

**SCOPE OF PLANNED CONSULTING SERVICES AND COMPENSATION
City of Flagstaff Coconino Estates Phase II
Crescent and Navajo RR&SS Funding**

WLB Project No. 319012A002
COF Capital Improvements No. TBD
City of Flagstaff Project No.: TBD
July 29, 2019 Draft 1
September 25, 2019 Revision 1
October 23, 2019 Revision 2

PROJECT UNDERSTANDING:

The City of Flagstaff Coconino Estates Improvements Phase II (CEIP2) Project is located in the north end of the Coconino Estates Neighborhood within west Flagstaff. Utility and roadway improvements will be designed and constructed for two streets through the Roadway Repair and Street Safety (RR&SS) funding:

1. Crescent Drive: Meade Lane to Talkington Drive
2. Navajo Drive: Elizabeth Road to Talkington Drive

During review of the initial proposal the scope of services was revised to add additional areas to the project through different funding sources. A separate scope of services will be prepared for the services that are associated with different funding sources. Exhibit A shows the project locations and the different funding sources. The additional areas are:

3. Talkington and sides Streets: Talkington Drive from Meade to Crescent plus N and S Louise Way, Davis, Thelma, Hazel, and Elizabeth). See Exhibit B for the added scope of services to be funded through Water Services.

Project design and construction will incorporate numerous stakeholders and residents.

The following Exhibits are included with this scope of services:

- Exhibit A – Project Location Map and Funding Sources
- Exhibit B – Scope of Services Talkington, N and S Louise Way, Davis, Thelma, Hazel and Elizabeth
- Exhibit D – Speedie and Associates Fee Proposals
 - D1 – Crescent and Navajo dated July 23, 2019
 - D2 – Talkington, Talkington Side Streets dated October 23, 2019
- Exhibit E – JE Fuller Fee Proposal dated July 24, 2019
- Exhibit F– Cardno Fee Proposals
 - F1 – Crescent and Navajo dated September 24, 2019
 - F2 – Talkington and Side Streets dated October 23, 2019

Project Goal:

The Coconino Estates Improvements Phase II Project is primarily funded by City of Flagstaff Road Repair and Street Safety Program (RR&SS). The project goal is to effectively utilize allocated funds to maintain

existing improvements within the project area. Select new improvements will support this primary goal. New improvements will be separated from RR&SS improvements.

In general, these improvements consist of:

- Full depth pavement reconstruction
 - Design will recommend triple view profile elevations and typical cross-slope to match edge conditions, improve drainage, and maintain required cover over existing and proposed utilities.
 - Pavement improvements will include replacing affected signage, striping, monuments, and roadway markings.
- Replacement of select curb, gutter, sidewalk, sidewalk ramps, and driveways
- Water main replacements
- Water service and hydrant replacements
- Sanitary sewer main replacements
- Construct new sanitary sewer main
- Sanitary sewer service and manhole replacements
- Stormwater drainage issue resolution within roadway

WLB will provide effective coordination with the City of Flagstaff, stakeholders, and residents to incorporate information gathered from these entities so that the improvements may be implemented with minimal impact to the public and private property. This coordination, along with improving existing conditions within the project area on time and under budget, will define project success.

The goal for the project schedule is:

- **10.08.2019** – Final WLB Proposal Submittal to COF
- **11.19.2019** – City Council Meeting
- **11.2020** – Deliver Final Construction Documents
- **12.2020 / 03.2021** – Bid Phase
- **Spring 2021** – Construction Begins
- **Spring 2021 / Fall 2022** – Construction Duration

To achieve the project goals, WLB will be teamed with the following subconsultants:

- Speedie and Associates: Provide the geotechnical investigation and report for the pavement replacement.
- JE Fuller: Provide coordination for the environmental and 404 permit requirements for construction of the sewer main connection to the main in the Rio de Flag.
- Cardno: Provide Subsurface Utility Engineering (SUE) for the project area that will be added to the topographic survey.

N Crescent Drive:

Project limits extend from the north side of W Meade Lane, north to the north side of N Talkington Drive.

Roadway Scope:

- Full depth pavement reconstruction from the north side of W Meade Lane to the north side of N Talkington Drive.

- Existing roadway will be evaluated from BOC to BOC. Roadway width will be adjusted to meet current COF standards during the design phase.
- A typical cross slope will be determined during the design phase.
- Full depth reconstruction will require lowering of centerline profile while maintaining required coverage over utilities.
- Adjacent streets to transition to Crescent Drive's new structural section.
- All pavement to have a 20-year life expectancy.
- Traffic data will be provided by the City of Flagstaff.
- Replace all existing roll curb with new vertical curb and gutter.
- Replace select existing vertical curb and gutter with new vertical curb and gutter.
- Replace all driveway ramps. Driveway ramps and match ups will be designed to match the existing driveways.
- Evaluate existing sidewalk for ADA compliance. Replace select sections of existing sidewalk identified as a tripping hazard to be non-ADA compliant sidewalk.
- New sidewalk from N Meteor Drive to W Meade Lane to be determined during design.
 - New improvements will be separated from RR&SS improvements.
- Replace select existing sidewalk ramps as identified by the COF.
- Possible new valley gutter at the intersection of W Meade Lane and N Crescent Drive.
- Possible new vertical curb and gutter at the intersection of W Meade Lane and N Crescent Drive.
 - New improvements will be separated from RR&SS improvements.
- Remove and reinstall existing street signs as needed for construction.
 - Per the City of Flagstaff, all signage is or will be updated to meet new City of Flagstaff Standards by another project.
- Remove, re-establish, and document (including recordation) all affected survey monuments and handholes.
- The existing striping plan will be documented and reviewed during the design phase.
- Contractor to protect existing landscape improvements. Contractor will remove and replace in kind any disturbed landscape improvements needed for construction of improvements.
- Evaluate the right-of-way for the ability to determine impacts to residential landscape improvements and location of design centerline relative to existing roadway centerline.
- City of Flagstaff to determine during design if existing light poles will be replaced with new light poles and luminaries to meet City of Flagstaff Standards.
 - WLB does not need to track design time for the light poles separately.
 - Luminary standard to be provided by the City of Flagstaff Traffic Department.
 - New underground power will be provided to the new light poles. Design will be by others.

Utility Scope:

- Construct new water main and abandon the existing main in place when possible.
- Replace all existing water service saddles, service lines, and meter box assemblies from new main to meter.
 - Water meter locations will be provided by the City of Flagstaff.
 - Water meter elevations to be adjusted to meet COF standards as needed
- Replace all water valves.
- Replace all existing fire hydrant assemblies.

- Replace existing sewer main from Manhole 1-012 to Manhole 1-015 (W Venus Drive to N Meteor Drive) and Manhole 1-038 to Manhole 1-992 (N of Rio de Flag to N Talkington Drive)
- Construct 300' of new sewer main from Manhole 1-038 to the existing sewer main in the Rio de Flag between Manholes 1-007 to 1-008. Alignment to be determined during design to avoid environmental issues with the Rio de Flag.
 - New improvements will be separated from RR&SS improvements.
- Construct 3 new sewer manholes for the realignment of the sewer.
 - New improvements will be separated from RR&SS improvements.
- Abandon existing sewer line between residential parcels 10202054A (2120 N Crescent Drive), 10202029 (2130 N Crescent Drive), 10202038 (2307 N Lantern Lane), and 10202037 (2309 N Lantern Lane).
 - Determine service locations for parcels 10202037 (2309 N Lantern Lane) and 10202038 (2307 N Lantern Lane).
- Replace all existing sewer services from the replaced/new main to the ROW.
 - Existing sewer video logs will be provided by the City of Flagstaff, otherwise to be provided by Cardno.
- Replace all existing sewer manholes.
- Adjust existing water valves and sewer manholes as required for pavement reconstruction per City of Flagstaff Standards.
- All existing utility collars shall be removed and replaced to City of Flagstaff Standards.
- Asbestos abatement for ACP waterlines (if warranted).

Franchise Utility Scope:

- Evaluate existing franchise utilities locations and elevations. Coordinate relocations/realignments with the franchise utilities as needed (APS, Unisource, Suddenlink, CenturyLink, AT&T, etc.)

Stormwater Scope:

- Determine during the design phase if a new valley gutter is needed to convey drainage through the intersection of W Meade Lane and N Crescent Drive.
- Replace curb inlet catch basin at the southwest corner of N Crescent Drive and W Venus Drive with a combination curb inlet catch basin.
 - Determine if catch basin locations need to be adjusted or upsized during design.
- Curb inlet near the Rio de Flag will be addressed during design.
- Drainage Memo.

N Navajo Drive

Project limits extend from the intersection with W Elizabeth Drive to the intersection with N Talkington Drive.

Roadway Scope:

- Full depth pavement reconstruction from the east side of N Talkington Drive to the north side of W Elizabeth Drive.
 - Existing roadway will be evaluated from BOC to BOC. Roadway width will be adjusted to meet current COF standards during the design phase.
 - A typical cross slope will be determined during the design phase.

- Full depth reconstruction will require lowering of centerline profile while maintaining Required coverage over utilities.
- Adjacent streets to transition to Navajo Drive's new structural section.
- All pavement to have a 20-year life expectancy.
- Traffic data will be provided by the City of Flagstaff.
- Replace all existing roll curb with new vertical curb and gutter.
- Replace all driveway ramps. Driveway ramps and match ups will be designed to match the existing driveways.
- Remove and reinstall existing street signs as needed for construction.
 - Per the City of Flagstaff, all signage is or will be updated to meet new City of Flagstaff Standards by another project.
- Remove, re-establish, and document (including recordation) all affected survey monuments and handholes.
- Contractor to protect existing landscape improvements. Contractor will remove and replace in kind any disturbed landscape improvements needed for construction of improvements.
- Evaluate the right-of-way for the ability to determine impacts to residential landscape improvements and location of design centerline relative to existing roadway centerline.
- City of Flagstaff to determine during design if existing light poles will be replaced with new light poles and luminaries to meet City of Flagstaff Standards.
 - WLB does not need to track design time for the light poles separately.
 - Luminary standard to be provided by the City of Flagstaff Traffic Department.
 - New underground power will be provided to the new light poles. Design by others.

Utility Scope:

- Construct new water main and abandon existing water main in place to the greatest extent possible.
- Connection points for new water main will be determined during design.
- Replace all existing water service saddles, service lines, and meter box assemblies from replaced main to meter.
 - Water meter locations will be provided by the City of Flagstaff.
 - Water meter elevations to be adjusted to meet COF standards as needed.
- Replace all water valves.
- Replace all existing fire hydrant assemblies.
- Abandon existing 8" waterline that runs through the Rio de Flag from Azure Dr to Navajo Dr.
- Replace existing sewer main from Manhole 1-040 to Manhole 1-044 (N Talkington Drive to W Elizabeth Drive).
- Evaluate sewer main starter from Manhole 1-041 (from Lantern Lane).
- Replace all existing sewer services from the replaced main to the ROW.
 - Existing sewer video logs will be provided by the City of Flagstaff, otherwise to be provided by Cardno.
- Replace all existing sewer manholes.
- Adjust existing water valves and sewer manholes as required for pavement reconstruction per City of Flagstaff Standards.
- Adjust existing water valve box assemblies and sewer manholes, affected by construction, to finished grade.
- All existing utility collars shall be removed and replaced to City of Flagstaff Standards.

- Asbestos abatement for ACP waterlines (if warranted).

Franchise Utility Scope:

- Evaluate existing franchise utilities locations and elevations. Coordinate relocations/realignments with the franchise utilities as needed (APS, Unisource, Suddenlink, CenturyLink, AT&T, etc.)

SCOPE OF SERVICES:

BASIC SERVICES

Task 1 – Data Collection

The purpose of this task is to attain all pertinent information to create a comprehensive basemap for the project area. This will include topographic survey and subconsultant coordination. Subconsultants will provide subsurface utility locating, a geotechnical report, and environmental clearance.

Task 1A – Topographic Survey

Will be complete under the Pre-Engineering Services.

Task 1B – Sub-Consultant Coordination

Speedie & Associates

WLB will coordinate with Speedie & Associates to provide geotechnical engineering. Their scope of work is presented in Exhibit D. The purpose of the geotechnical investigation is to provide options for pavement design, suitability of soils for reuse, earthwork methods, trenching considerations, and potential corrosiveness of subsoil materials.

JE Fuller

WLB will coordinate with JE Fuller to determine delineation of the wetlands waters of the US to show the area of impact within the Ordinary High Water Mark of the Rio De Flag. Their scope of work is presented in Exhibit E.

Cardno

WLB will coordinate with Cardno to provide the subsurface utility investigation. Their scope of work is presented in Exhibit F. Cardno will determine and deliver all utility information including mains, services, pipe depths, alignment, material, and sizing. Their survey will include all surface appurtenances that include water valves, sewer manholes, water meters, sewer cleanouts, catch basin grates, and storm drain manhole lids. Records research and utility locating performed by Cardno will be completed prior to the 30% design phase. WLB will provide locations and an exhibit to show proposed pothole locations to Cardno. Potholing will be conducted by Cardno during the 60% design phase as utility alignments and tie-ins are being determined. Once completed, a set of sealed utility plans and an AutoCAD file will be delivered to WLB to be incorporated into the WLB topographic survey basemap.

During the subsurface utility investigation, WLB will facilitate meetings, as needed, with the City and Cardno to discuss the project basemap and discuss conflicting information in order to minimize impacts to future submittals. WLB will be responsible for preparing agendas and meeting notes for design meetings.

Deliverables: Geotechnical Report, All record research documents, Technical memorandum and map of delineation, Sealed utility plan, AutoCAD utility basemap for use in preparing the Coconino Estates Phase II Improvement Plans, Pothole report.

Task 1C – Updated Scoping Plan

WLB will evaluate and prepare an Updated Scoping Plan with the existing roadway widths, the ROW, and initial roadway line work. The information shown on the City’s scoping exhibits will be transferred to the AutoCAD files and overlaid onto the project basemap to prepare the Updated Scoping Plan. WLB will review the Plan with the City’s Project Manager and Staff to discuss the impacts block by block. We anticipate multiple meetings to review impacts, determine the preferred roadway widths, and determine edge improvements that will be shown on the 30% plans. This information will be included in an Updated Scoping Plan that will include the following:

1. Over Plan Sheet of the project area (1 Sheet)
2. Planview of each roadway with the following: (5 Sheets)
 - a. Typical cross-section existing and proposed
 - b. New layout for proposed cross-section
 - c. Proposed layout of water and sewer lines

Deliverables: PDF Submittal of the Updated Scoping Plan.

Task 2 – Concept 30% Plans

WLB will prepare 30% plans for improvements based on the Updated Scoping Plan prepared in Task 1. Prior to starting the 30% plans WLB will meet with the City of Flagstaff to discuss resolution of comments received for the Updated Scoping Plan. The 30% plans will contain the following sheets:

1. Cover/Notes/Detail Sheets (6 Sheets)
2. Control Sheet (1 Sheet) – the control sheet will show the existing control points, ROW, monuments, and property corners that were located during the topographic survey.
3. Water Service Index Sheet (1 Sheet) – Using the information from the City, Cardno and field review, WLB will prepare a sheet showing the existing water meters within the project limits and prepare a table to show location, size, physical address, APN, Keynote and sheet.
4. Sewer Service Index Sheet (1 Sheet) – Using the information from the City, Cardno and field review, WLB will prepare a sheet showing the existing sewer services within the project limits and prepare a table to show location, size, physical address, APN, and sheet.
5. Street Removals/Grading/Drainage Plan and Profiles (8 Sheets) – WLB will prepare plan and triple view profile sheets for the removal and design of new street improvements. At the 30% level only existing profiles will be shown. The design profiles will be added to the future plan submittals.
6. Utility Sheets (9 Sheets) – These sheets will show all the water, sewer, and water and sewer service replacements. Profile will only be added to the sheets that have waterline and sewer line replacements. The other sheets will have 2 plan views per sheet.

The plans will be at 20 scale to accurately show AC, curb, sidewalk replacements. The waterline and sewer line profiles will not be prepared with the 30% Plans.

During the design WLB will facilitate (3) bi-weekly design meetings, as needed, with the City’s Project Manager and Staff to discuss project design and receive input on items that will help with minimizing

impacts to residents located along the project limits. WLB will continue to prepare agendas and meeting notes for design meetings.

WLB will prepare a Design Concept Report. This report will present information from design meetings, field walks, and existing residential improvements to document the design progression and existing conditions within the project area. The purpose of the report is to document design decisions made in the preparation of the 30% plans and provide a resource to be used as a basis for future design phases and during construction to restore residential improvements along the project limits. The report will include stakeholder feedback, edge improvements, and any proposed variances from the City's engineering standards. We expect one set of revisions to the report.

WLB will prepare an overall project engineering cost estimate per the quantities determined during this phase. We will also provide costs and quantities for new improvements that are not included within the RR&SS funding.

Deliverables to the City of Flagstaff: The following will be submitted:

1. Design Meeting agendas and meeting notes
2. (2) Complete sets and PDF's of the Concept 30% plans for review by the City.
 - a. 10 day courtesy review
3. Concept Design Report (Draft & Final)
4. Engineering Cost Estimate (Overall & Site Specific)

Task 3 – Concept 60% Plans

WLB will prepare the 60% plans based on comments received from the 30% plan submittal. Prior to proceeding with the 60% plan preparation, WLB will meet with the City to discuss the 30% plan review comments, Engineer's Estimate, and potential VE options that should be analyzed during the 60% plan preparation.

The format of the plans sheets for the 60% plans will be the same as the 30% plans with the addition of the SWPPP Plan sheets (2 Sheets). For the 60% plan submittal the design profiles for roads, waterlines and sewer lines will be added.

The Preliminary Drainage Memo will be prepared with the 60% plan submittal. The memo will present calculations for replacing existing catch basins along Crescent Drive and the roadway capacity. The format for the drainage memo will be:

1. Introduction
2. Location
3. Description of Project Site
 - a. Existing
 - b. Proposed
4. Objectives and Procedures
5. Hydrology
 - a. Analysis Overview
 - b. Existing Conditions
 - i. 2, 10, and 100 year design storms

- c. Proposed Conditions
 - i. 2, 10, and 100 year design storms
- 6. Hydraulics
 - a. Overview
 - b. Existing Conditions
 - c. Proposed Conditions
- 7. Summary and Conclusions

WLB will prepare a project overall engineering cost estimate per the quantities determined during this phase. We will also provide costs and quantities for new improvements that are not included within the RR&SS funding.

During the design WLB will facilitate (3) bi-weekly design meetings, as needed, with the City's Project Manager and Staff to discuss project design and receive input on items that will help with minimizing impacts to the residents located along the project limits. WLB will continue to prepare agendas and meeting notes for design meetings.

This submittal will be unsealed and will be submitted to the City's Project Manager for distribution to the City departments for a 15-day courtesy review.

Deliverables to the City of Flagstaff: The following will be submitted:

1. Design Meeting agendas and meeting notes
2. (2) Complete sets of the 60% plans (Hard Copy and PDF).
3. (1) Hard copy and a PDF of the Preliminary Drainage Memo
4. Comment Response Form for 30% plan comments
5. Engineering Cost Estimate (Overall & Site Specific)

Task 4 – 90 % Plans

WLB will prepare the 90% plans based on comments received from the 60% plan submittal. Prior to proceeding with the 90% plan preparation WLB will meet with the City to discuss the 60% plan review comments, Engineer's Cost Estimate, and potential VE options that should be analyzed during the 90% plan preparation.

The format of the plan sheets for the 90% plans will be the same as the 60% plans.

WLB will revise the Preliminary Drainage Memo per comments received from the 60% review to prepare the Final Drainage Memo to be included with the 90% plan submittal supporting the drainage design shown on the 90% plans.

Draft Special Provisions will be prepared with the 90% submittal.

The 90% Plans will be submitted by WLB to the franchise utility companies (APS, Unisource, Century Link, AT&T and Suddenlink) for utility acknowledgement per the City requirements.

During the design WLB will facilitate (2) bi-weekly design meetings, as needed, with the City's PM and staff to discuss project design and receive input on items that will help with minimizing impacts to the

residents located along the project limits. WLB will continue to prepare agendas and meeting notes for design meetings.

Deliverables: The following will be submitted:

1. (2) Complete sets of the 90% plans hard and PDF will be submitted to the City's project manager for review and distribution to City departments.
 - a. COF 20 day review period
2. (1) Hard copies and PDF of the draft special provisions.
3. (1) Hard copies and a PDF of the Final Drainage Memo
4. (5) Sets of the 90% plans only will be submitted to the franchise utilities by WLB.
5. (1) Hard Copy and PDF of the Comment Responses.
6. Engineering Cost Estimate (Overall & Site Specific)

Task 4A – ADEQ Submittal

WLB will prepare an Engineers Design Report (EDR) for the water main to include with the ADEQ submittal. WLB will coordinate with the City of Flagstaff for completion of the Drinking Water Service Agreement as well as the Application to Construct Drinking Water Facilities. WLB will submit to ADEQ for simultaneous review as the City's plan review.

WLB will prepare the Engineers Design Report (EDR) for the sewer line to include with the Sewer ADEQ Notice of Intent to Discharge submittal. WLB will prepare flow calculations in each of the proposed sewer lines to verify the lines flow above minimum velocity requirements and are sized adequately for the area. We will coordinate with the City to obtain the data for the sewer collection system and sewer treatment facility forms, and for completion of the application. WLB will submit to ADEQ for simultaneous review as the City's plan review. Checks will be provided by the City for water and the sewer ADEQ application fees.

Deliverables: The following will be submitted including up to 1 set of revisions, if required:

1. (1) Hard copy and PDF of the Water Engineer's Design Report and Application for Approval to Construct Drinking Water Facilities and Sewer Engineer's Design Report and Application for Notice of Intent to Discharge for Sewage Collection Systems for submittal to ADEQ.
2. (4) Sets of the Final 1 plans will be submitted to ADEQ for approval to construct the new sewer line and construct the new waterline.

Task 5 – 100% Plans

WLB will prepare the 100% plans based on comments received from the 90% plan submittal. Prior to proceeding with the 100% plan preparation WLB will meet with the City to discuss the plan review comments, Engineer's Cost Estimate, and potential VE options. Once we have final approval by the City and ADEQ we will submit (2) mylar cover sheets and a digital plan set for City Signatures.

Prior to final City approval, WLB will revise the plans, Engineer's Design Reports, and/or the application per ADEQ comments and resubmit for Approval to Construct and Notice of Intent to Discharge, if required.

Deliverables to the City of Flagstaff: The following will be submitted:

1. (2) Complete sets of the 100% plans hard copy and a PDF will be submitted to the City's project manager for review and distribution to City departments.

- a. COF 15 day review period
2. (2) mylar cover sheets for signatures will be submitted.
3. (1) Hard copy and PDF of the project special provisions, Engineer's Estimate, and Bid Schedule.
4. (1) Comment Response Form the 90% plan comments.
5. (1) PDF of each of the Franchise Utility Acknowledgements.

Deliverables to ADEQ: If needed as shown above.

END BASIC SERVICES

POST-DESIGN SERVICES

Task 6 – Post-Design Services

Following approval of the plans, WLB will provide post-design services to support the City in successfully completing the construction of improvements.

Task 6A – Bidding Administration

Bidding phase services may include bidding questions and addendum (design changes or additions) preparation.

Task 6B – Construction Administration: Construction phase services may include participation in the pre-construction meeting, on-site representation to address unforeseen conditions and preparation of field orders (exhibits). WLB will provide an estimate of the time required prior to performing this task and will not incur charges under this phase unless authorized to do so by the City's Project Manager.

END CONSTRUCTION ADMINISTRATION

Project Assumptions:

1. Legal descriptions for additional right-of-way and easements are not included in basic services.
2. Sufficient monumentation exists in the immediate vicinity of the Site (within one adjacent Right of Way intersection) to facilitate the relation of the topography survey to the Right of Way/property boundaries.
3. Resolving boundary issues between record information and measured data is not included. If there are any issues we will notify the City to determine the best approach and strategy to resolve.
4. New monuments to replace the ones that are disturbed during construction will be the responsibility of the Contractor. WLB can provide surveying to replace monuments if requested as an additional service.
5. Horizontal and vertical datum will be based on the City of Flagstaff control network. If a different datum is requested, the client will provide the necessary control information.
6. No boundary survey will be conducted or implied. The horizontal control portion of the services does not include setting monuments at property corners or Right of Way centerline.
7. A title report is not needed for determining record right-of-way locations. If one is needed we will notify the City for approval.
8. No sealed Topography Survey plat will be prepared.
9. Providing or modifying the City of Flagstaff water model for the water line replacement is not included.

10. Potholing to locate existing utilities will be coordinated with Cardno during the preparation of the 60% Plans.
11. If the City has existing sewer logs, they will provide. Cardno is to provide TV logs and location of all existing sewer services.
12. WLB prepares the design and construction drawings with AutoCAD Civil 3D 2019. It is assumed that any other entity utilizing WLB design files for the purpose of coordination with this project has the capabilities of using and/or views the files in WLB's original format. Work on WLB's part to re-format or reconstruct files for another entity's use will be considered additional services.
13. ADEQ Submittal fees will be paid by the City of Flagstaff. WLB will coordinate with the City to obtain checks for the submittal.
14. Setting the post construction centerline monument replacements and preparing the corresponding Record of Survey will be the responsibility of the contractor.
15. Record Drawings/As-built preparation and/or review is not included and will be the responsibility of the Contractor during construction.
16. Preparation and/or review of the ADEQ Approval of Construction, Discharge Authorization, and Engineer's Certificate of Completion (ECC) documents is not included.
17. Additional services if required and approved by the client will be billed in accordance with the Fee Schedule for Professional Services for The WLB Group, Inc.

The City of Flagstaff will provide or be responsible for the following information:

1. Water meter sizes and addresses for the services being replaced with this project.
2. Information for additional right-of-way that has been dedicated to the City for corner cut-offs or as part of the development.
3. Providing as-built water and sewer line plans for the existing lines in the project limits.
4. Provide the design and specification requirements for the underground street light conduits.
5. Setting up the stakeholder meeting(s).
6. Pay ADEQ review and submittal fees.
7. Acquiring temporary construction easements or PUE's for the construction if needed and all coordination with the impacted party.
8. The City will complete the Engineer's Certificate of Completion (ECC) for water, including all sealed test results for the disinfection, and for the leak testing performed by the City Inspectors. The City of Flagstaff will provide the record drawings/as-builts for the water system, fill out the ADEQ application for Approval of Construction, and make the entire submittal to ADEQ for the Approval of Construction.
9. The City will complete the Request for Discharge Authorization for sewer and make the submittal to ADEQ for Discharge Authorization. This includes the application for Discharge Authorization, preparation of the Engineer's Certificate of Completion (ECC) including the sealed test results observed by the City Inspectors, and the record drawings/as-builts for the sewer system.

END SCOPE OF SERVICES

Compensation:

Our Time and Materials (T&M) Not to Exceed (NTE) budget for the Coconino Phase II Crescent & Navajo project is \$301,345 including sub-consultant fees and reimbursable expenses with a \$15,000 Contract Allowance (5%), for a Total Contract Amount of \$316,345. The budget is summarized in the table below:

Tasks (Design - T&M NTE)	Budget
Task 1 - Data Collection	\$16,480
Task 2 - 30% Design Plans	\$50,580
Task 3 - 60% Design Plans	\$58,095
Task 4 - 90% Design Plans and ADEQ Submittals	\$68,350
Task 5 - 100% Design Plans	\$20,180
Subtotal (Design - T&M NTE)	\$213,685
Tasks (Construction Administration - T&M NTE)	Budget
Task 6 - Post-Design Services	\$24,500
Subtotal (Construction Administration - T&M NTE Budget)	\$238,185
Speedie and Associates w/Markup (Geotechnical Analysis)	\$8,800
JE Fullerw/Markup (404 Jurisdictional Waters)	\$3,190
Cardno Subsurface Utilities	\$49,370
Reimbursable Expenses	\$1,800
Project Total	\$301,345
CONTRACT ALLOWANCE (5%)	\$15,000
TOTAL CONTRACT AMOUNT	\$316,345

End of Compensation

HOURLY RATE SCHEDULE

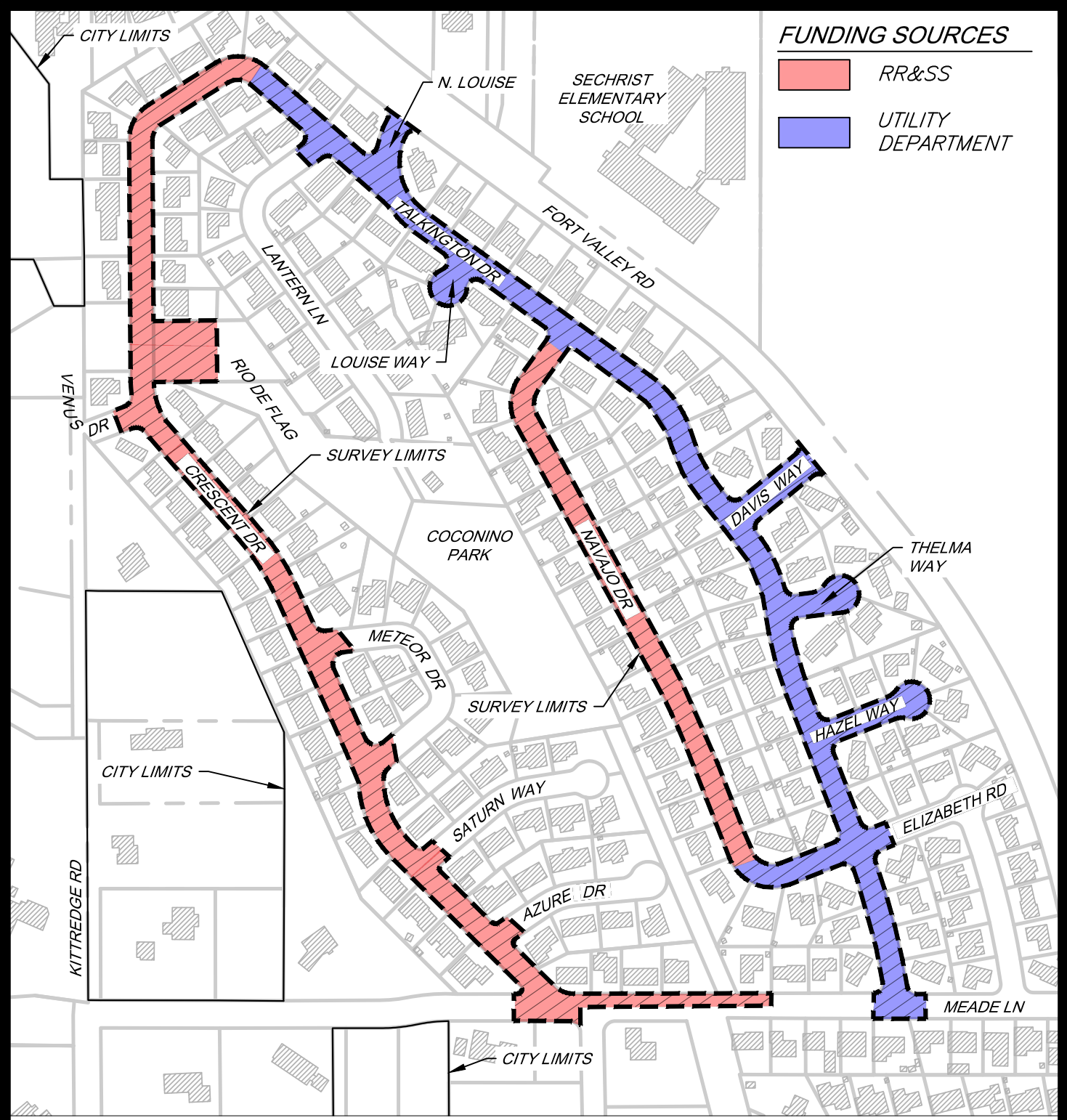
**FLAGSTAFF
FEE SCHEDULE FOR PROFESSIONAL SERVICES**

TYPICAL HOURLY RATES



Personnel	Hourly Rate
Principal	\$170.00
Public Presentation or Expert Testimony	\$250.00
Senior Project Manager.....	\$140.00
Project Manager	\$130.00
Senior Project: Engineer/Landscape Arch./Planner /Inspector /Surveyor/Designer	\$115.00
Project: Engineer/Landscape Arch./Planner /Inspector /Surveyor/Designer.....	\$110.00
Staff: Design Engineer/Landscape Arch./Planner /Inspector /Surveyor/Designer	\$105.00
Sr. Cadd Operator	\$95.00
Senior Technician	\$90.00
Design Technician	\$85.00
Technician/Cadd Operator	\$80.00
Draftsperson/Assistant Technician	\$75.00
Clerical	\$60.00
Three Man Survey Crew	\$180.00
Two Man Survey Crew	\$160.00
One Man Survey Crew.....	\$135.00

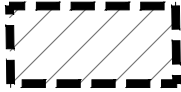
Hourly Rate Schedule

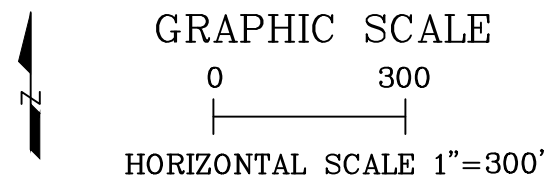
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FUNDING SOURCES

	RR&SS
	UTILITY DEPARTMENT

 APPROXIMATE LIMITS OF SURVEY +/- 10' OUTSIDE ROW



**COCONINO ESTATES
IMPROVEMENTS PHASE II
PROJECT LOCATION MAP & FUNDING SOURCES**

The WLB Group, Inc.
WLB
WLB No. 319012A001

10.21.2019

EXHIBIT B – SCOPE OF PLANNED CONSULTING SERVICES AND COMPENSATION
City of Flagstaff Coconino Estates Phase II
Talkington, Elizabeth, Hazel, Thelma, Davis, North and South Louise

WLB Project No. 319012A002
COF Capital Improvements No. TBD
City of Flagstaff Project No.: TBD
September 25, 2019 Draft 1
October 23, 2019 Revision 2

PROJECT UNDERSTANDING:

The City of Flagstaff Coconino Estates Improvements Phase II (CEIP2) Project is located in the north end of the Coconino Estates Neighborhood within west Flagstaff. The City of Flagstaff has requested that the following streets be added to the Utility and roadway improvements in CEIP2:

1. Talkington Drive: Crescent Drive to Meade Lane
 - a. Including the following side streets; N & S Louise Way, Davis Way, Thelma Way, and Hazel Way
2. Elizabeth Road: Navajo Drive to Talkington Drive

This scope of services references the exhibits in the base proposal for CEIP2 for Crescent and Navajo.

Project Goal:

The funding for the utility and roadway improvements on Talkington and Elizabeth is through the Water Services Department. The goal is to design and construct the improvements for Talkington and Elizabeth with the Coconino Estates Improvements Phase II Project that is primarily funded by City of Flagstaff Road Repair and Street Safety Program (RR&SS).

In general, these improvements consist with the scope of services described in the Crescent and Navajo scope.

To achieve the project goals, WLB will be teamed with the following subconsultants:

- Cardno: Provide Subsurface Utility Engineering (SUE) for the project area that will be added to the topographic survey.
- Speedie and Associates: Provide the geotechnical investigation and report for the pavement replacement.

W Talkington Drive

Project limits extend from Crescent Drive to Meade Lane. See Attachment A – Project Location Map

Roadway Scope:

- Full depth pavement reconstruction from Crescent Drive to Meade Lane.
 - Existing roadway will be evaluated from BOC to BOC. Roadway width will be adjusted to meet current COF standards during the design phase.
 - A typical cross slope will be determined during the design phase.
 - Full depth reconstruction will require lowering of centerline profile while maintaining minimum coverage over existing and proposed utilities.

- All pavement to have a 20-year life expectancy.
- Traffic data will be provided by the City of Flagstaff.
- Replace all existing roll curb with new vertical curb and gutter.
- Replace all driveway ramps. Driveway ramps and match ups will be designed to match the existing driveways.
- Remove and reinstall existing street signs as needed for construction.
 - Per the City of Flagstaff, all signage is or will be updated to meet new City of Flagstaff Standards by another project.
- Remove, re-establish, and document (including recordation) all affected survey monuments and handholes.
- Contractor to protect existing landscape improvements. Contractor will remove and replace in kind any disturbed landscape improvements needed for construction of improvements.
- Evaluate the right-of-way for the ability to determine impacts to residential landscape improvements and location of design centerline relative to existing roadway centerline.
- City of Flagstaff to determine during design if existing light poles will be replaced with new light poles and luminaries to meet City of Flagstaff Standards.
 - WLB does not need to track design time for the light poles separately.
 - Luminary standard to be provided by the City of Flagstaff Traffic Department.
 - New underground power will be provided to the new light poles. Design by others

Utility Scope:

- Construct new water main and abandon the existing main in place to the greatest extent possible from Crescent Drive to Davis Way.
 - The existing 8" waterline between Davis and Hazel to remain.
- Replace all existing water service saddles, service lines, and meter box assemblies from new main to meter.
 - Existing services to be swapped from the existing 2" waterline to the existing 8" waterline between Davis and Hazel
 - Water meter locations be provided by Cardno and water meter identification will be provided by the City of Flagstaff.
 - Water meter elevations to be adjusted to meet current COF standards as needed
- Replace all water valves.
- Replace all existing fire hydrant assemblies.
- Replace all existing sewer services from the replaced main to the ROW.
 - Existing sewer video logs will be provided by the City of Flagstaff, otherwise to be provided by Cardno.
- Replace existing sewer main and all manholes.
- Adjust existing water valves and sewer manholes as required for pavement reconstruction per City of Flagstaff Standards.
- All existing utility collars shall be removed and replaced to City of Flagstaff Standards.
- Asbestos abatement for ACP waterlines (if warranted).

Franchise Utility Scope:

- Evaluate existing franchise utilities locations and elevations. Coordinate relocations/realignments with the franchise utilities as needed (APS, Unisource, Suddenlink, CenturyLink, AT&T, etc.)

Talkington Side Streets

Project limits extend from Talkington Drive to end of cul-de-sac.

Roadway Scope:

- Full depth pavement reconstruction from Talkington Drive to end of cul-de-sac.
 - Existing roadway will be evaluated from BOC to BOC. Roadway width will be adjusted to meet current COF standards during the design phase.
 - A typical cross slope will be determined during the design phase.
 - Full depth reconstruction will require lowering of centerline profile while maintaining minimum coverage over existing and proposed utilities.
 - All pavement to have a 20-year life expectancy.
 - Traffic data will be provided by the City of Flagstaff.
 - Cul-de-sac will be constructed back in existing horizontal location.
- Replace all existing roll curb with new vertical curb and gutter.
- Replace all driveway ramps. Driveway ramps and match ups will be designed to match the existing driveways.
- Remove and reinstall existing street signs as needed for construction.
 - Per the City of Flagstaff, all signage is or will be updated to meet new City of Flagstaff Standards by another project.
- Remove, re-establish, and document (including recordation) all affected survey monuments and handholes.
- Contractor to protect existing landscape improvements. Contractor will remove and replace in kind any disturbed landscape improvements needed for construction of improvements.
- Evaluate the right-of-way for the ability to determine impacts to residential landscape improvements and location of design centerline relative to existing roadway centerline.
- City of Flagstaff to determine during design if existing light poles will be replaced with new light poles and luminaries to meet City of Flagstaff Standards.
 - WLB does not need to track design time for the light poles separately.
 - Luminary standard to be provided by the City of Flagstaff Traffic Department.
 - New underground power will be provided to the new light poles. Design by others

Utility Scope:

- Construct new sewer and water mains except for Davis Way. Abandon existing water and sewer mains to the greatest extent possible.
- Waterline connection within N Louise Way at existing water valve and not to extend into the ADOT Fort Valley ROW.
- Replace all existing sewer services from the replaced main to the ROW.
 - Existing sewer video logs will be provided by the City of Flagstaff, otherwise provided by Cardno.
- Replace existing sewer main and all manholes.
- Adjust existing sewer manholes as required for pavement reconstruction per City of Flagstaff Standards.
- All existing utility collars shall be removed and replaced to City of Flagstaff Standards.
- Asbestos abatement for ACP waterlines (if warranted).

Franchise Utility Scope:

- Evaluate existing franchise utilities locations and elevations. Coordinate relocations/realignments with the franchise utilities as needed (APS, Unisource, Suddenlink, CenturyLink, AT&T, etc.)

W Elizabeth Drive

Project limits extend from the east side N Navajo Drive to the east side of the intersection with N Talkington Drive.

Roadway Scope:

- In lieu of utilizing a trench cut to preserve existing asphalt, the City is requesting full depth pavement reconstruction from the east side of N Talkington Drive to the connection with N Navajo Drive.
 - Existing roadway will be evaluated from BOC to BOC. Roadway width will be adjusted to meet current COF standards during the design phase.
 - A typical cross slope will be determined during the design phase.
 - Full depth reconstruction will require lowering of centerline profile while maintaining minimum coverage over utilities.
 - Adjacent streets to transition to Elizabeth Drive's new structural section.
 - All pavement to have a 20-year life expectancy.
 - Traffic data will be provided by the City of Flagstaff.
- Replace all existing roll curb with new vertical curb and gutter.
- Replace all driveway ramps. Driveway ramps and match ups will be designed to match the existing driveways.
- Remove and reinstall existing street signs as needed for construction.
 - Per the City of Flagstaff, all signage is or will be updated to meet new City of Flagstaff Standards by another project.
- Remove, re-establish, and document (including recordation) all affected survey monuments and handholes.
- Contractor to protect existing landscape improvements. Contractor will remove and replace in kind any disturbed landscape improvements needed for construction of improvements.
- Evaluate the right-of-way for the ability to determine impacts to residential landscape improvements and location of design centerline relative to existing roadway centerline.
- City of Flagstaff to determine during design if existing light poles will be replaced with new light poles and luminaries to meet City of Flagstaff Standards.
 - WLB does not need to track design time for the light poles separately.
 - Luminary standard to be provided by the City of Flagstaff Traffic Department.
 - New underground power will be provided to the new light poles. Design by others

Utility Scope:

- Cut and abandon existing sewer main from Manhole 1-044 to Manhole 1-045 (N Navajo Drive to N Talkington Drive).
- Re-align connection point at N Talkington Drive with (2) new manholes, if necessary. New sewer to be located within roadway.
- Replace all existing sewer services from the replaced main to the ROW.
 - Existing sewer video logs will be provided by the City of Flagstaff, otherwise provided by Cardno.
- Replace all existing sewer manholes.

- Adjust existing sewer manholes as required for pavement reconstruction per City of Flagstaff Standards.
- All existing utility collars shall be removed and replaced to City of Flagstaff Standards.
- Asbestos abatement for ACP waterlines (if warranted).

Franchise Utility Scope:

- Evaluate existing franchise utilities locations and elevations. Coordinate relocations/realignments with the franchise utilities as needed (APS, Unisource, Suddenlink, CenturyLink, AT&T, etc.)

SCOPE OF SERVICES:

Basic Services

Task 1 – Data Collection

The purpose of this task is to attain all pertinent information to create a comprehensive basemap for the project area. This will include the finalizing the project basemap and subconsultant coordination. Subconsultants will provide subsurface utility locating and geotechnical report.

Task 1A – Results of Survey

Using the topographic basemap prepared under pre-engineering services WLB will prepare a results of survey that will be used for project control and show existing monuments to be replaced. WLB will coordinate with Cardno to obtain the utility location information and add it to the project basemap checking common points between the topographic and utility survey work.

Deliverables: Project basemap for design.

Task 1B – Sub-Consultant Coordination

Speedie & Associates

WLB will coordinate with Speedie & Associates to provide geotechnical engineering. Their scope of work is presented in Exhibit D. The purpose of the geotechnical investigation is to provide options for pavement design, suitability of soils for reuse, earthwork methods, trenching considerations, and potential corrosiveness of subsoil materials.

Cardno

WLB will coordinate with Cardno to provide the subsurface utility investigation. Their scope of work is presented in Exhibit F. Cardno will determine and deliver all utility information including mains, services, pipe depths, alignment, material, and sizing. Their survey will include all surface appurtenances that include water valves, sewer manholes, water meters, sewer cleanouts, catch basin grates, and storm drain manhole lids. Records research and utility locating performed by Cardno will be completed prior to the 30% design phase. WLB will provide locations and an exhibit to show proposed pothole locations to Cardno. Potholing will be conducted by Cardno during the 60% design phase as utility alignments and tie-ins are being determined. Once completed, a set of sealed utility plans and an AutoCAD file will be delivered to WLB to be incorporated into the WLB topographic survey basemap.

During the subsurface utility investigation, WLB will facilitate meetings, as needed, with the City and Cardno to discuss the project basemap and discuss conflicting information in order to minimize impacts to future submittals. WLB will be responsible for preparing agendas and meeting notes for design meetings.

Deliverables: Geotechnical Report (Speedie), Sealed utility plan and AutoCAD file (Cardno), AutoCAD basemap of the topography and utilities for use in preparing the Coconino Estates Phase II Improvement Plans, Pothole report.

Task 1C – Updated Scoping Plan

WLB will evaluate and prepare an Updated Scoping Plan with the existing roadway widths, the ROW, and initial roadway line work. The information shown on the City’s scoping exhibits will be transferred to the AutoCAD files and overlaid onto the project basemap to prepare the Updated Scoping Plan. WLB will review the Plan with the City’s Project Manager and Staff to discuss the impacts block by block. We anticipate multiple meetings to review impacts, determine the preferred roadway widths, and determine edge improvements that will be shown on the 30% plans. This information will be added to the Updated Scoping Plan:

1. Planview of each roadway with the following: (5 Sheets)
 - a. Typical cross-section existing and proposed
 - b. New layout for proposed cross-section
 - c. Proposed layout of water and sewer lines

Deliverables: PDF Submittal of the Updated Scoping Plan.

Task 2 – Concept 30% Plans

WLB will prepare 30% plans for improvements based on the Updated Scoping Plan prepared in Task 1. Prior to starting the 30% plans WLB will meet with the City of Flagstaff to discuss resolution of comments received for the Updated Scoping Plan. The following plans sheets will be added to the 30% plans for CEIP2:

1. Additional Details (1 Sheet)
2. Control Sheet (1 Sheet) – Update the control sheet to include the additional locations for the Talkington Streets.
3. Water Service Index Sheet (1 Sheet) – Using the information from the City, Cardno and field review, WLB will prepare a sheet showing the existing water meters within the project limits and prepare a table to show location, size, physical address, APN, Keynote and sheet.
4. Sewer Service Index Sheet (1 Sheet) – Using the information from the City, Cardno and field review, WLB will prepare a sheet showing the existing sewer services within the project limits and prepare a table to show location, size, physical address, APN, and sheet.
5. Street Removals/Grading/Drainage Plan and Profiles (9 Sheets) – WLB will prepare plan and triple view profile sheets for the removal and design of new street improvements. At the 30% level only existing profiles will be shown. The design profiles will be added to the future plan submittals.
6. Utility Sheets (9 Sheets) – These sheets will show all the water, sewer, and water and sewer service replacements. Profile will only be added to the sheets that have waterline and sewer line replacements. The other sheets will have 2 plan views per sheet.

The plans will be at 20 scale to accurately show AC, curb, sidewalk replacements. The waterline and sewer line profiles will not be prepared with the 30% Plans.

During the design WLB will facilitate (3) bi-weekly design meetings, as needed, with the City’s Project Manager and Staff to discuss project design and receive input on items that will help with minimizing

impacts to residents located along the project limits. WLB will prepare agendas and meeting notes for design meetings.

WLB will prepare a Design Concept Report to accompany the 30% Plans. This report will present information from design meetings, field walks, and existing residential improvements to document the design progression and existing conditions within the project area. The intent of the report is to provide a resource that can be used for future improvement projects and during construction to restore residential improvements. The report will include stakeholder feedback, edge improvements, and any proposed variances from the City's engineering standards. We expect one set of revisions to the report.

WLB will prepare an overall project engineering cost estimate per the quantities determined during this phase.

Deliverables to the City of Flagstaff: The following will be submitted:

1. Design Meeting agendas and meeting notes
2. (2) Complete sets and PDF's of the Concept 30% plans for review by the City.
 - a. 10 day courtesy review
3. Concept Design Report (Draft & Final)
4. Engineering Cost Estimate

Task 3 – Concept 60% Plans

WLB will prepare the 60% plans based on comments received from the 30% plan submittal. Prior to proceeding with the 60% plan preparation, WLB will meet with the City to discuss the 30% plan review comments, Engineer's Estimate, and potential VE options that should be analyzed during the 60% plan preparation.

The format of the plans sheets for the 60% plans will be the same as the 30% plans with the addition of the SWPPP Plan sheets (2 Sheets). For the 60% plan submittal the design profiles for roads, waterlines and sewer lines will be added.

WLB will update the project overall engineering cost estimate per the quantities determined during this phase.

During the design WLB will facilitate (3) bi-weekly design meetings, as needed, with the City's Project Manager and Staff to discuss project design and receive input on items that will help with minimizing impacts to the residents located along the project limits. WLB will continue to prepare agendas and meeting notes for design meetings.

This submittal will be unsealed and will be submitted to the City's Project Manager for distribution to the City departments for a 15-day courtesy review.

Deliverables to the City of Flagstaff: The following will be submitted:

1. Design Meeting agendas and meeting notes
2. (2) Complete sets of the 60% plans (Hard Copy and PDF).
3. (1) Hard copy and a PDF of the Preliminary Drainage Memo
4. Comment Response Form for 30% plan comments
5. Engineering Cost Estimate

Task 4 – 90 % Plans

WLB will prepare the 90% plans based on comments received from the 60% plan submittal. Prior to proceeding with the 90% plan preparation WLB will meet with the City to discuss the 60% plan review comments, Engineer's Cost Estimate, and potential VE options that should be analyzed during the 90% plan preparation.

The format of the plan sheets for the 90% plans will be the same as the 60% plans.

Draft Special Provisions will be prepared with the 90% submittal.

WLB will update the project overall engineering cost estimate per the quantities determined during this phase.

The 90% Plans will be submitted by WLB to the franchise utility companies (APS, Unisource, Century Link, AT&T and Suddenlink) for utility acknowledgement per the City requirements.

During the design WLB will facilitate (3) bi-weekly design meetings, as needed, with the City's PM and staff to discuss project design and receive input on items that will help with minimizing impacts to the residents located along the project limits. WLB will continue to prepare agendas and meeting notes for design meetings.

Deliverables: The following will be submitted:

1. (2) Complete sets of the 90% plans hard and PDF will be submitted to the City's project manager for review and distribution to City departments.
 - a. COF 20 day review period
2. (1) Hard copy and PDF of the draft special provisions.
3. (5) Sets of the 90% plans only will be submitted to the franchise utilities by WLB.
4. (1) Hard Copy and PDF of the Comment Responses.
5. Engineering Cost Estimate (Overall & Site Specific)

Task 4A – ADEQ Submittal

WLB will update the Engineers Design Reports and ADEQ applications to include the additional water and sewer lines.

Deliverables: Additional information needed to include the Talkington and side street utilities in the CEIP2 submittal to ADEQ.

Task 5 – 100% Plans

WLB will prepare the 100% plans based on comments received from the 90% plan submittal. Prior to proceeding with the 100% plan preparation WLB will meet with the City to discuss the plan review comments, Engineer's Cost Estimate, and potential VE options. Once we have final approval by the City and ADEQ we will submit (2) mylar cover sheets and a digital plan set for City Signatures.

WLB will finalize the project special provisions and the engineers estimate of probable construction cost. A project bid schedule will be prepared for submittal with the 100% Plans. Prior to final City approval,

WLB will revise the plans, Engineer's Design Reports, and/or the application per ADEQ comments and resubmit for Approval to Construct and Notice of Intent to Discharge, if required.

Deliverables to the City of Flagstaff: The following will be submitted:

1. (2) Complete sets of the 100% plans hard and a PDF will be submitted to the City's project manager for review and distribution to City departments.
 - a. COF 15 day review period
2. (2) Mylar cover sheets for signatures will be submitted.
3. (1) Hard copy and PDF of the project special provisions, Engineer's Estimate, and Bid Schedule.
4. (1) Comment Response Form the 90% plan comments.
5. (1) PDF of each of the Franchise Utility Acknowledgements.

Deliverables to ADEQ: If needed as shown above.

END BASIC SERVICES

POST-DESIGN SERVICES

Task 6 – Post-Design Services

Following approval of the plans, WLB will provide post-design services to support the City in successfully completing the construction of improvements.

Task 6A – Bidding Administration

Bidding phase services may include bidding questions and addendum (design changes or additions) preparation.

Task 6B – Construction Administration: Construction phase services may include participation in the pre-construction meeting, on-site representation to address unforeseen conditions and preparation of field orders (exhibits). WLB will provide an estimate of the time required prior to performing this task and will not incur charges under this phase unless authorized to do so by the City's Project Manager.

END CONSTRUCTION ADMINISTRATION

Project Assumptions:

1. Legal descriptions for additional right-of-way and easements are not included in basic services.
2. Sufficient monumentation exists in the immediate vicinity of the Site (within one adjacent Right of Way intersection) to facilitate the relation of the topography survey to the Right of Way/property boundaries.
3. Resolving boundary issues between record information and measured data is not included. If there are any issues we will notify the City to determine the best approach and strategy to resolve.
4. New monuments to replace the ones that are disturbed during construction will be the responsibility of the Contractor. WLB can provide surveying to replace monuments if requested as an additional service.
5. Horizontal and vertical datum will be based on the City of Flagstaff control network. If a different datum is requested, the client will provide the necessary control information.
6. No boundary survey will be conducted or implied. The horizontal control portion of the services does not include setting monuments at property corners or Right of Way centerline.

7. A title report is not needed for determining record right-of-way locations. If one is needed we will notify the City for approval.
8. No sealed Topography Survey plat will be prepared.
9. Providing or modifying the City of Flagstaff water model for the water line replacement is not included.
10. Potholing to locate existing utilities will be coordinated with Cardno during the preparation of the 60% Plans.
11. If the City has existing sewer logs, they will provide. Cardno is to provide TV logs and location of all existing sewer services.
12. WLB prepares the design and construction drawings with AutoCAD Civil 3D 2019. It is assumed that any other entity utilizing WLB design files for the purpose of coordination with this project has the capabilities of using and/or views the files in WLB's original format. Work on WLB's part to re-format or reconstruct files for another entity's use will be considered additional services.
13. ADEQ Submittal fees will be paid by the City of Flagstaff. WLB will coordinate with the City to obtain checks for the submittal.
14. Setting the post construction centerline monument replacements and preparing the corresponding Record of Survey will be the responsibility of the contractor.
15. Record Drawings/As-built preparation and/or review is not included and will be the responsibility of the Contractor during construction.
16. Preparation and/or review of the ADEQ Approval of Construction, Discharge Authorization, and Engineer's Certificate of Completion (ECC) documents is not included.
17. Additional services if required and approved by the client will be billed in accordance with the Fee Schedule for Professional Services for The WLB Group, Inc.

The City of Flagstaff will provide or be responsible for the following information:

1. Water meter sizes and addresses for the services being replaced with this project.
2. Providing as-built water and sewer line plans for the existing lines in the project limits.
3. Provide the design and specification requirements for the underground street light conduits.
4. Setting up the stakeholder meeting(s).
5. Pay ADEQ review and submittal fees.
6. Acquiring temporary construction easements or PUE's for the construction if needed and all coordination with the impacted party.
7. The City will complete the Engineer's Certificate of Completion (ECC) for water, including all sealed test results for the disinfection, and for the leak testing performed by the City Inspectors. The City of Flagstaff will provide the record drawings/as-builts for the water system, fill out the ADEQ application for Approval of Construction, and make the entire submittal to ADEQ for the Approval of Construction.
8. The City will complete the Request for Discharge Authorization for sewer and make the submittal to ADEQ for Discharge Authorization. This includes the application for Discharge Authorization, preparation of the Engineer's Certificate of Completion (ECC) including the sealed test results observed by the City Inspectors, and the record drawings/as-builts for the sewer system.

END SCOPE OF SERVICES

Compensation:

Our Time and Materials (T&M) Not to Exceed (NTE) budget for the Coconino Phase II Talkington and Side Streets project is \$238,156 including sub-consultant fees and reimbursable expenses with a \$12,000 Contract Allowance (5%), for a Total Contract Amount of \$250,156. The budget is summarized in the table below:

Tasks (Design - T&M NTE)	Budget
Task 1 - Data Collection	\$13,920
Task 2 - 30% Design Plans	\$45,645
Task 3 - 60% Design Plans	\$47,795
Task 4 - 90% Design Plans and ADEQ Submittals	\$55,190
Task 5 - 100% Design Plans	\$15,625
Subtotal (Design - T&M NTE)	\$178,175
Tasks (Construction Administration - T&M NTE)	Budget
Task 6 - Post-Design Services	\$20,415
Subtotal (Construction Administration - T&M NTE Budget)	\$198,590
Speedie and Associates w/Markup (Geotechnical Analysis)	\$3,350
Cardno Subsurface Utilities	\$34,416
Reimbursable Expenses	\$1,800
Project Total	\$238,156
CONTRACT ALLOWANCE (7.5%)	\$12,000
TOTAL CONTRACT AMOUNT	\$250,156

End of Compensation

HOURLY RATE SCHEDULE

**FLAGSTAFF
FEE SCHEDULE FOR PROFESSIONAL SERVICES**

TYPICAL HOURLY RATES

Personnel	Hourly Rate
Principal	\$170.00
Public Presentation or Expert Testimony	\$250.00
Senior Project Manager.....	\$140.00
Project Manager	\$130.00
Senior Project: Engineer/Landscape Arch./Planner /Inspector /Surveyor/Designer	\$115.00
Project: Engineer/Landscape Arch./Planner /Inspector /Surveyor/Designer.....	\$110.00
Staff: Design Engineer/Landscape Arch./Planner /Inspector /Surveyor/Designer	\$105.00
Sr. Cadd Operator	\$95.00
Senior Technician	\$90.00
Design Technician	\$85.00
Technician/Cadd Operator	\$80.00
Draftsperson/Assistant Technician	\$75.00
Clerical	\$60.00
Three Man Survey Crew	\$180.00
Two Man Survey Crew	\$160.00
One Man Survey Crew.....	\$135.00

Hourly Rate Schedule

July 23, 2019

Eric Weidinger
The WLB Group
500 N. Beaver Street
Flagstaff, AZ 86001

**RE: Proposal for Geotechnical Investigation
Coconino Estates Phase II
Crescent Drive, Navajo Drive, and Elizabeth Lane
Flagstaff, AZ
Proposal No. 69955SF**

Dear Mr. Weidinger:

We are pleased to provide our cost estimate to conduct a soil investigation at the above referenced site that will satisfy site development and pavement design requirements. All work on this project will be carried out under the overall supervision of a registered Professional Engineer in the state of Arizona.

We understand that construction will consist of roadway and utility improvements north of W. Meade Lane along all of N. Crescent Drive and N. Navajo Drive, and W. Elizabeth Drive from N. Navajo Drive to N. Talkington Drive. Traffic volumes are unknown but expected to consist of light to moderate passenger vehicle traffic with light heavy duty traffic. Adjacent areas will be landscaped or paved to support moderate passenger and light truck traffic. Landscaped areas will be utilized for storm water retention and disposal.

We will drill and sample sufficient test borings to adequately determine subsoil conditions and provide samples for laboratory testing. Sufficient laboratory tests will be conducted to properly classify the soils encountered and provide data for engineering design. We presently anticipate drilling 6 – 8 pavement borings to depths of 10 feet below existing ground surface, or refusal, whichever comes first. The asphalt at all boring locations will be cored for thickness determination and photographic log. Access to the site by conventional truck-mounted drilling equipment is assumed to be free and unencumbered. S&A will arrange for public utilities to be located through Arizona 811 and obtain necessary right-of-way permits and traffic control as required by the City of Flagstaff.

We will analyze the data obtained from field and laboratory testing and prepare a report presenting all data obtained, together with our conclusions and recommendations regarding:

1. Groundwater conditions, if any, to the depths which will influence design and/or construction of the proposed development.
2. Pavement design to provide economy and adequate service.

3. Suitability of site soils for use as compacted fill and preferred earthwork methods, including clearing, stripping, excavation and construction of engineered fill.
4. Local excavation and trenching conditions and stability considerations.
5. Potential corrosiveness of subsoil materials and procedures to minimize the effects thereof.

Charges for our services have been determined on the basis of our standard Fee and Rate Schedule, a copy of which is attached and made a part hereof. We propose to provide the services set forth herein for a lump sum amount of **\$8,000.00**, which includes all testing, engineering and reimbursable expenses, 2 hard copies of the report and a digital pdf copy. Should we be informed that additional copies of the report are needed after it has been finalized, there will be an additional charge of **\$15.00** per report. Time from authorization to proceed to final report submittal at this time is on the order of **5 to 7** weeks following our receipt of this signed proposal (authorization to proceed). This time frame does not include delays due to inclement weather or delays in the field not caused by Speedie & Associates and subcontractors.

We appreciate the opportunity to submit this proposal for your consideration. If the terms set forth are satisfactory, please sign the attached copy, and return it for our records.

Respectfully submitted,
SPEEDIE & ASSOCIATES



Ryan M. Thompson, G.I.T

APPROVED AND ACCEPTED
For: The WLB Group

By: _____

Print Name: _____

Date: _____

ENGINEERING SERVICES
Northern Arizona 2018 Fee and Rate Schedule

Fees for services will be based upon the time worked on the project at the following rates:

Title	Rate Per Hour
Principal	\$ 150.00
Project Manager	110.00
Sr. Geologist/Engineer	110.00
Project Engineer/Geologist	100.00
Environmental Specialist	90.00
Special Inspector (Architectural)	85.00
Special Inspector (Structural/Geotechnical)	85.00
Staff Engineer/Geologist	85.00
Sr. Engineering Technician	75.00
Draftsman	65.00
Materials Testing Technician	55.00
Clerical/Administrative	50.00

REIMBURSABLE EXPENSES

Light Truck Mileage Rate: \$0.50 per mile

The following items are reimbursable to the extent of actual expenses plus 25%:

1. Transportation, lodging and subsistence for out of town travel
2. Special mailings and shipping charges
3. Special materials and equipment unique to the project
4. Duplication or reprinting/copying reports

TEST BORINGS AND FIELD INVESTIGATIONS

On projects requiring test borings, test pits, or other explorations, the services of reputable contractors to perform such work shall be obtained.

SUBCONTRACTORS/SUBCONSULTANTS CHARGES

Any charges for subcontractors/subconsultants are subject to a 25% handling fee if invoiced by Speedie & Associates or such charges can be directly paid by the CLIENT.

SPECIAL RATES

The following rates may be subject to a 35% increase:

- Overtime – time over 8 hours per weekday and on Saturday
- Sunday and Holidays
- Rush orders
- Night Shift

EXPERT WITNESS

Deposition and testimony; 4-hour minimum, \$250.00 per hour.

The following Terms and Conditions are included and hereto made a part of this agreement.

TERMS AND CONDITIONS

1. STANDARD OF CARE

In performing our professional engineering services, Speedie & Associates, Inc. (S&A) will use the degree of care and skill ordinarily exercised by members of our profession currently practicing in the same locality under similar conditions. No warranty, expressed or implied, is made or intended by our proposal for consulting services, our contract, oral or written reports, or services.

2. SCOPE OF SERVICES

2.1 "ON-CALL" SERVICES

Unless otherwise agreed by both parties in writing, all construction materials testing will be performed on an "on-call" basis. Both parties agree that test results for "on-call" testing, where the CLIENT does not request S&A's continuous construction and field observation, will be based only on the representative sample or limited location tested.

2.2 CONSTRUCTION/FIELD OBSERVATION OR REMEDIATION OBSERVATION

If the CLIENT desires more extensive or full-time project observation to help reduce the risk of problems arising during construction, the CLIENT shall request such services as "Additional Services" in accordance with the terms of this agreement. Should the CLIENT for any reason choose not to have S&A provide construction or field observation during the implementation of S&A's specifications or recommendations, or should the CLIENT unduly restrict S&A's assignment of observation personnel, CLIENT shall, to the fullest extent permitted by law, waive any claim against S&A, and indemnify, defend, and hold S&A harmless from any claim or liability for injury or loss arising from field problems allegedly caused by findings, conclusions, recommendations, plans or specifications developed by S&A. CLIENT also shall compensate S&A for any time spent or expenses incurred by S&A in defense of any such claim. Such compensation shall be based upon S&A's prevailing fee and rate schedule.

3. OWNERSHIP OF DOCUMENTS

All reports, plans, specifications, field data, notes and other documents prepared by S&A shall remain the property of S&A. Any reuse of such documents for other purposes must be with the written consent of S&A.

4. SAFETY

While on a CLIENT'S jobsite, S&A's personnel have no authority to exercise any control over any construction contractor, any other entity, or their employees in connection with their work, health or safety precautions. The CLIENT agrees that the General Contractor is solely responsible for jobsite safety and warrants that this intent shall be made evident in the CLIENT'S agreement with the General Contractor. The CLIENT may be charged for additional work for interruption, downtime required, or safety measures required by hazardous job conditions.

5. INSURANCE

Upon request, S&A will furnish certificates of insurance for Workers Compensation, General and Auto insurance, and Professional Errors or Omissions insurance. S&A is not responsible for damage of any cause beyond the coverage of its insurance.

6. INDEMNIFICATION

6.1 ENVIRONMENTAL SERVICES

It is understood and agreed that should the CLIENT hire S&A in matters involving the actual or potential presence of hazardous substances, the CLIENT will indemnify S&A, and its employees and representatives, from and against claims that are the result of negligent acts or omissions on the part of the CLIENT, its employees or representatives. S&A will indemnify the CLIENT from and against claims that are solely the result of negligent acts or omissions on the part of S&A, its employees or representatives.

6.2 NON-ENVIRONMENTAL SERVICES

Both parties agree that S&A's scope of services will not include asbestos, hazardous or toxic materials. Should it become known in any way that such materials may be present at the jobsite or adjacent area that may affect the performance of S&A's services, S&A may suspend its services without any liability until the CLIENT retains appropriate consultation to identify, abate, and/or remove the asbestos, hazardous or toxic materials and warrants that the jobsite is in compliance with applicable laws and regulations. The CLIENT will indemnify S&A and his employees and representatives from and against claims that are the result of negligent acts or omissions on the part of the CLIENT, his employees and representatives. S&A shall indemnify the CLIENT from and against claims, which are solely the result of negligent acts or omissions on the part of S&A, its employees and representatives.

7. LIMITS OF LIABILITY

The CLIENT agrees that S&A shall not be liable for losses caused by or arising from any acts of the CLIENT, his employees or subcontractors. Should any of S&A's employees be found to have been negligent in the performance of professional services rendered, the CLIENT agrees that the maximum aggregate amount of S&A's liability shall be limited to \$50,000.00 or the amount of the fee paid to S&A for professional services, whichever amount is greater.

8. WAIVER OF LIMITATION OF PROFESSIONAL LIABILITY

In the event the CLIENT is unwilling or unable to limit liability in accordance with the paragraph above, then CLIENT shall agree to pay S&A a sum equivalent to an additional 20% of the total fee to be charged for the professional services. Said sum is to be called "Waiver of Limitation of Liability Charge." This charge will in no way be construed as being a charge for insurance of any type, but will be increased consideration for the greater risk involved in performing the work up to the limit of proceeds available from S&A's professional insurance coverage.

9. SAMPLE DISPOSAL

9.1 NON-HAZARDOUS SAMPLES

Test samples are substantially altered during testing and are disposed of immediately upon completion of tests. Drilling samples are disposed of thirty (30) days after submission of our report. If requested in writing, samples can be held after thirty (30) days for an additional storage fee, or returned to the CLIENT.

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10. PAYMENT

Progress invoices will be submitted to the CLIENT monthly with a final billing at completion of services. Invoices are due and payable upon receipt. The CLIENT agrees to pay a finance charge of 1.5 % per month on all past due accounts over thirty (30) days. The CLIENT'S obligation to pay for all work contracted is in no way dependent upon the CLIENT'S ability to obtain financing, zoning approval, or the CLIENT'S successful completion of the project. S&A reserves the right to suspend work under its agreement if the CLIENT fails to pay invoices as due. The CLIENT agrees to pay all costs for collection of payment, including attorney's fees.

11. LITIGATION

In the event of litigation between parties to this agreement, if S&A is the prevailing party, S&A shall be entitled to recover all related costs, expenses, and reasonable attorney fees.

September 10, 2019
Revised: October 22, 2019

Eric Weidinger
The WLB Group
500 N. Beaver Street
Flagstaff, AZ 86001

**RE: Proposal for Geotechnical Investigation
Coconino Estates Phase II – Additional Improvements
Talkington Drive, Louise Way, Thelma Way, and Hazel Way
Flagstaff, AZ
Proposal No. 69955SF.a**

Dear Mr. Weidinger:

We are pleased to provide our cost estimate to conduct a soil investigation at the above referenced site that will satisfy site development and pavement design requirements. All work on this project will be carried out under the overall supervision of a registered Professional Engineer in the state of Arizona.

We understand the scope for this phase of the project has changed to include additional improvements adjacent to the work that has already been proposed north of W. Meade Lane along all of N. Crescent Drive and N. Navajo Drive, and W. Elizabeth Drive from N. Navajo Drive to N. Talkington Drive. The additional scope includes utility and roadway improvements on N. Talkington Drive, Louise Way, Thelma Way, and Hazel Way. Traffic volumes are unknown but expected to consist of light to moderate passenger vehicle traffic with light heavy duty traffic. Adjacent areas will be landscaped or paved to support moderate passenger and light truck traffic. Landscaped areas will be utilized for storm water retention and disposal.

In addition to the proposed work stated in proposal number 69955SF, we will drill and sample sufficient test borings in the additional areas to adequately determine subsoil conditions and provide samples for laboratory testing. Sufficient laboratory tests will be conducted to properly classify the soils encountered and provide data for engineering design. We presently anticipate drilling 6 pavement borings to depths of 10 feet below existing ground surface, or refusal, whichever comes first. The asphalt at all boring locations will be cored for thickness determination and photographic log. Access to the site by conventional truck-mounted drilling equipment is assumed to be free and unencumbered. S&A will arrange for public utilities to be located through Arizona 811 and obtain necessary right-of-way permits and traffic control as required by the City of Flagstaff.

We will analyze the data obtained from field and laboratory testing and prepare a report presenting all data obtained, together with our conclusions and recommendations regarding:

1. Groundwater conditions, if any, to the depths which will influence design and/or construction of the proposed development.

2. Pavement design to provide economy and adequate service.
3. Suitability of site soils for use as compacted fill and preferred earthwork methods, including clearing, stripping, excavation and construction of engineered fill.
4. Local excavation and trenching conditions and stability considerations.
5. Potential corrosiveness of subsoil materials and procedures to minimize the effects thereof.

Charges for our services have been determined on the basis of our standard Fee and Rate Schedule, a copy of which is attached and made a part hereof. We propose to provide the services set forth herein for a lump sum amount of **\$3,350.00**, which includes all testing, engineering and reimbursable expenses, 2 hard copies of the report and a digital pdf copy. This pricing assumes that this portion of the work will be performed utilizing the same drill rig in conjunction with the proposed work in proposal number 69955SF. Should we be informed that additional copies of the report are needed after it has been finalized, there will be an additional charge of **\$15.00** per report. Time from authorization to proceed to final report submittal at this time is on the order of **5 to 7** weeks following our receipt of this signed proposal (authorization to proceed). This time frame does not include delays due to inclement weather or delays in the field not caused by Speedie & Associates and subcontractors.

We appreciate the opportunity to submit this proposal for your consideration. If the terms set forth are satisfactory, please sign the attached copy, and return it for our records.

Respectfully submitted,
SPEEDIE & ASSOCIATES



Ryan M. Thompson, G.I.T

APPROVED AND ACCEPTED
For: The WLB Group

By: _____

Print Name: _____

Date: _____

ENGINEERING SERVICES
Northern Arizona 2018 Fee and Rate Schedule

Fees for services will be based upon the time worked on the project at the following rates:

Title	Rate Per Hour
Principal	\$ 150.00
Project Manager	110.00
Sr. Geologist/Engineer	110.00
Project Engineer/Geologist	100.00
Environmental Specialist	90.00
Special Inspector (Architectural)	85.00
Special Inspector (Structural/Geotechnical)	85.00
Staff Engineer/Geologist	85.00
Sr. Engineering Technician	75.00
Draftsman	65.00
Materials Testing Technician	55.00
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REIMBURSABLE EXPENSES

Light Truck Mileage Rate: \$0.50 per mile

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11. LITIGATION

In the event of litigation between parties to this agreement, if S&A is the prevailing party, S&A shall be entitled to recover all related costs, expenses, and reasonable attorney fees.



July 24, 2019
Mr. Eric Weidinger, P.E.
The WLB Group
500 North Beaver Street
Flagstaff, Arizona 86001

Dear Eric,

Thank you for requesting this proposal for professional services related to Clean Water Act Section 404 Compliance for Coconino Estates Phase II Project in Flagstaff, Arizona.

The proposed project includes construction of an approximately 235-foot-long sewer line in Coconino Estates under North Crescent Drive. Of the 235-foot-long sewer line, approximately 150 feet would be installed under North Crescent drive, and the remaining 85 feet would be installed under the adjacent Flagstaff Urban Trail System trail and would then connect to the existing sewer line in the Rio De Flag. Because the Rio De Flag is considered a “Water of the U.S.”, impacts to this drainage will need to be quantified to determine what level of compliance with the Clean Water Act (CWA) will be required. The following outlines our proposed scope of services and fee.

SCOPE

After reviewing the project area map (shown on the next page) and scope of work, it appears that the potential impacts to the Rio De Flag as a result of this project would be under 0.1 acre (approximately 50 linear feet with a 20-foot-wide construction easement). As a result, under Nationwide Permit 12 for utility line construction, no Pre-Construction Notification to the U.S. Army Corps of Engineers would be required for a project that would result in less than 0.1 acre of dredge or fill in a Water of the U.S. However, a wetland/Waters of the U.S. delineation will be required to show the area of impact within the Rio De Flag.

To show that the project will result in less than 0.1 acre of disturbance, a wetland/Waters of the U.S. delineation will be required to show the area of impact within the Ordinary High Water Mark of the Rio De Flag. This will require approximately one day of fieldwork and half of a day for mapping.

After completion of fieldwork, one day of reporting would be required to produce a technical memorandum with a map of the delineation and results of the survey. The quantity of acreage that will be disturbed within the delineation will also be provided within the memo to show that the area of disturbance will indeed be less than 0.1 acre.

Deliverables: Technical memorandum and map(s)

FEE

The proposed lump sum fee is \$2,900 including reimbursable expenses.

SCHEDULE

JE Fuller will complete the CWA compliance work in coordination with the overall project schedule. However, we are available to begin review of documents, maps, and data upon approval of this proposal.

ASSUMPTIONS

1. If there are any major changes to the scope of work that require additional disturbance within the Rio De Flag, a Pre-Construction Notification for the Army Corps of Engineers may be required and would necessitate a modification to this proposal.
2. WLB Group will supply any GIS data for the proposed sewer line and construction easement areas.
3. This proposal does not include a biological survey to comply with the Endangered Species Act or a cultural resources survey to comply with the National Historic Preservation Act because we do not feel that they are necessary given the limited area of disturbance.
4. Additional services if required and approved by the client will be negotiated on an as-needed basis.

Authorization to proceed with the services can be acknowledged by signing below and returning a signed copy to JE Fuller (electronic acceptable). Thank you again for the opportunity to provide you with this proposal for services. We look forward to providing you with high quality professional environmental services.

Sincerely,

JE Fuller Hydrology & Geomorphology, Inc.



Joe Loverich, P.E, CFM

Vice President

Acceptance of scope, fee, schedule, terms and conditions:	
<hr/>	
<hr/>	
Printed Name/Title	Date

September 24, 2019

The WLB Group, Inc.

Attn: Eric Weidinger
500 N. Beaver Street
Flagstaff, AZ 86001
Email: eweidinger@wlbgroup.com
Phone: 928-779-1500

**RE: Coconino Estates Improvements Phase 2
Flagstaff, Arizona
Subsurface Utility Engineering (SUE)–Scope of Services
Cardno Proposal No. 16104-19-0025**

Dear Mr. Weidinger:

Thank you for the opportunity to propose on this project. Our experience providing subsurface utility engineering for State DOTs, counties, municipalities, and various public works departments will enable us to successfully complete this utility investigation and meet the program and project goals. The combination of our resources and experience will provide you with the confidence that Cardno is the right choice to complete the project on time and on budget. For more information, please visit www.cardno.com.

Our Scope of Services is further detailed in the project understanding section of this proposal. This proposal has been prepared for Coconino Estates Improvements - Phase 2. We have provided you with a Time and Material Fee to complete the specific items described within the Scope of Services. We respectfully request any comments or questions you may have.

Thank you again for this opportunity. We are committed to giving you the quality and service that you expect from Cardno.

Sincerely,

Cardno, Inc.



Robert Ramsey, P.E, LEED AP
Business Unit Manager – UES West
Phone: 602.320.8121
Email: robert.e.ramsey@cardno.com

PROJECT UNDERSTANDING

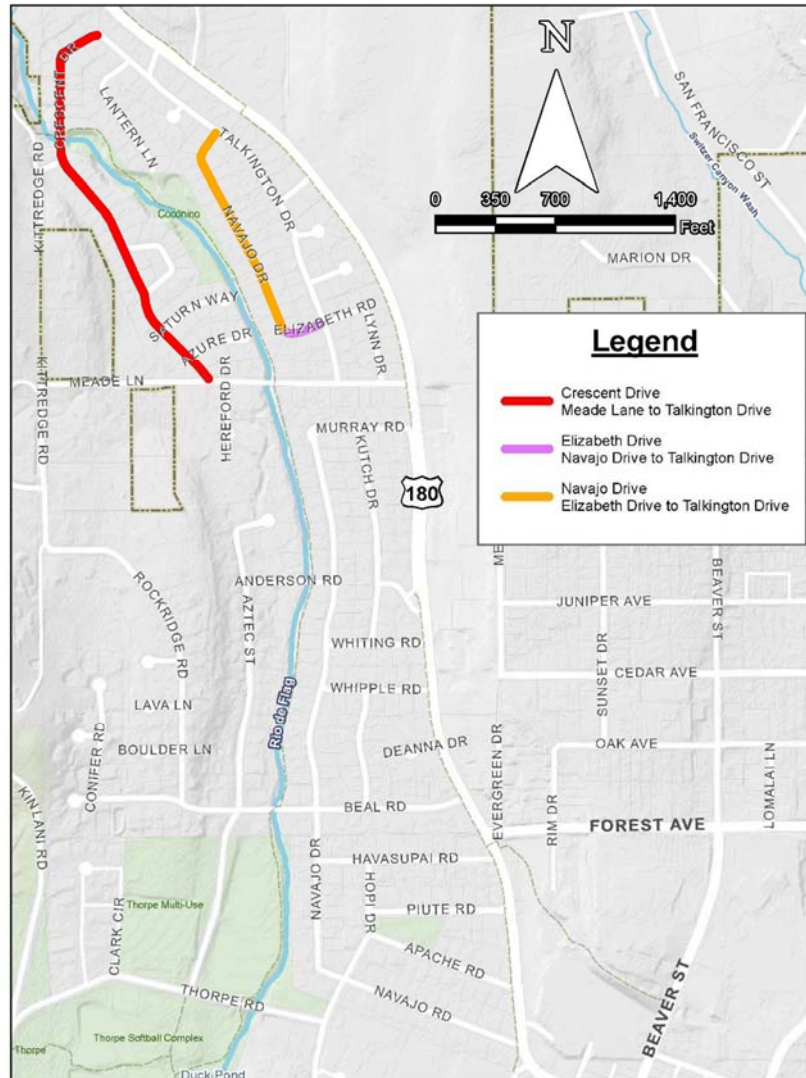
The Cardno team will complete ASCE 38 Quality Level D, C, B, & A Utility Mapping within the project area as defined below. The team will utilize the CI/ASCE 38 standard for collecting and depicting the existing utilities and build the highest quality utility map available. This process will include an iterative field investigation, which will ultimately produce detailed drawings that are signed and sealed by a Professional Engineer in accordance with the requirements of the Standard.

Cardno's general workflow to our approach is outlined below:

1. Perform records research (Quality Level D);
2. Perform survey of existing Utility Appurtenances (Quality Level C)
3. Perform geophysical investigation (Quality Level B designating);
4. Perform survey of utility markings placed by our designators;
5. Complete utility mapping with depictions as outlined in the ASCE 38 standard;
6. QA/QC of our investigative findings based on existing records, maps and as-built information;
7. Complete QLA Test Holes as requested by the design team;
8. Provide mapping of the completed utility investigation findings – signed and sealed by a licensed engineer.

LIMITS OF INVESTIGATION

- The utility investigation will cover the existing City of Flagstaff (COF) right of way of N. Crescent Drive from Talkington Drive to Meade Lane, as well as, along N. Navajo Drive from Talkington Drive to Elizabeth Drive and along Elizabeth Drive from Navajo Drive to Talkington Drive as shown in the figure below. The investigation will also cover approximately 100 feet in all directions of any streets intersecting the previous listed streets.
- The results of utility investigation and any survey work performed in conjunction with the investigation will be tied to the project datum as specified by the WLB Group, Inc.



PROJECT APPROACH

The Cardno team will complete a SUE mapping investigation in accordance with the CI/ASCE Standard 38: *Standard Guideline for the Collection and Depiction of Existing Subsurface Utilities*. ASCE 38 provides a nationally recognized, standard guideline for the collection and depiction of existing subsurface utility data. The quality level provides a professional opinion of the quality and reliability of the utility information. The four quality levels are as follows:

- **Quality Level D (QLD):** Record research of existing subsurface utilities within the project limits by contacting each utility owner and obtaining their available facility records. This process will substantiate necessary records that will be obtained and the mapping of untraceable (nonmetallic buried without trace wire) utilities that do not meet Quality Level C or B specifications. QLD mapping is based on information obtained from record drawings and includes utility type, ownership, size and material composition.
- **Quality Level C (QLC):** Inclusive of a QLD effort, the project team will provide QLC mapping of existing untraceable subsurface utilities by correlating surveyed surface evidence to the QLD utility records to obtain the utility location. QLC mapping includes utility type, ownership, size and material composition based on available record information.
- **Quality Level B (QLB):** Involves the use of QLC and QLD methods of utility investigation and the use of surface geophysical techniques under the direction of a Professional Engineer licensed in the State of Arizona to determine the existence and horizontal position of underground utilities. This activity is called "designating." The information obtained in this manner is surveyed to project control. Two-dimensional (2D) mapping information is obtained.
- **Quality Level A (QLA):** Involves the use of QLB, QLC and QLD methods of investigation, plus the use of minimally intrusive excavation methods at critical points to determine the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material and other characteristics. The excavation and data documentation activity is called Locating "excavation of test holes". It is the highest level of utility certainty presently available. When surveyed and mapped, precise plan and profile information is available for making final design decisions at the test hole locations.

Cardno's general approach is to perform a QLB investigation using all available geophysical means and methods to identify the location of the subsurface utilities within the project limits. Where QLB data is not able to be obtained, the utility will be shown at QLC or QLD depending on available information and surface features.

The scope of services identified below provide for QLB mapping. The following tasks outline in detail our approach to the services to be rendered.

SCOPE OF WORK

A Professional Engineer licensed in the State of Arizona (Consultant) shall oversee, document, stamp and seal a Subsurface Utility Engineering (SUE) investigation of the project area to determine existing utility conditions within the project limits. As part of the SUE investigation for this project the Consultant will work on the following tasks:

➤ **QLD Utility Records Research**

The Cardno team shall perform the following activities as part of their research effort on this project:

- Conduct a full reconnaissance and utility records research to aid in the identification of Utility Owners that may have facilities on, or be affected by, the SUE project.
- Collect all applicable utility facility records available through Utility Owner(s), such as one-call notification, service maps, as-built drawings, standard drawings, service plats, construction plans from prior projects, local government or Agency permit exhibit drawings, and oral histories gained through interviews with Utility Owner officials and authorities.
- Compile a list of all utility companies contacted for information. Note information received with contact information for each response and note non-response if applicable.
- Attempt to identify all known and unknown utilities, except as noted above, within the project area at QLB and depict those utilities at the actual achieved utility Quality Level.
- All documents collected and all utility company contacts (including contact info) will be provided to the client

➤ Perform QLC, QLB Investigation

The Cardno team will conduct the following:

- While conducting survey of the QLB designating marks as identified below, Cardno will review the survey of existing visible surface utility appurtenances conducted by the Prime Consultant for the project and their team (The WLB Group, Inc.) and correlate the information provided to the QLD utility records to obtain the utility location. This effort will update the information and mapping to QLC, and all data will be incorporated into the CAD file and final PDF deliverable.
- Utilize geophysical utility locating techniques to determine the true horizontal position of conductive utilities within the project area. The project team will provide QLB mapping of existing traceable (metallic or nonmetallic buried with trace wire) subsurface utilities utilizing a variety of geophysical locating equipment to detect, verify and designate the location of subsurface utilities from above ground. Once designated (horizontally positioned), verified utilities are marked using appropriate pink paint and flagging which is the standard industry color for temporary markings. This field information is then surveyed and mapped into a digitized CAD file compatible with the project design files.
- Cardno will utilize a full suite of geophysical equipment appropriate to existing site conditions for locating the type of utility being investigated. Utilities detected that were not identified by the records research will be termed "undocumented" and depicted on the plans as "unknown" utilities.
- Cardno will use a complimentary suite of geophysical tools in an attempt to determine the location of undocumented utilities but cannot guarantee finding all undocumented utilities. Electromagnetic depths will not be recorded during this investigation.
- As an additional step, Cardno will use inductive scanning techniques in critical areas to attempt to designate the presence of conductive undocumented utilities. QLA Test Holes may be necessary to confirm the existence of undocumented utilities in areas of potential conflicts.
- GPR NOTE: Cardno will conduct an investigation of the project site using Ground Penetrating Radar (GPR) equipment in an effort to detect larger non-metallic utilities. However, the degree of success of a GPR investigation is based entirely on the composition of the soils and the depth and scale of subsurface targets. Electrically non-conductive soils, such as quartz sands, typically allow for the study of phenomena to depths greater than 15 feet. Electrically conductive soils, such as clay, moist silt or saline soils typically preclude the investigation of targets deeper than 3-6 feet. A determination of a maximum attainable depth of investigation requires on-site resistive site calibration of the GPR equipment. Subsequently, due to the unknown receptiveness of specific site soils to the passage of radar energy, conclusive results cannot be guaranteed from GPR.
- QLB depiction will be attempted on all mainline utilities included within Cardno's geophysical investigation, with the exception of sewer, storm drain, and possibly non-metallic water which will be depicted at QLC or QLD dependent upon existing physical appurtenances associated with these lines; utilities that cannot be designated at QLB but have existing physical appurtenances in the field will be depicted at QLC; utilities which cannot be designated at QLB and for which there are no visible physical appurtenances will be depicted at QLD per record.
- Locating and identifying individual utility services to homes and buildings will include water, sewer and natural gas only when they are serviced directly from the City of Flagstaff ROW. Underground storage tanks (USTs), septic fields, traffic loop systems and landscape irrigation are excluded.
- Invert information and, where possible, pipe size/material will be collected at Storm and Sewer Manholes as well as Storm Drain Catch Basins and Drop inlets, where accessible from the surface. The alignment of the sewer pipes will be shown on the drawing based on a combination of record information received, results of the invert investigation, surveyed MH's/CB's and professional judgment. If confined space entry is required to obtain information of offset or excessively deep pipes, extra costs will be incurred and will be discussed with the client in advance.
- Cardno will document top of nut elevations on water valves throughout the project limits. If valves are full of water or debris Cardno will notify the City and request having the valves box cleaned out for further investigation.

➤ Perform Overhead Utility Survey

The Cardno team will research and document overhead utilities within the project limits as follows:

- Pole locations; Ownership and type of utility if available; All data will be incorporated into the CAD drawing and final PDF deliverable. Survey of Pole locations will be Cardno.

➤ Perform CCTV Investigation

The Cardno team will conduct a CCTV investigation of all sanitary sewer lines throughout the project limits:

- The Cardno team will complete a conventional CCTV investigation; daily reports will follow the NASSCO format and standards.
- All sewer laterals encountered during the mainline investigation will also be investigated using CCTV via side launching sondes and video capabilities. The laterals will also be located using a sonde attached to the side launching CCTV apparatus, such that the horizontal position can be determined and mapped/painted on the ground surface. Service laterals will be marked just past the back of curb or back of sidewalk in order to limit disturbance to adjacent residential lots. The field markings will then be surveyed and processed into the project utility base file.
- CCTV work will be completed and a QA/QC review of all CCTV deliverables against the SUE mapping will be completed.

➤ Perform QLA Test Holes (Potholes) per the QLA ASCE 38 Standard

The Cardno team will complete 20 test holes (assumed) on this project at identified conflict locations as follows:

- Cardno can assist the client in determining the critical points based on their design to identify the test hole locations along with an accompanying test hole number.
- Will provide traffic control plans and protection in accordance with the City of Flagstaff specifications and permit requirements. This item will be subcontracted to a local certified traffic control company if required, and permits for all work are assumed to be waived by the City.
- Cardno will obtain required permits (no cost permits), contact state one-call notification system (Blue Stake), and submit one-call tickets prior to excavation.
- Cardno will use the compressed air & vacuum excavation method at critical points to measure and record the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material and other characteristics. Standard hole size is 12"x12" hole with a depth up to 6 feet deep.
- Backfill of excavated test holes will be in accordance with City of Flagstaff standards.
- The test hole information will be documented on the Cardno Testhole Data Report and then surveyed. The client will receive the reports with the surveyed test hole locations outlined. The testhole reports will be signed and sealed by an Arizona Registered Professional Engineer (licensed with the AZ Board of Technical Registration).

Notes:

- If additional holes are required over and above the 20 holes scoped for this project, they will be done so on a separate task for a separate fee.
- Prior to beginning the QLA test hole work, Cardno will need to receive a list of all requested test holes with accompanying Northing and Easting coordinates
- Each test hole will be assigned a unique ID number and will be marked for survey.
- If rock or concrete is encountered during the excavation and Cardno is not able to excavate through our normal excavation procedures, Client will be immediately notified of the field conditions. Excavation in rock or excavation to a depth greater than 12 feet is considered beyond the scope of this proposal and can be estimated for the Client on a case by case basis.
- If test holes are located in sidewalk or concrete, there will be a per hole charge of \$125 per hole to excavate, jackhammer, and remove the existing concrete on the site, saw cut, and conduct 12" x 12" concrete restoration using bagged pre-mixed concrete.
- Dry test holes over QL D or C utilities will be billed at a rate equal of the test hole rate. Extra wide test holes (larger than 18 inches in width) will be billed at 150% of the test hole rate. Any hole excavated over 6' in depth will be charged \$75 per foot.
- Test Holes in which two utilities are found at a separation of more than 18" on center will be billed as two separate test holes. Test Holes which are requested at locations of the crossing of two utilities, will be billed as two separate test holes when the overall hole width exceeds 15".

DELIVERABLES

- SUE plan set and CAD drawing showing the location of the utilities within the project area. The drawing will depict utilities within the investigation area at the achieved ASCE 38 Quality Level and a 24" x 36" PDF plan set will be signed and stamped by a licensed Professional Engineer.
- Pertinent QLA utility test hole data will be presented in scanned electronic format on our standard "Test Hole Data Summary" and individual "Test Hole Data Report" forms sealed by an Arizona Registered Professional Engineer (licensed with the AZ Board of Technical Registration) that includes the depth, horizontal coordinates, vertical elevation, size, and material composition of the utility line exposed at each test hole.
- Cardno will provide the client with all documents collected during the QLD utility records research efforts
- Cardno will provide the client with the list of all utility companies (including contact information) contacted during the SUE investigation

ASSUMPTIONS

- The WLB Group, Inc. will provide the following:
 - Existing topographic survey which includes sewer manhole lids only as a QC check
 - Survey control
 - Existing right-of-way mapping
 - A list of all active water meters servicing properties throughout the project limits
 - List of all requested test holes with accompanying N&E coordinates
 - Any previously collected utility records, points of contact, as-built plans, and electronic files to be made available for Cardno's use during the utility investigation.
 - ROW and/or boundary work will not be completed by Cardno as part of this scope and fee. Any ROW or boundary line work that Cardno is asked to incorporate into our plans will need to be provided to Cardno for its use. If this information is unable to be provided, it will not be included or shown on the SUE utility plans prepared and submitted by Cardno.
 - This Scope of Services has been detailed to ensure we are providing the services desired and agreed to by the client and Cardno. Services not specifically listed are assumed to be excluded from Cardno's scope.
- Other assumptions:
 - City of Flagstaff will waive all permit fees and therefore have been assumed at zero cost
 - Cleaning of sanitary sewer lines in order to complete the CCTV investigation is not included in this proposal. If sanitary sewer lines require cleaning, Cardno will reach out to the City of Flagstaff and request this work be completed by the City. If Cardno is required to conduct this cleaning, a change order will be required and it will be completed under a separate scope and fee.

PROJECT ESTIMATE

For the services outlined Cardno proposes compensation for the estimated fee identified below. The cost estimate below assumes that the original scope for Phase 2, the additional scope, and the Meade Lane investigations will start simultaneously. If the scoped areas are part of separate timelines, additional mobilization costs may be added on a separate scope and fee.



**Coconino Estates Phase 2
 Subsurface Utility Engineering
 Cardno Proposal**

PROJECT ESTIMATE			
SUE Quality Level "D, C & B" Designating/Mapping			
*Quality Level "D, C, & B" Designating Subsurface Utilities	48 hours @	\$280.00 per hour	\$13,440.00
Subtotal			\$13,440.00
SUE Quality Level "A" Test Hole Excavation			
*Quality Level "A" Test Hole Estimate	20 holes @	\$630.00 per hole	\$12,600.00
*Contingency	Extra Depth/Width and/or Concrete Work		\$800.00
Subtotal			\$13,400.00
CCTV Investigation			
*CCTV Investigation of Sanitary Sewer	Lump Sum		\$4,350.00
*CCTV Investigation of Sanitary Sewer Laterals	82 Laterals @	\$78.00 per lateral	\$6,396.00
Subtotal			\$10,746.00
Professional Services			
*Project Manager	2 hours @	\$157.00 per hour	\$314.00
*Project Engineer	10 hours @	\$132.00 per hour	\$1,320.00
*SUE Supervisor	12 hours @	\$120.00 per hour	\$1,440.00
*CAD Technician	32 hours @	\$96.00 per hour	\$3,072.00
*Admin	2 hours @	\$69.00 per hour	\$138.00
Subtotal			\$6,284.00
Misc., Permits & Maintenance of Traffic			
*Permits: (assumes "zero" cost)	No Cost on Project		\$0.00
*Maintenance of Traffic Set-ups, Traffic Plan Preparation & Traffic Plan Permit Submittals	Billed Cost + 10%		\$3,500.00
*Slurry Backfill (estimated)	Estimated (Billed Cost + 10%)		\$2,000.00
Subtotal			\$5,500.00
TOTAL			\$49,370.00

* Proposal estimate only, the cost may vary plus or minus do to unknown field conditions & municipality requirements

Note 1: Utility designating rate includes: 2 man designating crew, survey, trucks and equipment. Only the amount designated in the field will be billed and the fee above is estimated only.

Note 2: No permit fees are estimated due to this being a City project. If permits are required they will be billed at cost + 10%

Cardno will not exceed the estimated fee without prior authorization from Client. **An invoice will be prepared upon completion for the actual work completed up to the estimated budget amount.** We appreciate this opportunity to provide professional SUE and Surveying services for this project. Should you have any questions or require additional information, please do not hesitate to call.

Sincerely,

Cardno, Inc.



Robert Ramsey, P.E, LEED AP
 Principle – West Business Unit Manager
 Phone: 602.320.8121
 Email: robert.e.ramsey@cardno.com

AGREEMENT

This Agreement sets forth the following terms and conditions for retention of **Cardno, Inc.** ("**Cardno**") to provide consulting services to **The WLB Group, Inc.** (hereinafter referred to as "**CLIENT**") in connection with the subject project.

This Agreement consists of the following identified subparts, all of which are attached hereto and by this reference incorporated herein: **SCOPE OF SERVICES, FEE SCHEDULE and GENERAL CONDITIONS.**

The basis of Cardno's retention is described in the attached SCOPE OF SERVICES, COMPENSATION and GENERAL CONDITIONS. Client acknowledges they have read and agree to the Scope of Services, Fee Schedule and General Conditions as provided in the General Conditions. Any requested services, which are in addition to the attached Scope of Services, will be invoiced according to Cardno's standard schedule of rates or included in a contract addendum.

THIS IS A LEGALLY BINDING AGREEMENT APPROVED AND AGREED TO:

Approved for: *The WLB Group, Inc.*

Approved for: *Cardno Inc.*

Signed: _____ Signed:  _____

Name: _____ Name: Robert Ramsey _____

Title: _____ Title: Principle – West Business Unit Manager _____

Date: _____ Date: 09/24/19 _____

NOW, THEREFORE, Cardno shall perform the services outlined in this Agreement for the stated fee in accordance with these terms and conditions:

ARTICLE 1: ACCESS TO SITE (if applicable)

Upon execution of this Agreement, the Client represents that they have secured legal rights to access the property and authorizes Cardno staff to access the site for activities necessary for the performance of the services.

ARTICLE 2: PAYMENT

- a. Cardno will submit invoices to Client monthly for services provided during the previous month. Each invoice will identify the project name and cost of the services provided. Cardno's rates are subject to increase annually.
- b. Within thirty (30) days following Client's receipt of each invoice rendered by Cardno pursuant to this Agreement, Client will pay the amount invoiced. Retainers/deposits shall be credited on the final invoice. If Client disputes any portion of an invoice; Client will notify Cardno in writing of such disputed items within 10 days of invoice date. In the event any invoice has not been paid in full within sixty (60) days of the invoice date, Cardno may immediately suspend all or any portion of the Services hereunder indefinitely, pending payment in full of such invoice(s).
- c. Interest will accrue on accounts overdue by 30 days at the lesser of 1.5 percent per month (18 percent per annum) or the maximum legal rate of interest allowable. Collection fees and any additional legal costs associated with the recovery of outstanding payments may also be applied

ARTICLE 3: INDEMNIFICATION

Cardno and Client shall indemnify and hold harmless each other from and against damages, liabilities, costs and expenses, including but not limited to reimbursement of reasonable attorney fees arising out of damages or injuries to persons or property to the extent caused by the negligence, gross negligence or willful misconduct by the other party or anyone acting under its direction or control or on its behalf in the course of its performance under this Agreement; provided that each party's aforesaid indemnity agreement shall not be applicable to any liability based upon willful misconduct or negligence of the other party. In no event shall either party be responsible for any form of consequential damages, including, but not limited to loss of sales, loss of profits, and attorney fees thereon. For purposes of this Paragraph, the duty to indemnify does not include the duty to pay for or to provide an up-front defense against unproven claims or allegations. Where any claim results from the joint negligence, gross negligence or willful misconduct by Client and Cardno, the amount of such damage for which Client or Cardno is liable as indemnitor under this Paragraph shall equal the proportionate part that the amount of such claim attributable to such indemnitor's negligence, gross negligence or willful misconduct bears to the amount of the total claim attributable to the joint negligence, gross negligence or willful misconduct at issue.

ARTICLE 4: LIMITATION OF LIABILITIES

Notwithstanding any other provision in this Agreement, the Client agrees to strictly limit Cardno's liability under this Agreement or arising from the performance or non-performance of the Services under any theory of law, including but not limited to claims for negligence, negligent misrepresentation and breach of contract, to the lesser of five times the fees paid to Cardno for the Services or the maximum of insurance provided. No claim may be brought against Cardno in contract or tort more than two (2) years after the cause of action arose. Any claim, suit, demand or action brought under this Agreement shall be directed and/or asserted only against Cardno and not against any of Cardno's employees, shareholders, officers or directors. Cardno's liability with respect to any claims arising out of this Agreement shall be limited as provided herein to direct damages arising out of the performance of the Services and Cardno shall not be held responsible or liable whatsoever for any consequential damages, injury or damage incurred by the actions or inactions of the Client, including but not limited to claims for loss of use, loss of profits and loss of markets.

ARTICLE 5: TERMINATION

This Agreement will continue in effect until terminated by either party upon thirty (30) days written notice to the other party. In the event of any termination, Cardno shall be paid for all services rendered and reimbursables incurred through the date of notice of termination. In the event of termination, the Client shall pay all additional costs reasonably related to termination of the project and a proportionate amount of the consideration hereunder commensurate with the portion of the project accomplished.

ARTICLE 6: FORCE MARJEURE

Any suspension, temporary or permanent, in the performance of this Agreement caused by any of the following events and without fault or negligence on the part of the defaulting party shall not constitute a breach of contract: labor strikes, riots, war, acts of governmental authorities, unusually severe weather conditions or other natural catastrophic events, or any other similar event beyond the reasonable control or contemplation of either party.

ARTICLE 7: ASSIGNMENT

Neither party to this Agreement shall, without the prior written consent, of the other party, which shall not be unreasonably withheld, assign the benefit or in any way transfer any claim or obligation under this Agreement or any part hereof. This Agreement shall inure to the benefit of and be binding upon the parties hereto, and except as otherwise provided herein, upon their executors, administrators, successors, and assigns.

ARTICLE 8: OWNERSHIP OF DOCUMENTS

All report documents produced by Cardno under this Agreement shall be made available to the Client upon receipt of full payment for services rendered. Cardno shall retain ownership of all field notes, computer files and project files used to produce the work products and may make copies of all work products.

ARTICLE 9: CONFIDENTIALITY

Cardno will maintain in confidence the nature of its Services, as well as all information made available to Cardno by Client during the term of this Agreement or resulting from Services performed by Cardno under this Agreement. The confidential obligation imposed on Cardno by Paragraph 9, however, will not extend to any such information insofar as, and from such time as Cardno may disclose (i) as required by law, (ii) pursuant to court order, (iii) to its subcontractors, agents or other representatives as may be reasonably necessary to perform its services hereunder (iv) for the purpose of prosecuting or defending any litigation, or (v) Cardno can show by reasonable proof has been in the public domain. Cardno agrees to use information intended to be kept confidential under this Paragraph 9 solely to provide its Services.

ARTICLE 10: NOTICES

Any notices or written statements hereunder shall be deemed to have been given when mailed by certified or registered mail or via email, with receipt of reply, to the party entitled thereto at its address noted at the top of this Agreement or at such other latest address as it may designate in writing to the other party for this purpose.

ARTICLE 11: NON-SOLICITATION

Neither party shall knowingly solicit, recruit, hire or otherwise employ or retain the employees of the other working under this Agreement during the term of this Agreement and for one (1) year following the termination or expiration of this Agreement without the prior written consent of the other party.

ARTICLE 12: WAIVER

Failure by one party to notify the other party of a breach of any provision of this Agreement shall not constitute a waiver of any continuing breach. Failure by one party to enforce any of its rights under this Agreement shall not constitute a waiver of those rights. The waiver by either party of a breach or violation of any provision of this Agreement shall not operate as, or be construed to be, a waiver of any subsequent breach of the same or any other provision hereof.

ARTICLE 13: GOVERNING LAW

The validity of this Agreement and any of its terms or provisions, as well as the rights and duties of the parties hereunder, shall be interpreted and governed by the laws of the place of the project.

ARTICLE 14: LEGAL CONSTRUCTION

In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid or unenforceable in any respect, such invalidity or unenforceability shall not affect any other provision hereof. This Agreement shall be construed as if such invalid or unenforceable provision had never been contained herein.

ARTICLE 15: ENTIRE AGREEMENT

This Agreement supersedes any and all other agreements, either oral or in writing, between the parties relating to the subject matter of this Agreement and is the entire understanding and agreement related thereto. This Agreement may be amended by mutual consent of the parties in writing to be attached hereto and incorporated herein, executed by Cardno's and the Client's respective representatives.

October 22, 2019

The WLB Group, Inc.

Attn: Eric Weidinger
500 N. Beaver Street
Flagstaff, AZ 86001
Email: eweidinger@wlbgroup.com
Phone: 928-779-1500

**RE: Coconino Estates Improvements Phase 2 – Additional Scope
Flagstaff, Arizona
Subsurface Utility Engineering (SUE)–Scope of Services
Cardno Proposal No. 16104-19-0025**

Dear Mr. Weidinger:

Thank you for the opportunity to propose on this project. Our experience providing subsurface utility engineering for State DOTs, counties, municipalities, and various public works departments will enable us to successfully complete this utility investigation and meet the program and project goals. The combination of our resources and experience will provide you with the confidence that Cardno is the right choice to complete the project on time and on budget. For more information please visit www.cardno.com.

Our Scope of Services is further detailed in the project understanding section of this proposal. This proposal has been prepared for the Coconino Estates Improvements Phase 2- Additional Scope. We have provided you with a Time and Material Fee to complete the specific items described within the Scope of Services. We respectfully request any comments or questions you may have.

Thank you again for this opportunity. We are committed to giving you the quality and service that you expect from Cardno.

Sincerely,

Cardno, Inc.



James Mueller, P.E.
Project Manager
Phone: 602.977.8076
Email: james.mueller@cardno.com

PROJECT UNDERSTANDING

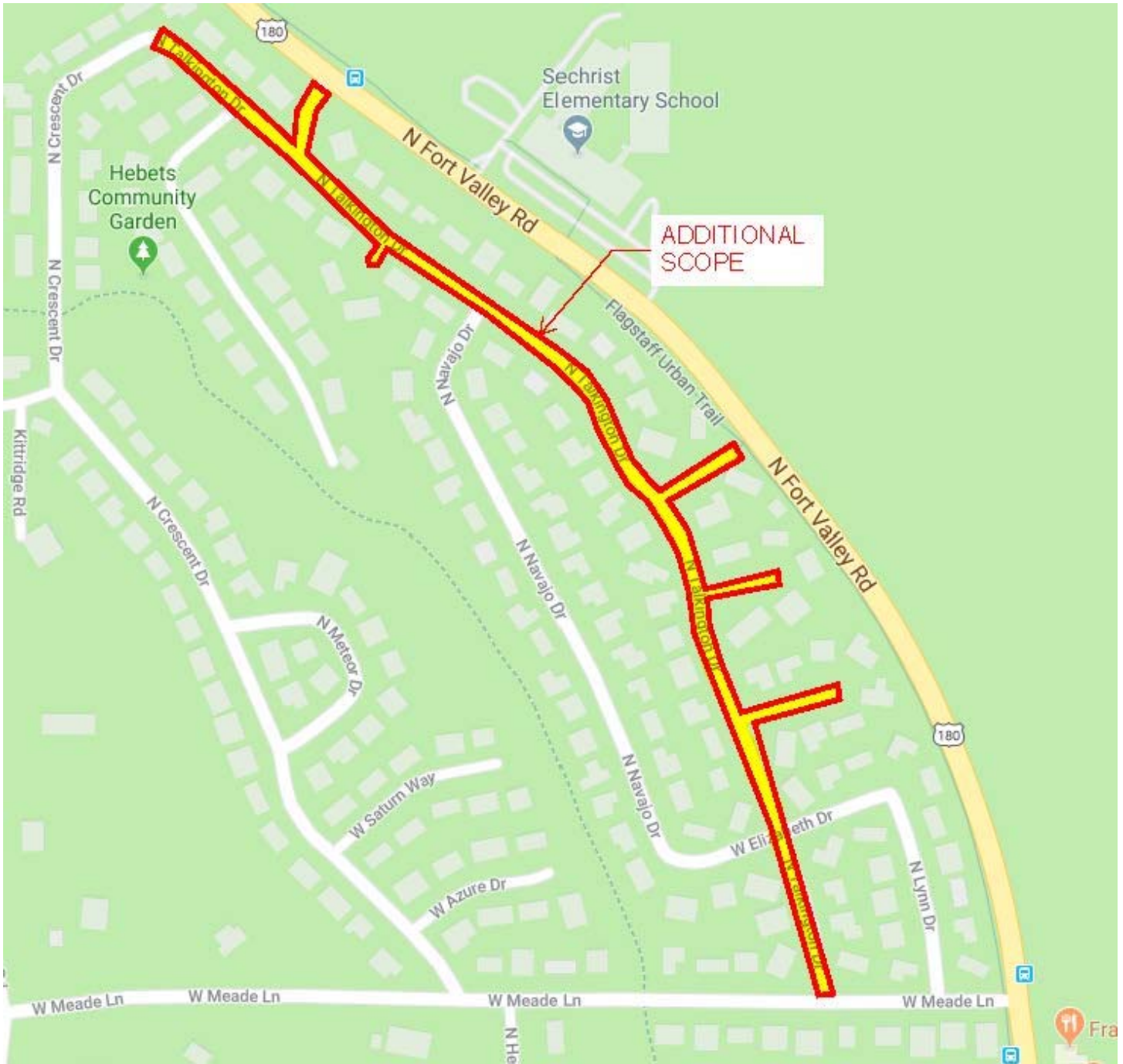
The Cardno team will complete ASCE 38 Quality Level D, C, B, & A Utility Mapping within the project area as defined below. The team will utilize the CI/ASCE 38 standard for collecting and depicting the existing utilities and build the highest quality utility map available. This process will include an iterative field investigation which will ultimately produce detailed drawings that are signed and sealed by a Professional Engineer in accordance with the requirements of the Standard.

Cardno's general workflow for SUE mapping is outlined below:

1. Perform records research (Quality Level D);
2. Perform survey of existing Utility Appurtenances (Quality Level C)
3. Perform geophysical investigation (Quality Level B designating);
4. Perform survey of utility markings placed by our designators;
5. Complete utility mapping with depictions as outlined in the ASCE 38 standard;
6. QA/QC of our investigative findings based on existing records, maps and as-built information;
7. Complete QLA Test Holes as requested by the design team;
8. Provide mapping of the completed utility investigation findings – signed and sealed by a licensed engineer.

LIMITS OF INVESTIGATION

- The utility investigation will cover the existing City of Flagstaff (COF) right of way of N. Talkington Drive from Crescent Drive to West Meade Lane. The investigation will also include the adjacent streets of Louise Way, Davis Way, Thelma Way and Hazel Way, as shown in the figure below.
- The results of utility investigation and any survey work performed in conjunction with the investigation will be tied to the project datum as specified by the WLB Group, Inc.



PROJECT APPROACH

The Cardno team will complete a SUE mapping investigation in accordance with the CI/ASCE Standard 38: *Standard Guideline for the Collection and Depiction of Existing Subsurface Utilities*. ASCE 38 provides a nationally recognized, standard guideline for SUE mapping. The quality level provides a professional opinion of the quality and reliability of the utility information. The four quality levels are as follows:

- **Quality Level D (QLD):** Record research of existing subsurface utilities within the project limits by contacting each utility owner and obtaining their available facility records. This process will substantiate necessary records that will be obtained and the mapping of untraceable (nonmetallic buried without trace wire) utilities that do not meet Quality Level C or B specifications. QLD mapping is based on information obtained from record drawings and includes utility type, ownership, size and material composition.
- **Quality Level C (QLC):** Inclusive of a QLD effort, the project team will provide QLC mapping of existing untraceable subsurface utilities by correlating surveyed surface evidence to the QLD utility records to obtain the utility location. QLC mapping includes utility type, ownership, size and material composition based on available record information.
- **Quality Level B (QLB):** Involves the use of QLC and QLD methods of utility investigation and the use of surface geophysical techniques under the direction of a Professional Engineer licensed in the State of Arizona to determine the existence and horizontal position of underground utilities. This activity is called "designating." The information obtained in this manner is surveyed to project control. Two-dimensional (2D) mapping information is obtained.
- **Quality Level A (QLA):** Involves the use of QLB, QLC and QLD methods of investigation, plus the use of minimally intrusive excavation methods at critical points to determine the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material and other characteristics. The excavation and data documentation activity is called Locating "excavation of test holes". It is the highest level of utility certainty presently available. When surveyed and mapped, precise plan and profile information is available for making final design decisions at the test hole locations.

Cardno's general approach is to perform a QLB investigation using all available geophysical means and methods to identify the location of the subsurface utilities within the project limits. Where QLB data is not able to be obtained, the utility will be shown at QLC or QLD depending on available information and surface features.

The following tasks outline in detail our approach to the services to be rendered.

SCOPE OF WORK

A Professional Engineer licensed in the State of Arizona (Consultant) shall oversee, document, stamp and seal a Subsurface Utility Engineering (SUE) investigation of the project area to determine existing utility conditions within the project limits. As part of the SUE investigation for this project the Consultant will work on the following tasks:

➤ **QLD Utility Records Research**

The Cardno team shall perform the following activities as part of their research effort on this project:

- Conduct a full reconnaissance and utility records research to aid in the identification of Utility Owners that may have facilities on, or be affected by, the SUE project.
- Collect all applicable utility facility records available through Utility Owner(s), such as one-call notification, service maps, as-built drawings, standard drawings, service plats, construction plans from prior projects, local government or Agency permit exhibit drawings, and oral histories gained through interviews with Utility Owner officials and authorities.
- Compile a list of all utility companies contacted for information. Note information received with contact information for each response and note non-response if applicable.
- Attempt to identify all known and unknown utilities, except as noted above, within the project area at QLB and depict those utilities at the actual achieved utility Quality Level.
- All documents collected and all utility company contacts (including contact info) will be provided to the client

➤ Perform QLC, QLB Investigation

The Cardno team will conduct the following:

- While conducting survey of the QLB designating marks as identified below, Cardno will survey existing visible surface utility features and correlate the information provided to the QLD utility records to obtain the utility location. This effort will update the information and mapping to QLC, and all data will be incorporated into the CAD file and final PDF deliverable.
- Utilize geophysical utility locating techniques to determine the true horizontal position of conductive utilities within the project area. The project team will provide QLB mapping of existing traceable (metallic or nonmetallic buried with trace wire) subsurface utilities utilizing a variety of geophysical locating equipment to detect, verify and designate the location of subsurface utilities from above ground. Once designated (horizontally positioned), verified utilities are marked using appropriate pink paint and flagging which is the standard industry color for temporary markings. This field information is then surveyed and mapped into a digitized CAD file compatible with the project design files.
- Cardno will utilize a full suite of geophysical equipment appropriate to existing site conditions for locating the type of utility being investigated. Utilities detected that were not identified by the records research will be termed “undocumented” and depicted on the plans as “unknown” utilities.
- Cardno will use a complimentary suite of geophysical tools in an attempt to determine the location of undocumented utilities but cannot guarantee finding all undocumented utilities. Electromagnetic depths will not be recorded during this investigation.
- As an additional step, Cardno will use inductive scanning techniques in critical areas to attempt to designate the presence of conductive undocumented utilities. QLA Test Holes may be necessary to confirm the existence of undocumented utilities in areas of potential conflicts.
- GPR NOTE: Cardno will conduct an investigation of the project site using Ground Penetrating Radar (GPR) equipment in an effort to detect larger non-metallic utilities. However, the degree of success of a GPR investigation is based entirely on the composition of the soils and the depth and scale of subsurface targets. Electrically non-conductive soils, such as quartz sands, typically allow for the study of phenomena to depths greater than 15 feet. Electrically conductive soils, such as clay, moist silt or saline soils, typically preclude the investigation of targets deeper than 3-6 feet. A determination of a maximum attainable depth of investigation requires on-site resistive site calibration of the GPR equipment. Subsequently, due to the unknown receptiveness of specific site soils to the passage of radar energy, conclusive results cannot be guaranteed from GPR.
- QLB depiction will be attempted on all mainline utilities included within Cardno's geophysical investigation, with the exception of sewer, storm drain, and possibly non-metallic water which will be depicted at QLC or QLD dependent upon existing physical appurtenances associated with these lines; utilities that cannot be designated at QLB but have existing physical appurtenances in the field will be depicted at QLC; utilities which cannot be designated at QLB and for which there are no visible physical appurtenances will be depicted at QLD per record.
- Locating and identifying individual utility services to homes and buildings will include water, sewer and natural gas only when they are serviced directly from the City of Flagstaff ROW. Underground storage tanks (USTs), septic fields, traffic loop systems and landscape irrigation are excluded.
- Invert information and, where possible, pipe size/material will be collected at Storm and Sewer Manholes as well as Storm Drain Catch Basins and Drop inlets, where accessible from the surface. The alignment of the sewer pipes will be shown on the drawing based on a combination of record information received, results of the invert investigation, surveyed MH's/CB's and professional judgment. If confined space entry is required to obtain information of offset or excessively deep pipes, extra costs will be incurred and will be discussed with the client in advance.
- Cardno will document top of nut elevations on water valves throughout the project limits. If valves are full of water or debris Cardno will notify the City and request having the valves box cleaned out for further investigation.

➤ Perform Overhead Utility Survey

The Cardno team will research and document overhead utilities within the project limits as follows:

- Pole locations; Ownership and type of utility if available; All data will be incorporated into the CAD drawing and final PDF deliverable.

➤ Perform CCTV Investigation

The Cardno team will conduct a CCTV investigation of all sanitary sewer lines throughout the project limits:

- The Cardno team will complete a conventional CCTV investigation, daily reports will follow the NASSCO format and standards.
- All sewer laterals encountered during the mainline investigation will also be investigated using CCTV via side launching sondes and video capabilities. The laterals will also be located using a sonde attached to the side launching CCTV apparatus, such that the horizontal position can be determined and mapped/painted on the ground surface. Service laterals will be marked just past the back of curb or back of sidewalk in order to limit disturbance to adjacent residential lots. The field markings will then be surveyed and processed into the project utility base file.
- CCTV work will be completed and a QA/QC review of all CCTV deliverables against the SUE mapping will be completed.

➤ Perform QLA Test Holes (Potholes) per the QLA ASCE 38 Standard

The Cardno team will complete 10 test holes (assumed) on this project at identified conflict locations as follows:

- Cardno can assist the client in determining the critical points based on their design to identify the test hole locations along with an accompanying test hole number.
- Will provide traffic control plans and protection in accordance with the City of Flagstaff specifications and permit requirements. This item will be subcontracted to a local certified traffic control company if required, and permits for all work are assumed to be waived by the City.
- Cardno will obtain required permits (no cost permits), contact state one-call notification system (Blue Stake), and submit one-call tickets prior to excavation.
- Cardno will use the compressed air & vacuum excavation method at critical points to measure and record the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material and other characteristics. Standard hole size is 12"x12" hole with a depth up to 6 feet deep.
- Backfill of excavated test holes will be in accordance with City of Flagstaff standards.
- The test hole information will be documented on the Cardno Testhole Data Report and then surveyed. The client will receive the reports with the surveyed test hole locations outlined. The testhole reports will be signed and sealed by an Arizona Registered Professional Engineer (licensed with the AZ Board of Technical Registration).

Notes:

- If additional holes are required over and above the 10 holes scoped for this project, they will be done so on a separate task for a separate fee.
- Prior to beginning the QLA test hole work, Cardno will need to receive a list of all requested test holes with accompanying Northing and Easting coordinates
- Each test hole will be assigned a unique ID number and will be marked for survey.
- If rock or concrete is encountered during the excavation and Cardno is not able to excavate through our normal excavation procedures, Client will be immediately notified of the field conditions. Excavation in rock or excavation to a depth greater than 12 feet is considered beyond the scope of this proposal and can be estimated for the Client on a case by case basis.
- If test holes are located in sidewalk or concrete, there will be a per hole charge of \$125 per hole to excavate, jackhammer, and remove the existing concrete on the site, saw cut, and conduct 12" x 12" concrete restoration using bagged pre-mixed concrete.
- Dry test holes over QL D or C utilities will be billed at a rate equal of the test hole rate. Extra wide test holes (larger than 18 inches in width) will be billed at 150% of the test hole rate. Any hole excavated over 6' in depth will be charged \$75 per foot.
- Test Holes in which two utilities are found at a separation of more than 18" on center will be billed as two separate test holes. Test Holes which are requested at locations of the crossing of two utilities, will be billed as two separate test holes when the overall hole width exceeds 15".

DELIVERABLES

- SUE plan set and CAD drawing showing the location of the utilities within the project area. The drawing will depict utilities within the investigation area at the achieved ASCE 38 Quality Level and a 24" x 36" PDF plan set will be signed and stamped by a licensed Professional Engineer.
- Pertinent QLA utility test hole data will be presented in scanned electronic format on our standard "Test Hole Data Summary" and individual "Test Hole Data Report" forms sealed by an Arizona Registered Professional Engineer (licensed with the AZ Board of Technical Registration) that includes the depth, horizontal coordinates, vertical elevation, size, and material composition of the utility line exposed at each test hole.
- Cardno will provide the client with all documents collected during the QLD utility records research efforts
- Cardno will provide the client with the list of all utility companies (including contact information) contacted during the SUE investigation

ASSUMPTIONS

- The WLB Group, Inc. will provide the following:
 - Existing topographic survey which includes sewer manhole lids only as a QC check
 - Survey control
 - Existing right-of-way mapping
 - A list of all active water meters servicing properties throughout the project limits
 - List of all requested test holes with accompanying N&E coordinates
 - Any previously collected utility records, points of contact, as-built plans, and electronic files to be made available for Cardno's use during the utility investigation.
 - ROW and/or boundary work will not be completed by Cardno as part of this scope and fee. Any ROW or boundary line work that Cardno is asked to incorporate into our plans will need to be provided to Cardno for its use. If this information is unable to be provided, it will not be included or shown on the SUE utility plans prepared and submitted by Cardno.
 - This Scope of Services has been detailed to ensure we are providing the services desired and agreed to by the client and Cardno. Services not specifically listed are assumed to be excluded from Cardno's scope.
- Other assumptions:
 - City of Flagstaff will waive all permit fees and therefore have been assumed at zero cost
 - Cleaning of sanitary sewer lines in order to complete the CCTV investigation is not included in this proposal. If sanitary sewer lines require cleaning, Cardno will reach out to the City of Flagstaff and request this work be completed by the City. If Cardno is required to conduct this cleaning, a change order will be required and it will be completed under a separate scope and fee.

PROJECT ESTIMATE

For the services outlined Cardno proposes compensation for the estimated fee identified below. The cost estimate below assumes that the original scope for Phase 2 and the additional scope detailed herein will start simultaneously. If the scoped areas are part of separate timelines, additional mobilization costs may be added on a separate scope and fee.



**Coconino Estates Phase 2 -Additional Scope
 Subsurface Utility Engineering
 Cardno Proposal**

PROJECT ESTIMATE		
SUE Quality Level "D, C & B" Designating/Mapping		
*Quality Level "D, C, & B" Designating Subsurface Utilities	40 hours @ \$280.00 per hour	\$11,200.00
Subtotal		\$11,200.00
SUE Quality Level "A" Test Hole Excavation		
*Quality Level "A" Test Hole Estimate	10 holes @ \$630.00 per hole	\$6,300.00
*Contingency	Extra Depth/Width and/or Concrete Work	\$600.00
Subtotal		\$6,900.00
CCTV Investigation		
*CCTV Investigation of Sanitary Sewer	Lump Sum	\$2,800.00
*CCTV Investigation of Sanitary Sewer Laterals	60 Laterals @ \$78.00 per lateral	\$4,680.00
Subtotal		\$7,480.00
Professional Services		
*Project Manager	2 hours @ \$157.00 per hour	\$314.00
*Project Engineer	8 hours @ \$132.00 per hour	\$1,056.00
*SUE Supervisor	12 hours @ \$120.00 per hour	\$1,440.00
*CAD Technician	28 hours @ \$96.00 per hour	\$2,688.00
*Admin	2 hours @ \$69.00 per hour	\$138.00
Subtotal		\$5,636.00
Misc., Permits & Maintenance of Traffic		
*Permits: (assumes "zero" cost)	No Cost on Project	\$0.00
*Maintenance of Traffic Set-ups, Traffic Plan Preparation & Traffic Plan Permit Submittals	Billed Cost + 10%	\$2,000.00
*Slurry Backfill (estimated)	Estimated (Billed Cost + 10%)	\$1,200.00
Subtotal		\$3,200.00
TOTAL		\$34,416.00

* Proposal estimate only, the cost may vary plus or minus do to unknown field conditions & municipality requirements

Note 1: Utility designating rate includes: 2 man designating crew, survey, trucks and equipment. Only the amount designated in the field will be billed and the fee above is estimated only.

Note 2: No permit fees are estimated due to this being a City project. If permits are required they will be billed at cost + 10%

Cardno will not exceed the estimated fee without prior authorization from Client. **An invoice will be prepared upon completion for the actual work completed up to the estimated budget amount.** We appreciate this opportunity to provide professional SUE and Surveying services for this project. Should you have any questions or require additional information, please do not hesitate to call.

Sincerely,

Cardno, Inc.



James Mueller, P.E.
 Project Manager
 Phone: 602.977.8076
 Email: james.mueller@cardno.com

AGREEMENT

This Agreement sets forth the following terms and conditions for retention of **Cardno, Inc.** ("**Cardno**") to provide consulting services to **The WLB Group, Inc.** (hereinafter referred to as "**CLIENT**") in connection with the subject project.

This Agreement consists of the following identified subparts, all of which are attached hereto and by this reference incorporated herein: **SCOPE OF SERVICES, FEE SCHEDULE and GENERAL CONDITIONS.**

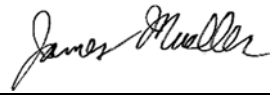
The basis of Cardno's retention is described in the attached SCOPE OF SERVICES, COMPENSATION and GENERAL CONDITIONS. Client acknowledges they have read and agree to the Scope of Services, Fee Schedule and General Conditions as provided in the General Conditions. Any requested services which are in addition to the attached Scope of Services will be invoiced according to Cardno's standard schedule of rates or included in a contract addendum.

THIS IS A LEGALLY BINDING AGREEMENT APPROVED AND AGREED TO:

Approved for: *The WLB Group, Inc.*

Approved for: *Cardno Inc.*

Signed: _____

Signed:  _____

Name: _____

Name: James Mueller

Title: _____

Title: Project Manager

Date: _____

Date: 10/22/19

NOW, THEREFORE, Cardno shall perform the services outlined in this Agreement for the stated fee in accordance with these terms and conditions:

ARTICLE 1: ACCESS TO SITE (if applicable)

Upon execution of this Agreement, the Client represents that they have secured legal rights to access the property and authorizes Cardno staff to access the site for activities necessary for the performance of the services.

ARTICLE 2: PAYMENT

- a. Cardno will submit invoices to Client monthly for services provided during the previous month. Each invoice will identify the project name and cost of the services provided. Cardno's rates are subject to increase annually.
- b. Within thirty (30) days following Client's receipt of each invoice rendered by Cardno pursuant to this Agreement, Client will pay the amount invoiced. Retainers/deposits shall be credited on the final invoice. If Client disputes any portion of an invoice; Client will notify Cardno in writing of such disputed items within 10 days of invoice date. In the event any invoice has not been paid in full within sixty (60) days of the invoice date, Cardno may immediately suspend all or any portion of the Services hereunder indefinitely, pending payment in full of such invoice(s).
- c. Interest will accrue on accounts overdue by 30 days at the lesser of 1.5 percent per month (18 percent per annum) or the maximum legal rate of interest allowable. Collection fees and any additional legal costs associated with the recovery of outstanding payments may also be applied.

ARTICLE 3: INDEMNIFICATION

Cardno and Client shall indemnify and hold harmless each other from and against damages, liabilities, costs and expenses, including but not limited to reimbursement of reasonable attorney fees arising out of damages or injuries to persons or property to the extent caused by the negligence, gross negligence or willful misconduct by the other party or anyone acting under its direction or control or on its behalf in the course of its performance under this Agreement; provided that each party's aforesaid indemnity agreement shall not be applicable to any liability based upon willful misconduct or negligence of the other party. In no event shall either party be responsible for any form of consequential damages, including, but not limited to loss of sales, loss of profits, and attorney fees thereon. For purposes of this Paragraph, the duty to indemnify does not include the duty to pay for or to provide an up-front defense against unproven claims or allegations. Where any claim results from the joint negligence, gross negligence or willful misconduct by Client and Cardno, the amount of such damage for which Client or Cardno is liable as indemnitor under this Paragraph shall equal the proportionate part that the amount of such claim attributable to such indemnitor's negligence, gross negligence or willful misconduct bears to the amount of the total claim attributable to the joint negligence, gross negligence or willful misconduct at issue.

ARTICLE 4: LIMITATION OF LIABILITIES

Notwithstanding any other provision in this Agreement, the Client agrees to strictly limit Cardno's liability under this Agreement or arising from the performance or non-performance of the Services under any theory of law, including but not limited to claims for negligence, negligent misrepresentation and breach of contract, to the lesser of five times the fees paid to Cardno for the Services or the maximum of insurance provided. No claim may be brought against Cardno in contract or tort more than two (2) years after the cause of action arose. Any claim, suit, demand or action brought under this Agreement shall be directed and/or asserted only against Cardno and not against any of Cardno's employees, shareholders, officers or directors. Cardno's liability with respect to any claims arising out of this Agreement shall be limited as provided herein to direct damages arising out of the performance of the Services and Cardno shall not be held responsible or liable whatsoever for any consequential damages, injury or damage incurred by the actions or inactions of the Client, including but not limited to claims for loss of use, loss of profits and loss of markets.

ARTICLE 5: TERMINATION

This Agreement will continue in effect until terminated by either party upon thirty (30) days written notice to the other party. In the event of any termination, Cardno shall be paid for all services rendered and reimbursables incurred through the date of notice of termination. In the event of termination, the Client shall pay all additional costs reasonably related to termination of the project and a proportionate amount of the consideration hereunder commensurate with the portion of the project accomplished.

ARTICLE 6: FORCE MARJEURE

Any suspension, temporary or permanent, in the performance of this Agreement caused by any of the following events and without fault or negligence on the part of the defaulting party shall not constitute a breach of contract: labor strikes, riots, war, acts of governmental authorities, unusually severe weather conditions or other natural catastrophic events, or any other similar event beyond the reasonable control or contemplation of either party.

ARTICLE 7: ASSIGNMENT

Neither party to this Agreement shall, without the prior written consent, of the other party, which shall not be unreasonably withheld, assign the benefit or in any way transfer any claim or obligation under this Agreement or any part hereof. This Agreement shall inure to the benefit of and be binding upon the parties hereto, and except as otherwise provided herein, upon their executors, administrators, successors, and assigns.

ARTICLE 8: OWNERSHIP OF DOCUMENTS

All report documents produced by Cardno under this Agreement shall be made available to the Client upon receipt of full payment for services rendered. Cardno shall retain ownership of all field notes, computer files and project files used to produce the work products and may make copies of all work products.

ARTICLE 9: CONFIDENTIALITY

Cardno will maintain in confidence the nature of its Services, as well as all information made available to Cardno by Client during the term of this Agreement or resulting from Services performed by Cardno under this Agreement. The confidential obligation imposed on Cardno by Paragraph 9, however, will not extend to any such information insofar as, and from such time as Cardno may disclose (i) as required by law, (ii) pursuant to court order, (iii) to its subcontractors, agents or other representatives as may be reasonably necessary to perform its services hereunder (iv) for the purpose of prosecuting or defending any litigation, or (v) Cardno can show by reasonable proof has been in the public domain. Cardno agrees to use information intended to be kept confidential under this Paragraph 9 solely to provide its Services.

ARTICLE 10: NOTICES

Any notices or written statements hereunder shall be deemed to have been given when mailed by certified or registered mail or via email, with receipt of reply, to the party entitled thereto at its address noted at the top of this Agreement or at such other latest address as it may designate in writing to the other party for this purpose.

ARTICLE 11: NON-SOLICITATION

Neither party shall knowingly solicit, recruit, hire or otherwise employ or retain the employees of the other working under this Agreement during the term of this Agreement and for one (1) year following the termination or expiration of this Agreement without the prior written consent of the other party.

ARTICLE 12: WAIVER

Failure by one party to notify the other party of a breach of any provision of this Agreement shall not constitute a waiver of any continuing breach. Failure by one party to enforce any of its rights under this Agreement shall not constitute a waiver of those rights. The waiver by either party of a breach or violation of any provision of this Agreement shall not operate as, or be construed to be, a waiver of any subsequent breach of the same or any other provision hereof.

ARTICLE 13: GOVERNING LAW

The validity of this Agreement and any of its terms or provisions, as well as the rights and duties of the parties hereunder, shall be interpreted and governed by the laws of the place of the project.

ARTICLE 14: LEGAL CONSTRUCTION

In case any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid or unenforceable in any respect, such invalidity or unenforceability shall not affect any other provision hereof. This Agreement shall be construed as if such invalid or unenforceable provision had never been contained herein.

ARTICLE 15: ENTIRE AGREEMENT

This Agreement supersedes any and all other agreements, either oral or in writing, between the parties relating to the subject matter of this Agreement and is the entire understanding and agreement related thereto. This Agreement may be amended by mutual consent of the parties in writing to be attached hereto and incorporated herein, executed by Cardno's and the Client's respective representatives.

FEE PROPOSAL WORKSHEET - Coconino Estates Phase II

Crescent and Navajo (RR&SS)

CLIENT: COF - Eli Reisner
DATE: 10/23/2019

BY: EW

Task Description	Principal \$170	Senior Project Manager \$140	Project Manager PE / RLA / RLS \$130	Senior Project Engineer / Landscape \$115	Project Engineer / Landscape Arch. / \$110	Staff Design Engineer / Landscape Arch. / \$105	Senior CADD Operator \$95	Senior Technician \$90	Design Technician \$85	Technician / CADD Drafter \$80	Draftsperson / Assistant Technician \$75	Admin/ Support \$60	Three Man Survey Crew \$180	Two Man Survey Crew \$160	One Man Survey Crew \$135	Total Labor Hours	Total Labor Cost	Expenses		Sub Consultant Cost	TOTAL PROJECT COST
Task 1 - Data Collection	13	-	53	-	-	68	-	-	-	-	-	4	-	-	-	138	\$16,480	\$	100		\$16,580
Task 1A - Results of Survey Exhibit	4	-	13	-	-	28	-	-	-	-	-	-	-	-	-	45	\$5,310	\$	-		\$5,310
Prepare Results of Survey Exhibit	1	-	3	-	-	8	-	-	-	-	-	-	-	-	-	12	1,400	\$	-		
Merge Topography and Utility Basemaps and QC	2	-	8	-	-	16	-	-	-	-	-	-	-	-	-	26	3,060	\$	-		
QA/QC Reviews	1	-	2	-	-	4	-	-	-	-	-	-	-	-	-	7	850	\$	-		
Task 1B - Speedie, JE Fuller and Cardno Subconsultants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	\$0	\$	-	\$ 61,360	\$61,360
Speedie and Associates Geotechnical	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	\$ 8,800	
Cardno Sub Surface Utility Investigation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	\$ 49,370	
JE Fuller 404 Mapping	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	\$ 3,190	
Task 1C - Updated Scoping Plan	9	-	40	-	-	40	-	-	-	-	-	4	-	-	-	93	\$11,170	\$	-		\$11,170
Determine Roadway Section for layout	1	-	8	-	-	8	-	-	-	-	-	-	-	-	-	9	1,210	\$	-		
Determine Pavement Section with the City of Flagstaff	1	-	4	-	-	4	-	-	-	-	-	-	-	-	-	5	690	\$	-		
Determine Limits of Mill and Overlay and Full Depth	1	-	4	-	-	4	-	-	-	-	-	-	-	-	-	5	690	\$	-		
Determine Water and Sewer Line Alignments	2	-	8	-	-	8	-	-	-	-	-	-	-	-	-	10	1,380	\$	-		
Prepare Updated Scoping Plan (6 to 7 Sheets)	4	-	16	-	-	40	-	-	-	-	-	4	-	-	-	64	7,200	\$	-		
Task 2 - Concept 30% Plans	15	8	116	-	-	238	-	-	-	84	-	2	-	-	-	463	\$50,580	\$	300		\$50,880
Comment Resolution Updated Scoping Plan	2	-	4	-	-	4	-	-	-	-	-	-	-	-	-	10	1,280	\$	-		
Coordinate COF, Cardno Pothole locations - Produce Exhibit	-	-	4	-	-	4	-	-	-	8	-	-	-	-	-	12	1,160	\$	-		
Stake Holder Coordination	1	-	2	-	-	2	-	-	-	2	-	-	-	-	-	5	640	\$	-		
Bi Weekly Meetings (3 Meeting)	3	-	6	-	-	6	-	-	-	6	-	-	-	-	-	15	1,920	\$	-		
Compile Meeting Notes/Emails into a Design Concept Report	2	-	12	-	-	40	-	-	-	40	-	-	-	-	-	54	6,100	\$	-		
Cover/Notes/Details (6)	-	-	6	-	-	18	-	-	-	18	-	-	-	-	-	24	2,670	\$	-		
Control (1)	1	-	2	-	-	8	-	-	-	8	-	-	-	-	-	11	1,270	\$	-		
Water Index (1)	-	-	2	-	-	8	-	-	-	4	-	-	-	-	-	14	1,420	\$	-		
Sewer Index (1)	-	-	2	-	-	8	-	-	-	4	-	-	-	-	-	14	1,420	\$	-		
Street Removals/Grading&Drainage Plan - Triple View Profile (8)	2	-	32	-	-	64	-	-	-	24	-	-	-	-	-	122	13,140	\$	-		
Utility Plan/Profile - Locate Conflicts (9)	1	-	24	-	-	64	-	-	-	24	-	-	-	-	-	113	11,930	\$	-		
(2) ENG EST - (1) Remove and Replace (1) New Additions	1	-	8	-	-	8	-	-	-	8	-	-	-	-	-	25	2,690	\$	-		
QA/QC	2	8	8	-	-	8	-	-	-	8	-	2	-	-	-	36	4,100	\$	-		
Submittal to City	-	-	4	-	-	4	-	-	-	4	-	-	-	-	-	8	840	\$	-		
Task 3 - 60% Design Documents	24	8	126	-	-	243	-	-	-	136	-	2	-	-	-	539	\$58,095	\$	300		\$58,395
Review 30% Comments VE Options	4	-	4	-	-	4	-	-	-	4	-	-	-	-	-	12	1,620	\$	-		
Cover/Notes/Details (7)	1	-	12	-	-	21	-	-	-	16	-	-	-	-	-	50	5,215	\$	-		
Control (1)	1	-	2	-	-	6	-	-	-	4	-	-	-	-	-	13	1,380	\$	-		
Water Index (1)	1	-	4	-	-	16	-	-	-	12	-	-	-	-	-	33	3,330	\$	-		
Sewer Index (1)	1	-	4	-	-	16	-	-	-	12	-	-	-	-	-	33	3,330	\$	-		
Street Removals/Grading&Drainage Plan - Triple View Profile (8)	4	-	32	-	-	64	-	-	-	24	-	-	-	-	-	124	13,480	\$	-		
Utility Plan/Profile (9)	4	-	32	-	-	64	-	-	-	24	-	-	-	-	-	124	13,480	\$	-		
SWPPP (2)	2	-	2	-	-	2	-	-	-	16	-	-	-	-	-	18	1,540	\$	-		
Prepare Preliminary Drainage Memo	2	-	8	-	-	32	-	-	-	8	-	2	-	-	-	52	5,500	\$	-		
Bi Weekly Meetings (3)	1	-	4	-	-	4	-	-	-	2	-	-	-	-	-	7	900	\$	-		
Stake Holder Coordination Continuation	1	-	2	-	-	2	-	-	-	2	-	-	-	-	-	5	640	\$	-		
(2) ENG EST - (1) Remove and Replace (1) New Additions	2	-	8	-	-	8	-	-	-	8	-	-	-	-	-	26	2,860	\$	-		
QA/QC	2	8	8	-	-	8	-	-	-	8	-	-	-	-	-	34	3,980	\$	-		
Submittal to City	-	-	4	-	-	4	-	-	-	4	-	-	-	-	-	8	840	\$	-		
Task 4 - 90% Plans and Specifications	25	16	120	-	-	248	-	-	-	108	-	2	-	-	-	519	\$56,890	\$	500		\$57,390
Review 60% Comments VE Options	4	-	4	-	-	4	-	-	-	4	-	-	-	-	-	12	1,620	\$	-		
Cover/Notes/Details/Ramp Details	1	-	6	-	-	24	-	-	-	16	-	-	-	-	-	47	4,750	\$	-		
Control (1)	1	-	1	-	-	2	-	-	-	4	-	-	-	-	-	7	660	\$	-		
Water Index (1)	1	-	2	-	-	8	-	-	-	4	-	-	-	-	-	15	1,590	\$	-		
Sewer Index (1)	1	-	2	-	-	8	-	-	-	4	-	-	-	-	-	15	1,590	\$	-		
Street Removals/Grading&Drainage Plan - Triple View Profile (8)	4	-	24	-	-	72	-	-	-	16	-	-	-	-	-	116	12,640	\$	-		
Utility Plan/Profile (9)	4	-	24	-	-	72	-	-	-	16	-	-	-	-	-	116	12,640	\$	-		
SWPPP (2)	2	-	2	-	-	4	-	-	-	8	-	-	-	-	-	16	1,580	\$	-		
Prepare Final Drainage Memo	1	-	8	-	-	16	-	-	-	8	-	2	-	-	-	35	3,650	\$	-		
Draft of Special Provisions	2	-	4	-	-	4	-	-	-	4	-	-	-	-	-	18	2,220	\$	-		
Bi Weekly Meetings (3)	2	-	4	-	-	4	-	-	-	4	-	-	-	-	-	10	1,280	\$	-		
Stake Holder Coordination Continuation	1	-	4	-	-	4	-	-	-	2	-	-	-	-	-	6	730	\$	-		
(2) ENG EST - (1) Remove and Replace (1) New Additions	1	-	8	-	-	8	-	-	-	8	-	-	-	-	-	25	2,690	\$	-		
QA/QC	4	16	16	-	-	16	-	-	-	16	-	-	-	-	-	68	7,960	\$	-		
Submittal to City	-	-	4	-	-	4	-	-	-	4	-	-	-	-	-	8	840	\$	-		
Submit to Franchise Utilities	-	-	1	-	-	4	-	-	-	4	-	-	-	-	-	5	450	\$	-		
Task 4A - ADEQ Submittal	6	4	24	-	-	40	-	-	-	32	-	-	-	-	-	106	\$11,460	\$	-		\$11,460
Engineer's Design Report Waterline	2	2	8	-	-	16	-	-	-	8	-	-	-	-	-	36	3,980	\$	-		
Engineer's Design Report Sewer line	2	2	8	-	-	24	-	-	-	8	-	-	-	-	-	44	4,820	\$	-		
ADEQ Submittal for Approval Water	1	-	4	-	-	4	-	-	-	4	-	-	-	-	-	13	1,330	\$	-		
ADEQ Submittal for Approval Sewer	1	-	4	-	-	4	-	-	-	4	-	-	-	-	-	13	1,330	\$	-		
Task 5 - 100% Plans and Specifications	8	8	53	-	-	74	-	-	-	38	-	-	-	-	-	181	\$20,180	\$	500		\$20,680
Review 90% Comments VE Options	2	-	2	-	-	2	-	-	-	2	-	-	-	-	-	6	810	\$	-		
Revise Plans	2	-	24	-	-	40	-	-	-	32	-	-	-	-	-	98	10,220	\$	-		
Revise Drainage Memo	2	-	2	-	-	8	-	-	-	8	-	-	-	-	-	10	1,100	\$	-		
Revise Specifications	2	-	4	-	-	4	-	-	-	4	-	-	-	-	-	10	1,280	\$	-		
ADEQ Comment Revisions for Approval Water	1	-	4	-	-	8	-	-	-	8	-	-	-	-	-	13	1,530	\$	-		
ADEQ Comment Revisions for Approval Sewer	1	-	4	-	-	8	-	-	-	8	-	-	-	-	-	13	1,530	\$	-		

