastewater West and Wastewater East pump stations
- Broadband
 - Valley Telecommunication/Cox Communication- Characteristics of existing broadband system in the greater Douglas area.
 - As built and existing connection location for broadband conduit to serve the POE
 - Plans for expansion of the system in the area between the west boundary of the city and Cochise College and to the Douglas POE
- ADWR- Locate High Zone Well
 - Initiate 30% well design with a comprehensive data review of existing hydrogeologic information for the area near the POE to situate the well.
 - Data review will include existing well records on file with Arizona Department of Water Resources (ADWR), published maps and reports for the Douglas Basin and area surrounding the POE, and well reports, water quality, and other data available from the City of Douglas or Cochise County.
 - The data will be compiled and evaluated for establishing 30% design criteria (e.g., well location, depth of aquifer, potential water quality conditions, and spacing / setback requirements).
 - Southwest Gas- Characteristics of the natural gas distribution system in the greater Douglas area

Assumptions

- Stantec shall be entitled to reasonably rely upon the information and data provided or obtained from generally acceptable sources within the industry without independent verification except to the extent such verification is expressly included herein.

Task 203: Deliverables

The deliverables will include meeting notes for up to two (2) remote Data Acquisition meetings with each of ADOT, ADWR, APS, City of Douglas and Cochise County



Task 203: 30% Phase 1 Engineering Basis of Design Report

Stantec will prepare a Basis of Design Report (BODR) to document technical and engineering decisions, which will be used as the basis for development of the 30% detailed design documents. It is anticipated that this document will not reiterate work previously performed in the Stantec December 11, 2021, report for the Cochise County and the City of Douglas entitled 'Proposed Douglas Port of Entry Water and Wastewater Feasibility Report' (the Report). The intent is in a concise and complete way, summarize updates to design criteria and intent since the completion of the feasibility report.

The BODR will present a text and table summary of technical memoranda, plan and profile of the water distribution and wastewater collection systems, general site plan for a well and storage tank site and two wastewater pump stations, process schematics and flow diagrams, design criteria for each process, hydraulic profile, preliminary P&ID's, process unit layout drawings, architectural concepts, utilities and electrical single-line diagrams. Copies of pertinent meeting minutes will be contained in an appendix.

The Report will cover the Phase 1 water system design criteria, the Phase 1 wastewater design criteria, broadband conduit criteria as well as Phase 1 permitting and right of way needs and CAD standards. The Report will also include project delivery schedule and identify outstanding design criteria decisions to allow development of the 60% design package. The following is an outline summary of the BODR and design criteria to be identified.

1. .
2. Phase 1 Water Supply Design Criteria:
 - a. County/City Water Delivery Service Area definition and design needs:
 - i.
 - ii. Water service area land development boundary and water demands if different than 2021 report
 - iii. Fire flows, duration, pressure and storage volume for anticipated service area development
 - iv. Water service area pipe material, service connection locations and design and standard details including the end of the James Ranch Road pipeline for water quality maintenance and the service connection to the POE
 - b. Water Pipeline Plan and Profile. The pipe diameter and location in the ADOT ROW SR 80 only. The water main plan and profile details in the future James Ranch Road ROW will be the responsibility of ADOT and is not part of this SOW.
 - c. Groundwater Supply Well and Elevated Storage Tank Development Plan (Civil, Mechanical, Structural, Electrical and I&C)
 - i. Potential Sites
 - ii. Well Site Plan
 1. Well development approach (location, depth, diameter, water quality, well development in project sequencing schedule)
 2. Materials (casing, screen, gravel)
 3. Drilling methods and borehole testing
 4. Targeted production rate (potential range)
 5. Well completion and testing
 6. Mechanical equipment (phasing pumping rate/motor selection, column pipe, discharge piping, valves, meters, etc.)
 7. Locations
 - iii. APS Primary Power
 - iv. Process Control Narrative
 - v. Instrumentation and Controls
 - d. SCADA Integration Plan Security
 - e. Elevated Water Storage Tank
 - i. Volume
 - ii. Top Water Level Elevation
 - iii. Tank location and Site Plan
 - iv. Elevated tank availability
 - v. Structural requirements



Task 204: 30% Phase 1, Corridor Planning SR 80/James Ranch Road

Stantec will work with ADOT to locate the water, wastewater and broadband conduit within the ADOT SR 80 ROW. Stantec will also work with the County to locate the High Zone Well and Storage Tank and the West Wastewater Pump Station and the East Wastewater Pump Station and access points to the ADOT ROW and APS Primary Power.

Task 204.2 Water Centerline SR 80. The water distribution piping network connecting the West High Zone storage tank to the James Ranch Road water main will be located in ADOT SR 80 ROW. These will require permits from ADOT to be located in the ADOT ROW. In consultation with ADOT, the pipe centerlines will be developed as will ADOT permit requirements.

Task 204.3 Wastewater Collection Centerline/Broadband Conduit Centerline SR 80. The wastewater collection system between the southeast corner of Cochise College and SR 80 and the connection to the City of Douglas wastewater collection will be along SR 80. In close consultation with ADOT a preliminary centerline for the wastewater collection pipes and broadband conduit will be located.

- It is likely that the wastewater centerline location will be the north side of SR 80 where it will serve area lands on the north side by gravity.
- To avoid constructing future service connections across the SR 80, the lands on the south side of SR 80 drain to the south and will be provided with service with a pipeline along West Puzzi Ranch Road (the Border Patrol complex). The latter is not included in this SOW

Task 204.4 West High Zone Groundwater Well/Elevated Storage Tank, Wastewater West and East Pump Stations Location Development. The preliminary locations of the West High Zone elevated storage tank, the West High Zone groundwater well, the Wastewater West Pump station and the Wastewater East Pump Station will be identified. The exact locations will depend on the number of factors including the GSA requirements at the POE, the High Zone Groundwater well location, land ownership and location of the wastewater pump stations in the wastewater gravity system.

- The road access and utility connections from the ADOT ROW to these sites will be identified.

Task 204.5 Preliminary APS Power Connection. The preliminary primary power locations to the West High Zone groundwater well and Storage Tank and two wastewater pump stations and SCADA connection to the City Master Water and Wastewater SCADA systems will be developed.

- In consultation with the APS, the options for power connections will be determined
- In consultation with the City the approach to connecting these stores to the City Water and Wastewater master SCADA systems will be developed.

Deliverables

The deliverable will include a memo entitled 30% Phase 1, Corridor Planning SR 80 West Puzzi Ranch Road. The memo will be part of the Basis of Design Report to guide the development of the 30% design as identified in the following sections.

Task 205: 30% Phase 1 Water System Design

Task 205.1: 30% Waterline Pipe Plan and Profiles

1. This task will be development of plan and profile drawings for the waterline in ACAD format. The basis of these drawings will be the County LIDAR mapping supplemented when needed with County drone scaled topography all merged with the County legal property lines.
 - a. The water, wastewater and broadband plan and profile along SR 80 south east corner of Cochise College to the point of connection to the City wastewater collection system. will be developed at a scale of 1 in. = 100 feet or about 2000 ft per sheet.
 - b. Water Distribution Plan. The water distribution plan will include water pipe diameter,



alignment described using bearings, coordinates, dimensions from section lines, property lines and/or easement boundaries to all new water pipes, horizontal ties from existing street monuments to the proposed water system, show and label all new service connections and locate by stationing or dimensioning to the nearest property corner location, new fire hydrant numbers, horizontal locations of all existing and proposed structures, all new utilities, including water and drainage improvements, dimension separation between sewer and water, existing contours and all areas of pavement replacement according to ADOT.

- c. Water Distribution Profile. The water distribution will contain the following information: new water pipe diameters, new water pipe material, new water true pipe length, new water pipe slope, new fire hydrant numbers, all existing utilities including sizes, location of all new water and drainage improvements, dimension separation between sewer and water, finished and existing profile grade along water alignment.
- d. Standard water system design details such as service connections with flow meters, pipe trench and pipe anchor systems will be prepared. Ancillary water distribution system elements such as watermain water quality testing and flushing apparatus will be developed.

Task 205.2: 30% West High Zone Groundwater Well and Water Storage Facility

It is assumed that the West High Zone Groundwater Well and Water Storage Facility will be located on one site outside the ADOT ROW and on private property. A site generally located in the vicinity of the intersection of SR 80 and James Ranch Road will be identified during the 30% design. Stantec will develop a 30% design master plan to include:

- a. Civil/Mechanical/Site:
 - i. A conceptual site plan layout and cross sections with all surface infrastructure and elements anticipated for groundwater well with an elevated storage tank including mechanical equipment and piping, electrical pad and cabinets, retention basin, elevated storage tank footprint, site security and water treatment by chlorination only.
 - ii. The conceptual site plan will also include anticipated site dimensions, fencing / enclosures, and site access (e.g., gates, access driveway, etc.). If a site is selected, the elements of design will include site grading, stormwater management, APS power supply and driveway access. If a site selection is not possible during this project the noted elements will be generic in nature.
 - iii. The well section will include a section view with conceptual well depth, screened interval, downhole equipment, and wellhead completion details. All 30% well design elements will be conceptual only, to be modified as necessary during subsequent design (e.g., 60%), such as well and equipment specifications and precise well site.
- b. Instrumentation and Control: Stantec will deliver Process and Instrumentation Diagrams (P&ID's) to 30% completion that will show major pieces of equipment, pipelines, valves, and instruments. The I/O points will be identified by the city.
 - i. The deliverables will include, equipment and area tagging convention, Control philosophy description, control system block diagram, including integration with SCADA System, P&IDs with pipe and valve sizes and materials, onsite communication system requirements, define or recommend control system procurement methods and software development and document client's control system philosophy/architecture and other information needs
 - ii. The engineering intent of the processes and their control schemes will be clearly displayed for the continuation of design beyond 30%.
 - iii. Standard instrument and security panel drawings will be delivered that show



critical hardware specified by the Owner, namely processors, switches, and radio modems.

- iv. A security network diagram will also be delivered with development to 30%. A typical but comprehensive system will be shown that includes camera stations, motions sensors, badge readers, and interconnection types. The delivered network diagram will be customizable and modular beyond the 30% milestone.
- c. Electrical: Stantec will deliver Electrical Diagrams to 30 % completion that will show:
 - i. Preliminary electrical engineering and design services that includes the design of the power distribution, grounding and lighting system for West High Zone ground water well pumping system and for the West High Zone water storage tank.
 - ii. The deliverables will include an electrical load list, electrical/communications/security design concepts, preliminary electrical single-lines, electrical equipment location plan, document the need for onsite standby and/or emergency power; determine size, define modes of generator operating, interconnection requirements and load shedding, preliminary site plans showing major equipment locations for the well pumping system and water storage system and duct bank route, preliminary electrical equipment, I&C and special system panel locations
 - iii. Preparation of Electrical Standard Details

Task 205.3: 30% SCADA Connection to City System

The City has an existing master/central water SCADA system connecting all the City wells and other system features to a City control operation. It is understood that the present system will need to be upgraded. The features of the upgraded system are not known at this time.

The water storage facility and well system will have a PLC panel and security panel. These panels will be integrated with the City's SCADA system via line-of-sight (LOS) radios. It is assumed that a radio tower will provide a direct pathway to existing City radios at the central SCADA facility, and no new intermediate RF equipment will need to be designed. Stantec will issue a 30% network diagram showing the new PLC and security panels only if an existing network diagram is provided by the Owner before design begins. As-built, design, or redesign of the City's central SCADA system is not included in this proposal.

Task 206: 30% Phase 1, Wastewater Collection System Design

Task 206.1: 30% Sanitary Sewer Plan and Profile

This task will be development of plan and profile drawings for the wastewater collection system in ACAD format. The basis of these drawings will be the County LIDAR mapping supplemented when needed with County drone scaled topography all merged with the County legal property lines.

- f. The water, wastewater and broadband plan and profile along SR 80 south east corner of Cochise College to the point of connection to the City wastewater collection system. will be developed at a scale of 1 in. = 100 feet or about 2000 ft per sheet.
- g. The tentative location of the Wastewater West Pump Station at the POE and the tentative location of the Wastewater East Pump Station will be identified. Tentative location of the connection to the City's wastewater collection system. This task will not include analysis of the existing City's wastewater collection system hydraulic capacity between the connection point and the wastewater treatment plant.
- h. Wastewater Collection Plan. The wastewater collection plans will include sewer directional flow arrows, sewer alignment described using bearings, coordinates, dimensions from section lines, property lines and/or easement boundaries to all new sewers, horizontal ties from existing street monuments to the proposed sewer system, show and label all new service laterals and locate by stationing or dimensioning to the nearest property corner location, new manhole numbers, horizontal locations of all



existing and proposed structures, all new utilities, including water and drainage improvements, dimension separation between sewer and water, existing contours , drainage flow arrows , all areas of pavement replacement according to ADOT.

- i. Wastewater Collection Profile views shall contain the following information: new sewer pipe diameters ,new sewer pipe material, new sewer true pipe length, new sewer true pipe slope, new manhole numbers, new manhole rim elevations, new and existing manhole inverts, invert direction if there is more than one invert per manhole, all existing utilities including sizes, location of all new water and drainage improvements, dimension separation between sewer and water , finished and existing profile grade along sewer alignment.

Task 206.2: 30% West and East Wastewater Pump Station Design

It is assumed that the West Wastewater Pump Station and the East Wastewater Pump Station will be located on individual sites outside the ADOT ROW and on private property. A site for the West Wastewater Pump Station is generally in the vicinity of proposed POE north property boundary and the East Wastewater Pump Station is along the SR 80 corridor in the general vicinity of the White-Water Draw.

It is assumed that in general the design of both pump stations will be the same at the 30% design. Stantec will develop one 30% design master plan that encompasses both wastewater pump stations to include:

- a. Civil/Mechanical:
 - i. A site plan layout and cross sections with all surface infrastructure and elements anticipated for a wastewater pump station including mechanical equipment, flow metering and piping, electrical pad and cabinets, overflow retention basin and site security.
 - ii. Site plan will include land area to accommodate submersible pumping with recognition of phasing to accommodate the low initial waste water flow rate to ultimate wastewater flow rate at full build of the tributary sewerage area, wet well volume, foul air control, SCADA, primary power connection, MCC, security including perimeter walls and vehicle access, site civil development and buried infrastructure, operation and maintenance areas, auxiliary power source, emergency overflow and setbacks from future neighbors.
 - iii. The site plan will also include anticipated site dimensions, fencing / enclosures, and site access (e.g., gates, access driveway, etc.). If a site is selected, the elements of design will include site grading, stormwater management, APS power supply and driveway access. If a site selection is not possible during this project the noted elements will be generic in nature.
 - iv. The deliverable will include the infrastructure to the wet well to the offsite collection system and submersible pumps to the offsite force main.
- b. Instrumentation and Control: Stantec will deliver Process and Instrumentation Diagrams (P&ID's) to 30% completion that will show major pieces of equipment, pipelines, valves, and instruments. The I/O points will be identified by the City.
 - v. The deliverables will include, equipment and area tagging convention, Control philosophy description, control system block diagram, including integration with SCADA System, P&IDs with pipe and valve sizes and materials, onsite communication system requirements, define or recommend control system procurement methods and software development and document client's control system philosophy/architecture and other information needs
 - vi. The engineering intent of the processes and their control schemes will be clearly displayed for the continuation of design beyond 30%.
 - vii. Standard RTU and security panel drawings will be delivered that show critical



hardware specified by the Owner, namely processors, switches, and radio modems.

- viii. A security network diagram for each site will also be delivered with development to 30%. A typical but comprehensive system will be shown that includes camera stations, motions sensors, badge readers, and interconnection types. The delivered network diagrams will be customizable to each site beyond the 30% milestone.
- c. Electrical: Stantec will deliver Electrical Diagrams to 30% completion that will show:
 - ix. Preliminary electrical engineering and design services that includes the design of the power distribution, grounding and lighting system for West Wastewater Pump Station and the East Wastewater Pump Station.
 - x. The deliverables will include an electrical load list, electrical/communications/security design concepts, preliminary electrical single-lines, electrical equipment location plan, document the need for onsite standby and/or emergency power; determine size, define modes of generator operating, interconnection requirements and load shedding, preliminary site plans showing major equipment locations for the well umping system and water storage system and duct bank route, preliminary electrical equipment, I&C and special system panel locations
 - xi. Preparation of Electrical Standard Details.

Task 206.3: 30% SCADA Connection to City System: The City does not have an existing master/central wastewater collection SCADA system. The City has a master SCADA system in the City's wastewater treatment plant. The features of the upgraded system are not known at this time.

Both the West and East Wastewater Pump Stations will have a PLC panel and security panel. These panels could be integrated with the City's wastewater treatment plant SCADA system via line-of-sight (LOS) radios. It is assumed that a radio tower will provide a direct pathway to existing City radios at the wastewater treatment facility, and no new intermediate RF equipment will need to be designed. Stantec will issue a 30% network diagram showing the new PLC and security panels only if an existing network diagram is provided by the Owner before design begins. As-built, design, or redesign of the City's wastewater treatment plant SCADA system is not included in this proposal.

Task 207: 30% Phase 1 Fiber Conduit Design

The fiber optic conduit system design will be along the SR 80 to the City of Douglaswest City boundary. The location will be illustrated on the wastewater plan and profile drawings. It will generally consist of:

- A minimum of four (4) 4" PVC Rigid Nonmetallic Conduit (Schedule 80) conduit, and a series of handhole or vaults for connection from the closest Telecommunication Service Provider infrastructure and routed to the Cochise College site Point of Presence, and the future Port of Entry site Point of Presence. Conduit shall run no further than 600' without the installation of a handhole or vault for cable pulling, splicing or termination.
- Conduit shall meet NEMA standard TC-2. Underground conduit should be installed such that a slope exists at all points of the run to allow drainage and prevent the accumulation of water. Where conduit is routed underneath roadway or surface parking structures, they shall be concrete encased.
- Hand holes or vaults shall be concrete, steel or cast-iron units provided with a removable lid that permits internal access to the housed components. They will accommodate cable, splice closures, racking systems, and electronic equipment (e.g., environmental monitoring equipment, pumps) and shall be installed on a gravel base of sufficient depth to allow for drainage and stability. Where maintenance holes are installed in roadways, the lid (cover) shall support heavy vehicular traffic



The fiber optic cable systems will not be part of this scope of work.

Task 208: 30% Phase 1 Technical Specifications

For the 30% design, Stantec will prepare a list only of CSI Division 26 specifications that will be needed for the water system, wastewater collection system and broadband system and will include the General Conditions and Supplementary Conditions supplied by the County/City.

The deliverable will not include the actual technical specifications. Stantec will not undertake any edits to the General Conditions and Supplementary Conditions supplied by the County and the City.

Task 209: 30% Phase 1 Probable Construction Cost and Schedule

For the 30% design, Stantec will prepare a probable construction cost estimate. The costing is at a Class 3 Estimate of the Association for the Advancement of Cost Estimating (AACE) recommended practice. Class 3 estimates are generally prepared based on project development of 10% to 40% of the final design with drawings including plan and profile, preliminary electrical and I&C and site layout drawings. Typically, the level of expected accuracy range is -10% to -20% on the low side and +10% to +30% on the high side. For the 30% design the probable construction cost will be -10% to + 20% range. This builds on the cost estimate for Phase 1 provided in the 2021 Report. This will not include the cost of Phase 1 utilities along James Ranch Road that are the responsibility of ADOT.

Task 210: Sections 205 to 208 Section Project Deliverables

The deliverables package will include a 30% design set of drawings including plan and profile of the water distribution and wastewater collection system, the High Zone Well and Storage Tank site, the East Wastewater Pump station and the West Wastewater Pump Station as described in the above sections excluding James Ranch Road that will be done by ADOT. To assist ADOT we will prepare a James Ranch Road water distribution schematic drawing and a wastewater collection schematic drawing. The 30% deliverable package will be:

- Five (5) bound D Size Drawing sets and PDF file
- Five (5) bound Half Size Drawing sets and PDF file
- Five (5) bound List of Technical Specifications, the General Conditions and Supplementary Conditions supplied by the City and the County, and all project funding sponsors contractual requirements and a PDF file.

Drawings will be 30% design and will not be used for permitting purposes.

A summary of the estimated '30% Design of Douglas POE Water and Wastewater Infrastructure' Drawings follows in Table 1.

Table 1 Summary of 30% Design of Douglas POE Water and Wastewater Infrastructure.

Water Distribution System Plan and Profile (Assumed that wastewater plan and profile will be included on the same sheets for water main and broadband conduit along James Ranch Road only)		
1	G-1	Cover Sheet
2	G-2	Legend and Notes Sheet
3	G-3	Legend and Notes Sheet
4	G-4	Legend and Notes Sheet
	C-1	James Ranch Road Preliminary Road and utility cross section- Will be by ADOT
	C-2	James Ranch Road preliminary finished road profile- Will be by ADOT
	C-3	James Ranch Road preliminary finished road profile- Will be by ADOT
5	C-4	Water pipeline termination details
6	C-5	Water pipeline termination details

	C-6	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-7	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-8	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-9	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-10	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-11	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-12	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-13	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-14	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-15	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-16	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
	C-17	Plan and Profile James Ranch Road POE to SR80—Include wastewater gravity and force main pipes and broadband conduit on this sheet. Will be by ADOT
7	C-18	Plan and Profile SR 80 James Ranch Road to High Zone Groundwater/Storage
8	C-19	Plan and Profile SR 80 James Ranch Road to High Zone Groundwater/Storage
9	C-20	Water Standard and Special Details
10	C-21	Water Standard and Special Details
11		Schematic of the Water Distribution Infrastructure along the James Ranch For ADOT



Wastewater System Plan and Profile (Assumed that wastewater gravity pipe and force main plan and profile will be included on the same sheets for water main and broadband conduit along James Ranch Road only)		
12	G-1	Cover Sheet
13	G-2	Legend and Notes Sheet
14	G-3	Legend and Notes Sheet
15	G-4	Legend and Notes Sheet
16	C-22	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
17	C-23	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
18	C-24	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
19	C-25	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
20	C-26	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
21	C-27	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
22	C-28	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
23	C-29	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
24	C-30	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
25	C-31	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
26	C-32	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
27	C-33	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
28	C-34	Plan and Profile SR 80 James Ranch Road to East Wastewater Pump Station
29	C-35	Plan and Profile SR 80 Force main East Wastewater Pump Station to City Connection
30	C-36	Plan and Profile SR 80 Force main East Wastewater Pump Station to City Connection
31	C-37	Plan and Profile SR 80 Force main East Wastewater Pump Station to City Connection
32	C-38	Wastewater Standard and Special Details
33	C-39	Wastewater Standard and Special Details
34	C-40	Wastewater Standard and Special Details
35		Wastewater Infrastructure Along James Ranch Road for ADOT

WHZ Storage Tank and Groundwater Well (Assume the groundwater well and elevated storage tank are on same site at 30% design)		
36	G-1	Cover/General Sheets



37	G-2	General/Notes Sheets
38	C-1	Civil
39	C-2	Civil
40	C-3	Civil
	S-1	Structural Not Included at 30%
	S-2	Structural Not Included at 30%
	S-3	Structural Not Included at 30%
	S-4	Structural Not Included at 30%
	S-5	Structural Not Included at 30%
41	M-1	Mechanical
42	M-2	Mechanical
43	M-3	Mechanical
44	E-1	Electrical
45	E-2	Electrical
46	E-3	Electrical
47	E-4	Electrical
48	E-5	Electrical
49	I-1	Symbols and Nomenclature -1
50	I-2	Symbols and Nomenclature -2
51	I-3	Symbols and Nomenclature -3
52	I-4	Symbols and Nomenclature -4
53	I-5	Symbols and Nomenclature -5
54	I-6	Sample Wiring Diagram
55	I-7	Installation Details -1
56	I-8	Installation Details -2
57	I-9	Installation Details -3
58	I-10	Installation Details -4
59	I-11	Installation Details -5
60	I-12	Installation Details -6
61	I-13	Installation Details -7
906 2	I-14	Installation Details -8
63	I-15	Well Security System Network and Details
64	I-16	Security Panel Layout
65	I-17	Control Network and Antenna Details
66	I-18	RTU Panel Layout
67	I-19	RTU BOM
68	I-20	RTU Panel Power Distribution
69	I-21	Well Pump and Storage Tank P&ID
70	I-22	Storage Facility Backup Generator and Switchgear P&ID

East Wastewater Pump Station/West Wastewater Pump Station (Assume One Design for both Sites at 30%)		
71	G-1	Cover/General Sheets
72	G-2	General/Notes Sheets
73	C-1	Civil
74	C-2	Civil
75	C-3	Civil
	S-1	Structural Not Included at 30%
	S-2	Structural Not Included at 30%
	S-3	Structural Not Included at 30%
76	M-1	Mechanical
77	M-2	Mechanical
78	M-3	Mechanical
79	E-1	Electrical
80	E-2	Electrical
81	E-3	Electrical
82	E-4	Electrical
83	E-5	Electrical
84	I-1	Symbols and Nomenclature -1
85	I-2	Symbols and Nomenclature -2
86	I-3	Symbols and Nomenclature -3
87	I-4	Symbols and Nomenclature -4
88	I-5	Symbols and Nomenclature -5
89	I-6	Sample Wiring Diagram
90	I-7	Installation Details -1
91	I-8	Installation Details -2
92	I-9	Installation Details -3
93	I-10	Installation Details -4
94	I-11	Installation Details -5
95	I-12	Installation Details -6
96	I-13	Installation Details -7
97	I-14	Installation Details -8
98	I-15	East Lift Station Security System Network and Details
99	I-16	Security Panel Layout
100	I-17	Control Network and Antenna Details
101	I-18	RTU Panel Layout
102	I-19	RTU BOM
103	I-20	RTU Panel Power Distribution
104	I-21	East Lift Station P&ID
105	I-22	East Lift Station Backup Generator and Switchgear P&ID



Task 300: Reimbursable Expenses Allowance

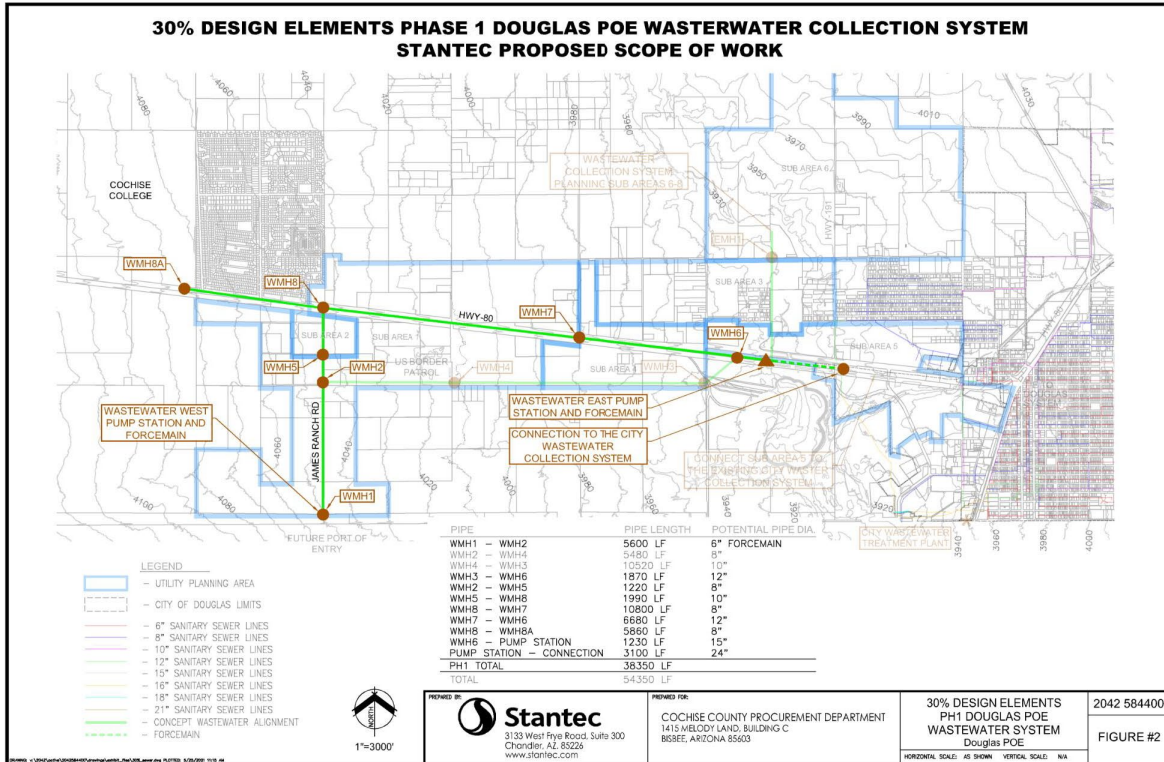
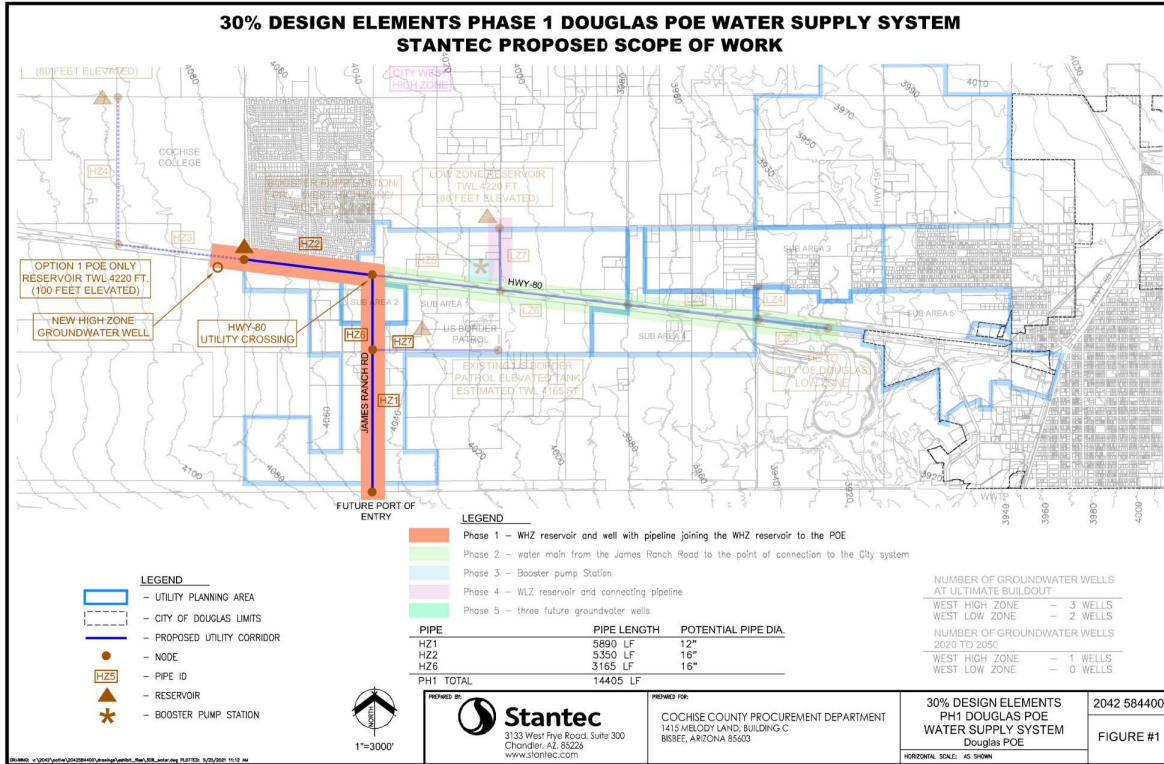
Cochise County shall reimburse Engineer for direct costs identified in this scope of work. Reimbursable expenses will be paid by Engineer and reimbursed at-cost by the County. The following tasks are anticipated to require reimbursable expenses:

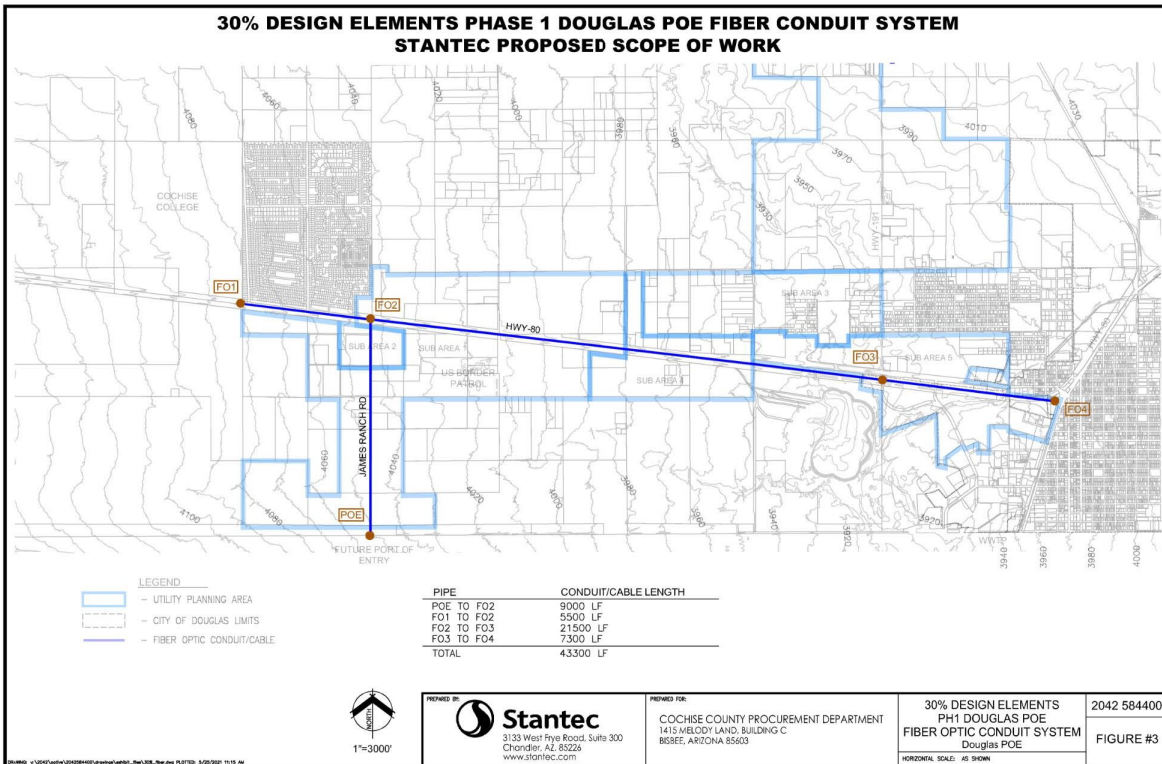
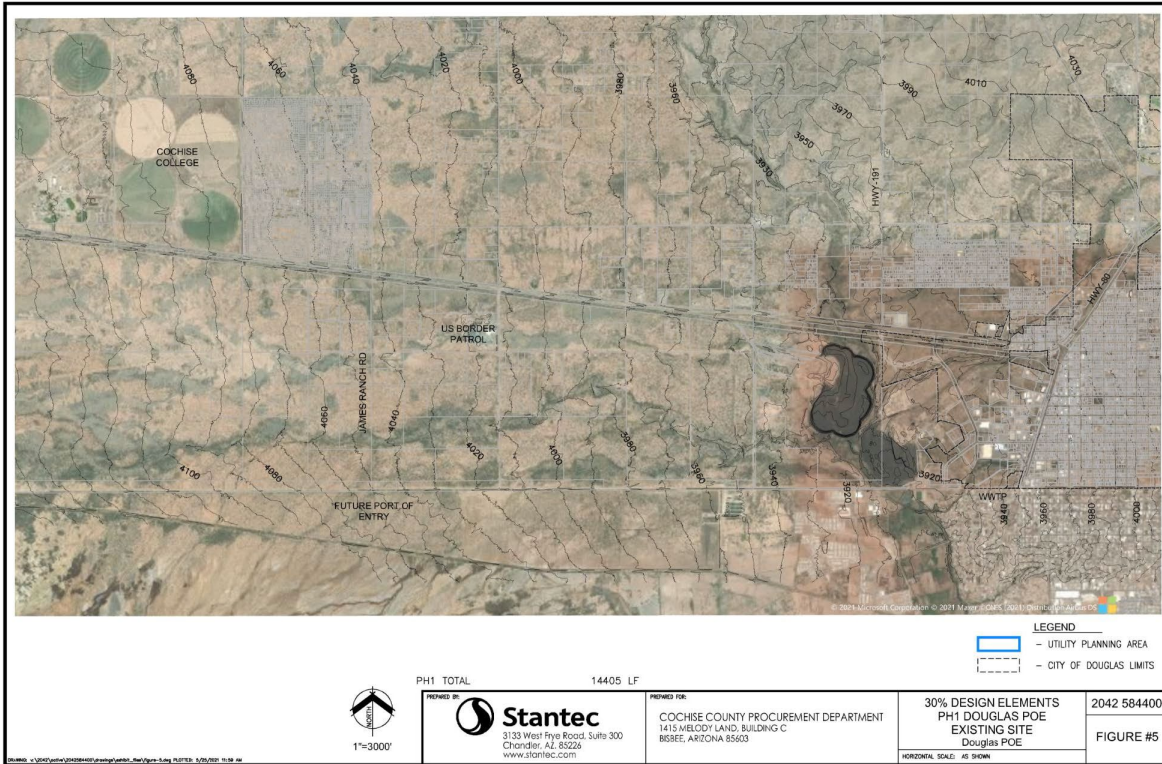
Task 300.1: Printing, Plotting and Graphics Reproduction

Cochise County shall reimburse Engineer for direct costs associated with printing, plotting and graphics reproduction. Printing, plotting and graphics costs shall include production of submittals and internal printing costs.

Task 300.2: Travel

Cochise County shall reimburse Engineer for direct costs associated with travel, including mileage, parking, and meals, should a meeting time require the staff to be away from the office through lunch.





3. ADDITIONAL TASKS (NOT INCLUDED IN THIS SCOPE OF WORK)

The following funding related tasks are not included in the SOW but may be added by Cochise County, City of Douglas, ADOT or funded through NADB.

Task 501: Geotechnical Investigation West Wastewater Pump Station, East Wastewater Pump Station and West High Zone Well and Elevated Storage Tank

The sites for the West Wastewater Pump Station, the East Wastewater Pump Station and the West High Zone Well and Elevated Storage Tank have not been selected. Until the sites are selected and secured it is recommended that at the 30% design of the sites, a geotechnical investigation to provide recommendations for construction of the proposed wastewater pump stations and the groundwater well and elevated storage tank not be undertaken. This task is not part of this Scope of Work.

Task 502: Geotechnical Investigation Water Distribution System/Wastewater Collection System

The centerline locations for the water distribution system and wastewater collection system are to be established in the 30% design. Until the centerlines are selected and secured, is it recommended that at the 30% design, a geotechnical investigation along the centerline of the water and wastewater pipes not be undertaken This task is not part of this Scope of Work.

Task 503: Groundwater Geohydrology Modeling

Support location of well at James Ranch Road and State Route 80. Does not include modeling of the Douglas Basin.

Task 504: NEPA

Environmental Process for acquisition of right of way.

Task 505: Traffic Impact Study

Traffic study for intersection configuration and James Ranch Road design.

Task 506: Public Consultation

Assistance with County public outreach and landowner consultation is not part of this Scope of Work.

Exhibit B - Fee Proposal for Addendum to Existing Contract

PHASE 1 - 30% DESIGN OF WATER, SEWER, & BROADBAND CONDUIT

TASK NO.	Position Title	Principal	Project Manager	Sr Project Eng Design	Junior Engineer/ Buried Pipe Design	Senior Eng/Senior QA/QC Electrical	Electrical Designer II	Water Infrastructure Engineer		Senior Eng/ QA/QC I & CI Engineer	I&C Design Engineer	I&C Design Engineer II	Project Administrative Asst.	Part of Entry Consultant	Transportation Engineer	CAD	Travel	General Allowance	Total	TOTAL COST
								10	15											
	TASK DESCRIPTION	\$220.00	\$220.00	\$220.00	\$188.00	\$220.00	\$179.00	\$164.00	\$220.00	\$198.00	\$179.00	\$179.00	\$251.00	\$208.00	\$179.00				Hours	
201	General Project Administration																			
201.1	Project Onsite/TEAM Meetings: 1 Kick Off, 2 ADOT/GSA etc. 2 BDR Milestone: Monthly TEAM (8)	60	60																120	\$26,400
201.2	Project Coordination- City, County, GSA, ADOT, assume 8 mo.	24	24	12		12				12									84	\$18,216
201.3	Project Schedule and Tracking	2	4					32					8						46	\$8,000
201.4	Quality Assurance / Quality Control	30	10	10		16			16										82	\$18,040
Subtotal	Subtotal Hours	116	98	22	0	28	0	32	16	12	0	8	0	0	0	0	0	0	352	
	Subtotal Cost	\$25,520	\$21,560	\$4,840	\$0	\$6,160	\$0	\$5,248	\$3,520	\$2,376	\$0	\$1,432	\$0	\$0	\$0	\$0	\$0	\$0		\$73,048
202	Data Acquisition																			
202.1	Data Acquisition	10	8	4	8			6											36	\$7,568
202.2	Hydro Geo (Mining)	2		12				5											19	\$3,900
202.3	Elec Data Acquisition						8												8	\$1,560
202.4	I & C Data Acquisition									2									2	\$396
Subtotal	Subtotal Hours	12	8	16	8	0	8	11	0	2	0	0	0	0	0	0	0	0	65	
	Subtotal Cost	\$2,440	\$1,740	\$3,520	\$1,604	\$0	\$1,432	\$1,604	\$0	\$394	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$12,474
203	30% Engineering Pre-Design Basis of Design Report																			
203.1a	Transportation Group BDR																		0	\$0
203.2b	Electrical BDR					24	16												40	\$8,144
203.3c	I&C BDR									36		2							38	\$7,488
203.4d	Water BDR		16	80				32											128	\$26,368
203.5e	Community Development BDR	12			12														24	\$4,896
203.6f	Hydro Geo BDR	2		12				5											19	\$3,900
Subtotal	Subtotal Hours	14	16	92	12	24	16	37	0	36	0	2	0	0	0	0	0	0	249	
	Subtotal Cost	\$3,080	\$3,520	\$20,240	\$2,864	\$5,280	\$2,864	\$6,048	\$0	\$7,128	\$0	\$358	\$0	\$0	\$0	\$0	\$0	\$0		\$71,436
204	30% Phase 1, Corridor Planning																			
204.1	James Ranch Road ROW Acquisition Assistance																		0	\$0
204.2	Water Centerline SR 80		5	8				4											17	\$3,516
204.3	Wastewater Collection Centerline/Broadband Conduit Centerline SR 80.		5	8				4		6									23	\$4,704
204.4	West High Zone Groundwater Well/Elevated Storage Tank, Wastewater West and East Pump Stations Location		5	8	10			8											31	\$6,052
204.5	Elec Preliminary APS Power Connection.		1			8		2											11	\$2,308
Subtotal	Subtotal Hours	0	16	24	10	8	0	18	0	6	0	0	0	0	0	0	0	0	82	
	Subtotal Cost	\$0	\$3,520	\$5,280	\$1,880	\$1,760	\$0	\$2,952	\$0	\$1,188	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$22,858
205	30% Phase 1, Water Design																			
205.1	SR 80 30% Water Plan & Profile (CD), JRR Schematic, (services)			15	60														75	\$14,850
205.2a	30% West High Zone PS and Groundwater Well				25														25	\$5,500
205.2b	30% Site Plan, Mechanical, Civ II	24		65				35					42						146	\$32,838
205.2c	30% Electrical Design					37	58												95	\$18,922
205.2d	30% I&C Design									28		44							72	\$13,420
205.3	30% SCADA Connection to City System		3	3															6	\$1,320
Subtotal	Subtotal Hours	0	24	105	60	37	58	35	0	28	44	0	0	0	0	0	0	0	433	
	Subtotal Cost	\$ -	\$ 5,280	\$ 23,100	\$ 11,280	\$ 8,140	\$ 10,382	\$ 5,740	\$ -	\$ 5,544	\$ 7,874	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$101,796
206	30% Phase 1, Sewer Design																			
206.1	SR 80 30% Sanitary Sewer P&P (CD), JRR Schematic, (services)			20	80														100	\$19,440
206.2a	30% West and East Wastewater Pump Station Design (Water)		24	65				42											131	\$26,468
206.2b	30% Site Plan, Mechanical, Civ II																		0	\$0
206.2c	30% Electrical Design					56	88												144	\$28,072
206.2d	30% I&C Design									56	16								72	\$13,952
206.3	30% SCADA Connection to City System									8									8	\$1,584
Subtotal	Subtotal Hours	0	24	85	80	56	88	42	0	44	16	0	0	0	0	0	0	0	455	
	Subtotal Cost	\$ -	\$ 5,280	\$ 18,700	\$ 15,040	\$ 12,320	\$ 15,752	\$ 6,888	\$ -	\$ 12,672	\$ 2,864	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -		\$104,440
207	Fiber Optic Conduit Design																			
207.1	30% Electrical Design Specifications				24														24	\$4,312
Subtotal	Subtotal Hours	0	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
	Subtotal Cost	\$0	\$0	\$0	\$4512	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$4,344
208	30% Technical Specifications																			
208.01	Water Group		2	2				4											8	\$1,536
208.02	30% Electrical Design Specifications						2												2	\$440
208.03	30% I&C Design									4									4	\$792
Subtotal	Subtotal Hours	0	2	2	0	2	0	4	0	4	0	0	0	0	0	0	0	0	14	
	Subtotal Cost	\$0	\$440	\$440	\$0	\$440	\$0	\$656	\$0	\$792	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$2,444
209	30% Probable Construction Cost Estimate																			
209.1	Water Group		3	16				8											27	\$5,492
209.2	30% Electrical Design Specifications					24													24	\$5,280
209.3	30% I&C Design									24									24	\$4,752
Subtotal	Subtotal Hours	0	3	16	0	24	0	8	0	24	0	0	0	0	0	0	0	0	75	
	Subtotal Cost	\$0	\$660	\$3520	\$0	\$5280	\$0	\$1312	\$0	\$4752	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		\$14,940
300	Reimbursable Expenses Allowance																			
300.1	Printing, Plotting and Graphics Reproduction																			\$1,000.00
300.2	Travel, assume 4 trips																			\$4,000.00
Total Hours		142	191	362	194	179	170	187	16	176	60	10	0	0	0	42	0	0	2105	
Total Cost		\$31,240	\$42,020	\$79,640	\$36,472	\$39,380	\$30,430	\$30,668	\$3,520	\$34,848	\$10,740	\$1,790	\$0	\$0	\$0	\$7,518	\$4,000	\$1,000		\$353,246

Schedule for Douglas Water, Sewer, Conduit 30% Plans

Select a period to highlight at right. A legend describing the charting follows.

Period Highlight: 1

Plan Duration Actual Start % Complete Actual (beyond plan) % Complete (beyond plan)

