KEITH
Engineering Inspired Design.

# "Exhibit A"

## WORK AUTHORIZATION PURSUANT TO THE AGREEMENT FOR CIVIL ENGINEERING SERVICES BETWEEN THE CITY OF POMPANO BEACH AND KEITH AND ASSOCIATES, INC. (KEITH)

January 26, 2024

WORK AUTHORIZATION NO. #11

PROJECT NO. (CITY) 12001.11 (KEITH)

TITLE: Drainage Improvements at US1 and NE 14th St

This work authorization is pursuant to the Agreement for Civil Engineering Services between the City of Pompano Beach and KEITH, approved by City Ordinance #2021-54 passed and adopted on May 03, 2021.

**PROJECT**

The project involves the preparations of engineering plans for the drainage improvements in the Avalon Gardens (west of 26th Terrace) and Harbor Village (east of 26th Terrace) area. This project will be based on the City of Pompano Beach Stormwater Master Plan Study Area #8 in the City's 2013 Stormwater Master Plan prepared by Chen Moore and Associates. The project drainage area is approximately 60 acres described in the attached project limits, Exhibit 1. The project limits are approximately, SR A1A (to the west) NE 14$^{th}$ St (to the north), NE 12$^{th}$ St (to the south) and NE 27$^{th}$ Way (to the east) and primarily consists of residential properties. Pipe sizing will be confirmed with modeling software to ensure the recommended pipe sizes are correct. Proposed improvements will use existing city-owned outfall systems within the project area where feasible and evaluate upsizing these systems. Survey and Utility Locates will be done to confirm all crossings and tie in points of the drainage system. Services provided by KEITH will include surveying, utility locates services, utility test holes, geotechnical engineering services (by others), engineering design, permitting and bidding services.

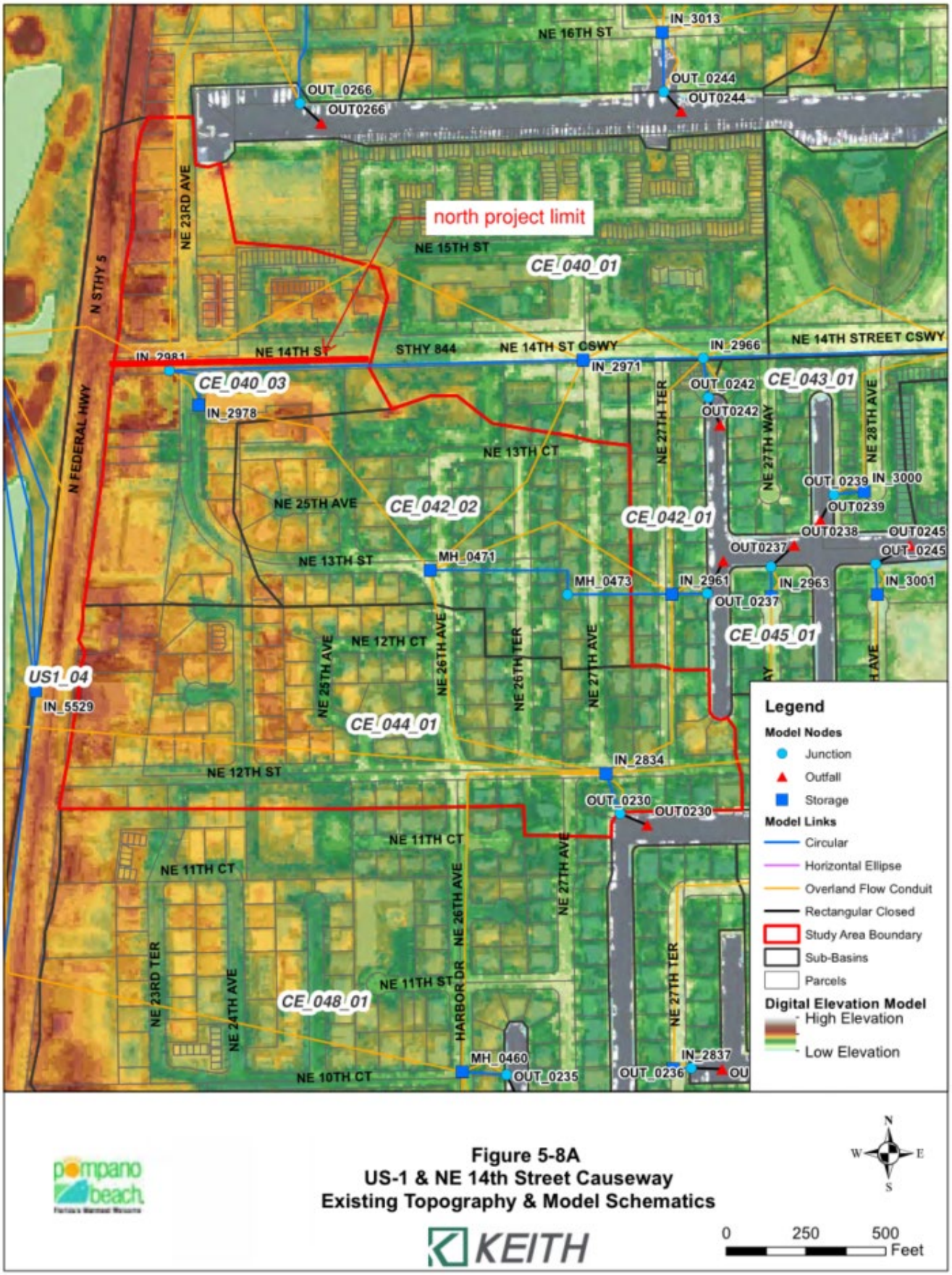


**Figure 5-8A**
**US-1 & NE 14th Street Causeway**
**Existing Topography & Model Schematics**

## SCOPE OF SERVICES

### Survey Services

**Task 001 Topographic Survey**

KEITH will prepare a Topographic Survey of portions of the Avalon Gardens (west of 26th Terrace) and Harbor Village East of 26th Terrace community. The survey will include all roadways in the area bounded by NE 12th St to the south, State Road A1A to the west, NE 14th St to the north, and NE 27th Way the east. The survey will extend five (5) feet beyond the existing right-of-way lines. The survey of Harbor Drive will be from the west of road to the east right-of-way line. The extreme north end of NE 14t St Causeway, west of SR A1A, will be included for only the existing drainage structures.

The Topographic Survey areas will include all surface features, such as roadways, striping, sidewalks, driveways, surface utilities, signs, mailboxes, etc. Trees will be located and noted by trunk size and common name. Storm and Sanitary Sewer structures will be noted with invert elevation, size, material and direction. Elevations will be noted at an interval of approximately 50 feet, including intermediate changes in grade.

A parcel map of the area will be created along with the existing right-of-way lines. Sub-surface utility designations (paint/flags), as provided by the SUE division, will be located and shown on the survey. Up to 20 test holes will be located, elevated and included on the survey.

The survey will be referenced to the Florida State Plane Coordinate System (NAD83/11) and the North American Vertical Datum of 1988 (NAVD88).

**The Lump Sum Fee…….$55,500.00**

### Subsurface Utility Engineering (SUE) Services

**Task 002 Location Services - (Quality Level 'A')**
*(Vacuum Excavations)*

KEITH will perform up to (20) test holes at specific sites requested by the design engineer. Test holes will be utilized to expose utilities to minimize any potential for damage. Test holes performed will be of minimum size (usually 1' by 1'). Backfill of test holes will be performed utilizing the removed material, if suitable. Areas will be restored back as close as possible to their original condition. Installation of an identifiable above ground marker will be performed at each test hole location. Field markers will consist of a nail and disk in asphalt, or an iron rod and cap with survey stake in grassed areas. Test holes performed in the street will be patched using cold patch. The test hole number and utility will be identified on the ground or on the stake, as appropriate. A test hole summary report will be created providing coordinates, depth of cover, type, size and material if applicable.

**The Lump Sum Labor Cost for this task is…… $6,000.00**
**The Lump Sum Test Holes (20) Cost for this task is……$9,000.00**

**The Total Lump Sum Fee……..……$15,000.00**

Technical Limitations -

*Services will be provided with due diligence and in a manner consistent with standards of the subsurface utility locating industry. Every reasonable effort will be made to locate all utility systems of interest whether indicated on record plans available to us or not. However, no guarantee can be made that all existing utility systems can be detected, located or exposed. It may not be possible to detect utilities*

*without prior knowledge, such as systems that are not depicted on record prints available to us.*

*Typically, the horizontal location effort will include electromagnetic induction, power source detection, and ground penetrating radar (GPR). Electromagnetic induction is a method in which a transmitted signal is applied to a metallic target. If the target is metallic and unbroken, the target can be traced and a receiver at the surface is used to detect the transmitted signal. If the signal cannot be applied directly to the target, induction may be produced from the surface. In this scenario bleed-off of the transmitted signal to an adjacent facility is possible, sometimes resulting in erroneous information. PVC, HDPE, concrete pipe and other non-metallic facilities cannot be located by electromagnetic methods.*

*Power source detection is a technique used to locate naturally occurring magnetic fields that exist around cables while generating a signal (electric, telephone, CATV for example). Ground penetrating radar (GPR) is available to assist in locating non-metallic utilities and other facilities that are unidentifiable using traditional electromagnetic techniques. The accuracy of these techniques is subject to the limitation of the available technology and certain factors and field conditions beyond our control, such as the size, depth and conductivity of the target, the site conditions and access, soil conditions, depth to water table and the existence of adjacent buried materials and debris.*

*The targeting of subsurface utilities, although highly reliable, is expressly understood to represent an approximate location of the facility marked on the ground surface. Facilities located from the surface are usually found within two feet of the surface mark. Once a possible facility has been located from the surface, vacuum excavation services should be used to visually verify and to provide the accurate horizontal location and vertical measurements (a test hole).*

*Vacuum excavation techniques are used to provide a cost-effective service that causes minimal disturbance to the site, the utility, vehicle traffic, and is acceptable to the permitting agencies. The size of the test hole excavation is kept to a minimum, in most cases the nominal size of a test hole is 8" x 8". This service represents the best available data on subsurface utilities given a cost-effective investigation using air/vacuum excavation. Visual verification in the test hole below the water table is not possible.*

*An air lance probe can be used in these instances to a reasonable depth of approximately 6 feet, although results to greater depths may be possible. The bottom of the utility pipe and conduit is sometimes not directly available and, in most cases, can be derived from the crown of the pipe and the pipe diameter.*

*Pipes with a diameter of 16" or less can usually be determined by exposing a potion or the entire pipe as needed. If pipe diameter is critical on pipe facilities greater than 16", additional test holes may be required to obtain both edges. The bottom depth of multiple conduit and encased duct banks is determined by excavating down one edge of the utility. Additional test holes are needed to accurately document edges, configuration and top and bottom depths.*

*Conditions under multiple or encased duct bank facilities cannot be excavated and therefore the existence of another facility cannot be confirmed. It is important to remember that the bottom edge of the facility may not represent its lowest point, and the shape or configuration of the facility may not be the same on both sides. Locating underground utilities is not an exact science.*

*The reporting of a negative result (no facility found) should not be used as a positive determination that the subject area is clear of all facilities or that the facility does not exist.*

*CLIENT will hold harmless and indemnify Keith and Associates, Inc. (KEITH) against any losses as a result of limitations within the equipment, but not against negligence on the part of KEITH. Use of this service does not relieve interested parties from their responsibility to make required notification prior to excavation, nor does it relieve utility owners of their responsibility to mark the location of their facilities. KEITH will not be responsible for damage caused by others. KEITH will not be responsible for utilities that cannot be located with the equipment and techniques provided, or those located underneath other utilities.*

*If records research is not part of the scope of services, the utility owner's marks will be used to identify the utility. KEITH will not be responsible for correcting mistakes made by other locators. Where vacuum excavation services are used, and no utility is found at the mark provided by the utility at a depth of 5 feet, the excavation will be backfilled, referenced and invoiced as one test hole.*

Subsurface Utility Engineering Conditions and Understandings -

The utility markings are for design purposes only. The Florida One Call must be notified forty-eight (48) hours in advance of any excavation.

KEITH will not access confined spaces. If confined spaces need to be accessed for locating purposes than the client will be notified, and further arrangements will be made for said access. Additional fees may be applicable.

If due to traffic conditions additional MOT is required and beyond the capability of KEITHS standard MOT operations, KEITH will notify the client and request additional fees.

Additional requests outside the scope of services, when requested by client and/or client's representative, will be invoiced on an hourly basis.

This proposal assumes site access is available and work can be performed between the hours of 7:30 AM and 5:00 PM Monday through Friday.

## Arborist Services

### Task 003 Tree Inventory and Appraisal by Certified Arborist

KEITH will visit the project to confirm and evaluate the location, species, size and quality of existing trees on the project site and identify which trees are to be removed or relocated, as well as any remaining trees that will require protection. Tree locations to be based on the tree survey provided by KEITH.

**Deliverables**

- KEITH will develop a Tree Disposition Plan depicting all existing trees on the project site. This plan will indicate species (scientific and common name), size (DBH, height and canopy spread) and condition. The plan will also note which trees are to be removed, which are to be relocated, and which are to remain and be protected throughout construction.
- KEITH will develop a table including basic tabulations and calculations for tree removal and mitigation values as required by local jurisdiction.
- The standard Tree Protection Detail and notes will be included with the plans.

**The Lump Sum Fee ……. $14,000.00**

## Engineering Services

### Task 004 Kick-Off & Document Review Phase

KEITH will first review all existing information the city has available. This will include any existing modeling performed or other reports to determine the current recommended system. All existing information will be highly scrutinized to ensure the ideal and most economical design is proposed. An initial neighborhood involvement meeting will be held to fully understand the current issues throughout the work area.

KEITH should provide red-line sketch of preliminary design ideas for CLIENT input.

**The Lump Sum Fee ……. $11,800.00**

**Task 005 Preliminary Design Phase**

Once all information is reviewed, KEITH will perform an internal design meeting with senior engineering staff to roadmap the design intent. 30% Paving, Grading and Drainage (PGD) plans will be prepared. Preliminary phasing plans will also be prepared to show potential construction activities. A meeting with COPB and the neighborhood will be held to identify additional critical input.

**The Lump Sum Fee ……. $20,280.00**

**Task 006 Design Development Phase**

KEITH will update and incorporate all reasonable comments made by the COPB and the neighborhood that fall within this scope. 75% plans, specifications and an engineering construction cost estimate will be prepared. In addition, pipe modeling and sizing will be prepared and completed during this phase. One (1) final design coordination meeting will be held with COPB and the neighborhood to ensure all comments have been addressed. At the end of this Phase and the approval of COPB, engineering permitting will begin.

**The Lump Sum Fee ……. $31,540.00**

**Task 007 Construction Document Phase**

Based upon the approved design, KEITH will prepare Final Construction Engineering Plans and calculations. Additional plan updates will be made as the plans go through the required permitting agencies. Outfall improvements are not anticipated as part of this scope. No work is anticipated within FDOT or BC right of-way. No other utilities are anticipated being relocated under this scope of work. Final 100% plans, specifications, engineering cost estimates and required reports to complete the project will be finalized. All items will be prepared in anticipation of a COPB on-call contractor to perform the work. It is not anticipated this work will be put out to bid. Minor bidding assistance is included in this scope of work.

**The Lump Sum Fee ……. $31,540.00**

**Task 008 Engineering Permitting**

KEITH will prepare and submit the permit applications for the construction of the improvements designed as defined by this contract and process them through the following regulatory agencies:

<u>Paving, Grading, and Drainage System</u>
City of Pompano Beach
Broward County Resilient Environment Department

<u>Signing and Pavement Markings Plan</u>
City of Pompano Beach
Broward County Traffic Engineering Division

KEITH will attend (1) pre-application meeting with each agency having jurisdiction over the project to review the proposed design.

If permit processing other than those listed above are required, KEITH will advise CLIENT and prepare a contract addendum for the associated additional services.

**The Lump Sum Fee ……. $17,150.00**

**Task 009 Utility Records Research and Utility Coordination**

1. KEITH will perform utility records research and obtain/update design tickets from One Call Sunshine (811) service to assist the design team and/or client in identifying utility owners that may have facilities within the project limits and may be affected by the project.
2. KEITH will coordinate with franchise utilities with potential relocations in case of identified conflicts with proposed drainage.

**The Lump Sum Fee……...$6,960.00**

**Task 010 Bidding Assistance**

KEITH will provide assistance to CITY during the pre-bid and procurement phase. This assistance will consist of:

- Provide bid and construction documents (plans and technical specifications) in CITY approved format.
- Attending one (1) pre-bid meeting with CITY, other KEITHs and Contractor(s) and prepare meeting minutes.
- Issue technical addenda(s) and/or responses to request for information (RFI's) for clarification as necessary during the bidding process.
- Attending two (2) additional coordination meetings with CLIENT and Contractor (if required). (including bid opening).
- Assist CITY in the evaluation of the bids received (including written recommendation of contract award to the City Commission).

**The Lump Sum Fee ……..……$ 3,350.00**

## Schedule

Subsequent to the execution of this Agreement, the KEITH will commence work on the project following the below preliminary schedule.

| Activity or Task | | Duration |
|---|---|---|
| | Notice to Proceed | TBD |
| Task 001 | Topographic Survey | 7 weeks following NTP |
| Task 002 | Location Services - (Quality Level 'A') | 5 weeks following NTP |
| Task 003 | Tree Inventory and Appraisal by Certified Arborist | 4 weeks following NTP |
| Task 004 | Kick-Off & Document Review Phase | 2 weeks following NTP |
| Task 005 | Preliminary Design Phase | 4 weeks following Client Approval |
| Task 006 | Design Development Phase | 8 weeks following Client Approval |
| Task 007 | Construction Document Phase | 8 weeks following Client Approval |
| Task 008 | Engineering Permitting | 3 months following Client Approval |
| Task 009 | Utility Records Research and Utility Coordination | During Design and Permitting |
| Task 010 | Bidding Assistance | Based on Client Request |

## City's Responsibility

The City will assist KEITH with the following items in order to expedite the completion of the project in an effective manner.

A. Designate a representative(s) who will have the authority to transmit instruction, receive information and enunciate policies and decisions.
B. Provide access to and obtain permission for KEITH to enter upon public lands as required at no additional cost to perform surveys, observations, or other necessary services under this Agreement.
C. Assist in obtaining required approvals, permits, or consents from governmental or regulatory bodies or others necessary for the completion of the work, with KEITH being primarily responsible for preparation of permit applications and supporting documentation.
D. Make available to KEITH all of its existing information which may in any way be pertinent to the project.
E. Attend meetings with regulatory agencies.
F. Review contract documents and provide comments in a timely manner.

## Additional Services

*KEITH will not perform any additional services without the written consent of the City. Services performed beyond the Scope of Services described above will be considered additional services and will be presented to the City as an Addendum to this Agreement prior to initiating the work. Additional services will be invoiced on a time and material basis in accordance with our current Professional Service Fee Schedule or on a lump sum basis if a scope of service can be defined.*

## Compensation

KEITH will invoice the City for services rendered under this Agreement on a lump sum/time and material basis and in accordance with the terms and conditions of the Agreement for Professional Services between the City of Pompano Beach and KEITH, dated May 03, 2021 and approved by City Ordinance #2021-54.

## Fee Sheet (Exhibit A)

| Activity or Task | | Fees |
|---|---|---|
| Task 001 | Topographic Survey | $55,500.00 |
| Task 002 | Location Services - (Quality Level 'A') | $15,000.00 |
| Task 003 | Tree Inventory and Appraisal by Certified Arborist | $14,000.00 |
| Task 004 | Kick-Off & Document Review Phase | $11,800.00 |
| Task 005 | Preliminary Design Phase | $20,280.00 |
| Task 006 | Design Development Phase | $31,540.00 |
| Task 007 | Construction Document Phase | $31,540.00 |
| Task 008 | Engineering Permitting | $17,150.00 |
| Task 009 | Utility Records Research and Utility Coordination | $6,960.00 |
| Task 010 | Bidding Assistance | $3,350.00 |
| | **TOTAL** | **$207,120.00** |

## PROPOSAL FEES

| Our Project/Proposal Number | 12001.M0.11 | City of Pompano Budget Sheet | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Proposal Date | 1/26/2024 | | | | | | | | | | | | | | | | |
| Tasks | | Senior Project Manager | Project Manager I | Project Manager II | Engineer II | Engineer IV | Senior Surveyor & Mapper | Project Surveyor I | Survey Crew II | Senior Landscape Architect | Arborist | Landscape Designer II | Senior Utility Coordinator | Utility Coordinator | Subsurface Utility Location Manager | Subsurface Utility Field Supervisor | Task Subtotals |
| No. | Description | $180.00 | $140.00 | $160.00 | $100.00 | $125.00 | $150.00 | $110.00 | $120.00 | $150.00 | $140.00 | $100.00 | $140.00 | $100.00 | $140.00 | $90.00 | |
| 001 | Topogrpahic Survey | | 4 | | | | 55 | 119 | 280 | | | | | | | | $ 55,500.00 |
| 002 | Location Services - (Quality Level 'A') - Labor | | 5 | | 6 | | | | | | | | | 15 | 10 | 20 | $ 6,000.00 |
| 003 | Tree Inventory and Appraisal by Certified Arborist | | | | | | | | | 16 | 60 | 32 | | | | | $ 14,000.00 |
| 004 | Kick-Off & Document Review Phase | | | 20 | 46 | 32 | | | | | | | | | | | $ 11,800.00 |
| 005 | Preliminary Design Phase | 10 | | 28 | 85 | 44 | | | | | | | | | | | $ 20,280.00 |
| 006 | Design Development Phase | 22 | | 48 | 114 | 68 | | | | | | | | | | | $ 31,540.00 |
| 007 | Construction Document Phase | 22 | | 48 | 114 | 68 | | | | | | | | | | | $ 31,540.00 |
| 008 | Engineering Permitting | 10 | | 30 | 68 | 30 | | | | | | | | | | | $ 17,150.00 |
| 009 | Utility Records Research and Utility Coordination | | | | | | | | | | | | 24 | 36 | | | $ 6,960.00 |
| 010 | Bidding Assistance | | | 10 | | 14 | | | | | | | | | | | $ 3,350.00 |
| 011 | | | | | | | | | | | | | | | | | $ - |
| 012 | | | | | | | | | | | | | | | | | $ - |
| Personnel Hours | | 64 | 9 | 184 | 433 | 256 | 55 | 119 | 280 | 16 | 60 | 32 | 24 | 51 | 10 | 20 | $ 198,120.00 |
| Personnel Cost | | $ 11,520.00 | $ 1,260.00 | $ 29,440.00 | $ 43,300.00 | $ 32,000.00 | $ 8,250.00 | $ 13,090.00 | $ 33,600.00 | $ 2,400.00 | $ 8,400.00 | $ 3,200.00 | $ 3,360.00 | $ 5,100.00 | $ 1,400.00 | $ 1,800.00 | |

| | |
|---|---|
| **Personnel Subtotal** | $ 198,120.00 |
| **Test Holes - Impervious ($450.00/each)** | 20 |
| **Test Holes Subtotal** | $ 9,000.00 |
| **Miscellaneous Expenses** | $ - |
| **Direct Expenses** | $ - |
| **GRAND TOTAL** | **$ 207,120.00** |

KEITH