

The services rendered pursuant to this Scope of Work are in accordance with the terms and conditions of the Contract for Professional Services between the City of Pompano Beach and Baxter & Woodman, Inc. for Single Project Contract for Engineering Services for NE 10th Street and Dixie Highway Stormwater Improvements and as set forth in the RLI No. E-20-20.

NE 10th Street and Dixie Highway Stormwater Improvements Engineering Design, Permitting and Bidding Services

A. Background

The City of Pompano Beach (CITY) selected Baxter & Woodman, Inc. (CONSULTANT) to provide engineering design, permitting and bidding services under RLI No. E-20-20 for an area corresponding to Study Area No. 19 of the CITY's Stormwater Master Plan. The project area is bounded by NE 10th Street to the north, by Dixie Highway to the west, by NE 6th Street to the south and by NE 5th Avenue to the east. The area primarily consists of a single-family residential neighborhood with a small amount of multi-family and some business located along the Dixie Highway/FEC corridor. There are 8,800 linear feet of CITY rights-of-way within the project area (see *Figure 1*).

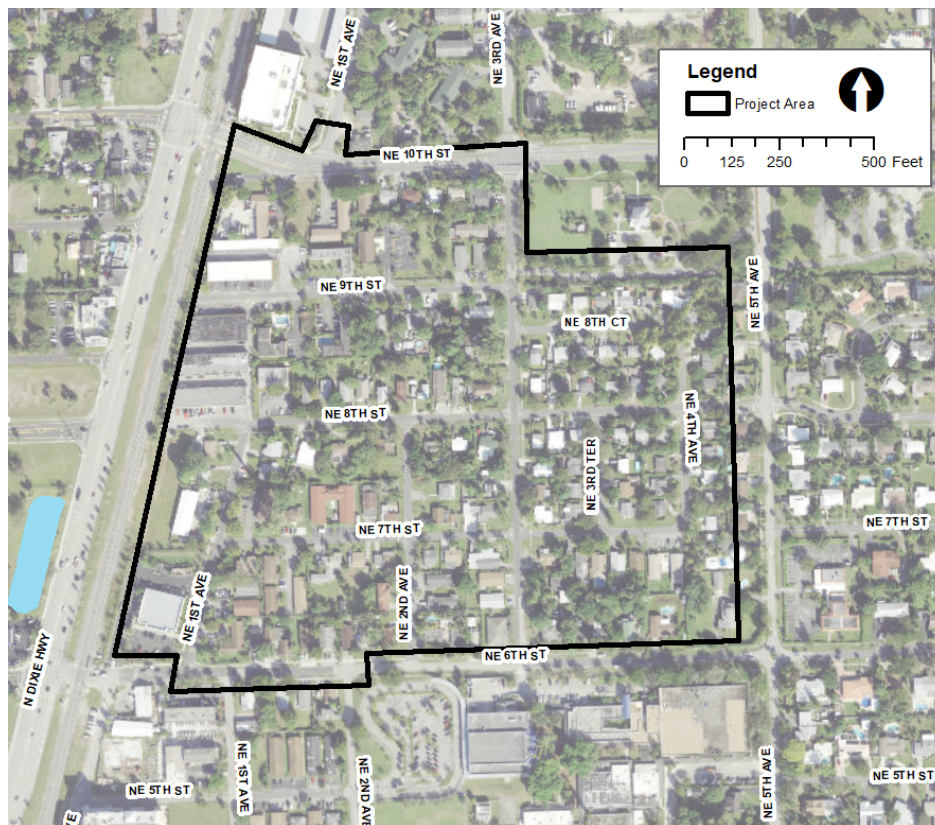


Figure 1: Location Map

The Master Plan included an evaluation the flooding under the existing conditions during a 5-year, 24-hour design storm event with 7.8 inches of rainfall. The project area is defined by the sub-basin CE_015_01 within the stormwater model. The recommended improvement plan for this study area, per the Master Plan, includes the installation of approximately 2,700 linear feet of exfiltration trench within the public right-of-way areas (see **Figure 2**). However, the CITY has requested that some additional areas east of NE 3rd Avenue be considered in the modeling analyses in increase the amount of storage in the system. The CITY indicated that the drainage infrastructure on NE 3rd Avenue should extent north across NE 10th Street in order to connect to future drainage improvements on NE 10th Street north of the project. The CITY also indicated that an existing pipe crossing under NE 10th Street at NE 1st Avenue should be increased in size.



Figure 2: Original Recommended Stormwater Improvements from Stormwater Master Plan

B. Scope of Services

The CONSULTANT will provide professional engineering services to the CITY for the installation of new Drainage System within the project area. The Engineering Services of CONSULTANT will include the following tasks:

- Task 1 – Project Management
- Task 2 – Data Collection
- Task 3 – Design
- Task 4 – Permitting
- Task 5 – Public Outreach
- Task 6 – Bidding

The specific scope of services to be provided by CONSULTANT includes the following:

Task 1 – Project Management

Subtask 1.1 Overall Project Management

CONSULTANT will provide overall project management during the Design Phase which includes monitoring progress of work on a weekly basis for billing and compliance with established schedule, budget and work quality requirements, and coordination with CITY and team subconsultant(s) to ensure timely project deliverables and budget management.

Subtask 1.2 Project Meetings

CONSULTANT will attend one (1) kick-off meeting and up to two (2) design coordination meetings with the CITY and provide a written summary of the issues discussed.

Task 2 - Data Collection

Subtask 2.1 Topographic Survey

CONSULTANT will provide the services of a registered professional surveyor to provide services consisting of field topography, locating existing vertical and horizontal control (GPS Localization), baseline stationing and locating all above ground existing facilities and utilities within the right-of-way or proposed drainage easements of the established project limits.

Existing horizontal and vertical control will be recovered and/or set as needed. Control will be referenced from the Broward County Control Network which is the NAD83/90 and NGVD88 datums. Benchmarks will be set at a maximum of 600-foot intervals and referenced to an existing established FDOT, CITY or County benchmark. Above ground data will be obtained to create a surface of the existing conditions. Topography will include visible fixed improvements such as bank lines, natural ground, curbing, asphalt, above ground utilities, etc. Limits of vegetation and trees equal to or greater than 4-inch DBH (diameter at breast height) will be collected and shown. Sufficient data will be obtained to create a DTM surface. Grade breaks will be included. The maximum interval between points on a straight line will be 50 feet and 25 feet on a curve.

Existing drainage and gravity sanitary structures and pipes including invert elevations, top of structure elevations, bottom of structure elevations, pipe directions, pipe connectivity, pipe sizes and pipe

materials will be surveyed. Upstream and downstream structures will be located.

Right-of-way and baseline on the project limits will be provided. If a historic baseline does not exist, one will be created (established from south to north and west to east). Information will be based on readily available data such as plats, deeds, and property appraiser website. Individual lots with associated data will be shown. Field monumentation will be searched and located.

Subtask 2.2 SUE Investigation

CONSULTANT will provide the services of a registered professional surveying company to perform a SUE investigation. This investigation will be performed in general accordance with ASCE Standard 38-02: Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data. A search will be conducted for the existence and approximate location of subsurface utilities within the project limits except those listed under Exclusions below. The specific work includes:

- A. Records Research through customary means:
 - a. Identify utilities anticipated to exist in the project limits.
 - b. Document responses and compile record information.
- B. Field Investigation using appropriate surface geophysical techniques:
 - a. Documented conductive utilities – designate with the objective of achieving Quality Level B for conductive utilities. Where not possible, lower Quality Levels will be established. Utilities of non-conductive material installed with serviceable tracer wire or tape will be considered conductive. It is important to note, however, that the depicted location of such utilities represents the tracer rather than the actual utility.
 - b. Documented non-conductive utilities – investigate with the objective of achieving Quality Level C. Where not possible, depict at Quality Level D.
 - c. Undocumented utilities – are those utilities that may exist in the project area that have not been previously identified, are not discovered during records research, and for which there is no prior knowledge. Standard search protocol will be used in an attempt to determine the existence and approximate location of undocumented utilities; however, this work cannot guarantee that all utilities will be found and depicted.
- C. Quality Level exceptions – the following utilities will be investigated with the objective of achieving the specific Quality Level stated:
 - a. Gravity sanitary sewers – Quality Level C.
 - b. Non-conductive utilities with ready access allowing sonde, metal tape or detection rod insertion and tracking – Quality Level B.
 - c. Subaqueous crossings – Quality Level D.
- D. Exclusions – the following utilities and/or components will not be investigated:
 - a. Utility vault or manhole interiors
 - b. Traffic control loops
 - c. Signage wiring
 - d. Irrigation lines
 - e. Cathodic protection
 - f. Thrust blocks.
 - g. Septic systems.
 - h. Underground storage tanks, piping and wiring.

Subtask 2.3 Field Verification (soft digs)

CONSULTANT will provide the services of a qualified company to use vacuum excavation equipment to perform up to 20 test holes at locations as directed by the client. CONSULTANT will make every effort to vacuum excavate to a depth of eight (8) feet using high pressure air methods. However, vacuum excavation will cease when these methods are unable to progress below refusal, such as bedrock or flowable fill. CONSULTANT will not employ destructive methods, such as jackhammers or chipping hammers, to break up bedrock or other refusal within a test hole due the high risk of damage to buried utilities and safety risk to employees. Utilities deeper than 8 feet may not be found.

Sunshine 811 will be notified two (2) full business days in advance of excavation. CONSULTANT will mark the conductive utilities by inductive methods utilizing electromagnetic geophysical prospecting equipment. Known non-conductive utilities will be marked utilizing 2-D Radar (GPR).

Subtask 2.4 Geotechnical Investigation

CONSULTANT will furnish the services of a professional geotechnical engineer to provide subsurface investigations within the Project limits that will include six (6) 10-foot deep standard penetration borings with pavement cores and two (2) percolation tests to determine the soil hydraulic conductivity. The collected field data will be evaluated and presented in a geotechnical engineering report that will include:

- Detailed graphical logs of the soil borings showing the groundwater level and soil classifications.
- Results of exfiltration tests.
- Results of the laboratory tests.
- Pavement restoration recommendations.
- Site preparation recommendations.
- Recommendations for design regarding excavation, trenching, pipeline installation, shoring requirements, fill and backfill, and compaction for the proposed work.

Maintenance of traffic will be provided in accordance with FDOT while performing the borings in the roadway.

Task 3 - Design Services

Subtask 3.1 Preliminary Design

This portion of the SWMM stormwater model will be reviewed, verified and updated as needed to confirm the Master Plan findings and recommendations. Modifications will be made to add improvements to add additional exfiltration trenches east of NE 3rd Avenue per the CITY's request. Up to three alternatives will be modeled to confirm the best configuration in terms of flood protection and cost effectiveness.

The survey will be field verified to confirm that aboveground features were obtained. Coordination with utility agencies (electric, phone, gas, cable TV, and fiber optics, etc.) will be performed to reconcile apparent discrepancies between record information and existing photographic and field-verification information.

A technical memorandum will be prepared with results of the modeling, a drawing/figure of the final recommended drainage improvement layout, a discussion of the survey and subsurface investigations,

recommendations regarding road pavement restoration, and a discussion of permitting issues. A preliminary opinion of probable construction cost will also be prepared and included.

Subtask 3.2 Design Drawings

Preparation of construction documents will include contract drawings and technical specifications. Contract drawings will include: cover sheet, general notes, plan/profile drawings, and miscellaneous detail sheets. The drawing scale will be 1-inch equals 20 feet for pipeline plan and 1-inch equals 2 feet for pipeline profile. CONSULTANT will prepare the engineering design elements on topographic survey information in an AutoCAD release 2022 format. Drawings will be submitted for CITY review at 60% (plan view only), 90% (plan/profile) and 100% (plan/profile) stages. CONSULTANT will meet with the CITY to discuss comments and incorporate responses into the final documents. The 60%, 90% and 100% plans will be provided to the CITY in .pdf format. CONSULTANT will also furnish with the 100% design drawings, one (1) set of AutoCAD Version 2022 files in electronic format on CD.

Subtask 3.3 Technical Specifications

Specifications are to be prepared by CONSULTANT for bidding purposes for the proposed improvements. The Front-End Contract Documents are to be prepared by the CITY. Specifications will be submitted for CITY review at 60%, 90% and 100% stages. CONSULTANT will meet with the CITY to discuss comments and incorporate responses into the final documents. The technical specifications will be provided to the CITY in electronic .pdf format.

Subtask 3.4 Construction Cost Opinion

An opinion of probable construction cost will be prepared for the 60%, 95% and 100% drawings and specifications. The cost estimate format will be consistent with the bid proposal tabulation sheet for the project.

Subtask 3.5 Quality Assurance

CONSULTANT will provide internal QA/QC reviews on the Preliminary, 60%, 90% and 100% Design Documents (e.g. drawings, specifications, and cost estimates).

Task 4 - Permitting

During the Design Phase the CONSULTANT will meet with the potential permitting and other interested agencies to determine all potential design permitting requirements. Agencies anticipated to have interest in the project include:

- South Florida Water Management District (Water Use Application for Dewatering).
- Broward County Environmental Licensing (Surface Water Management License Application)
- Broward County Environmental Licensing (Dewatering/Contamination Avoidance)
- Broward County Water Control District #3
- Broward County Traffic Division – signing and marking approval
- Pompano Beach Building Department Permit.

Permit applications will be completed for each of the permitting agencies. Associated permit application fees shall be determined by CONSULTANT and paid by CITY.

In addition to preparing the permit applications for appropriate agencies, CONSULTANT will assist CITY in consultations with the appropriate authorities. Consultation services will include the following:

- Attend up to one (1) pre-application meeting with the staff of each regulatory agency.
- Attend up to one (1) meeting with each of the regulatory agencies during review of the final permit applications.
- Respond to request(s) for additional information from each regulatory agency.

Subtask 4.1 Dewatering Permit (SFWMD)

CONSULTANT will prepare a dewatering plan and submit a Water Use Permit Application for a dewatering to South Florida Water Management District (SFWMD). There are contaminated sites in the vicinity of the project that will require special attention and will also require approval from Broward County.

Subtask 4.2 Surface Water Management License (Broward County)

CONSULTANT will prepare and submit “Surface Water Management License Application” to Broward County Environmental Licensing & Building Permitting Division. This application will also be reviewed as an Environmental Resource Permit (ERP) application on behalf of the SFWMD.

Subtask 4.3 Environmental License (Broward County)

Typically, Broward County defers to SFWMD for dewatering permits. However, there is a contaminated site in the vicinity of the project associated with a train derailment that will require a special dewatering design to be reviewed and approved by the County (in addition to the dewatering permit required by SFWMD). CONSULTANT will prepare and submit information to the County for approval to perform dewatering.

Subtask 4.4 Broward County Water Control District #3

CONSULTANT will prepare and submit plans of the proposed work to the Broward County Water Control District #3 for their notification and approval.

Subtask 4.5 Broward County Traffic Division

CONSULTANT will submit an application package to Broward County Traffic Division for review and approval of the proposed traffic signing and pavement marking.

Subtask 4.6 Pompano Beach Building Department

CONSULTANT will prepare the Zoning Compliance Building Permit Application for the CITY’s signature and will submit the application to the Building Department ePlan system for preliminary review by the various CITY departments. This permit application will ultimately be transferred to the selected Contractor to complete. CONSULTANT will make design changes, if necessary, based on comments and will also attempt to answer questions. However, some questions will require the Contractor to complete once the application has been transferred.

CONSULTANT will furnish the services of an arborist sub-consultant to complete the worksheet information including a listing of trees to be removed, their condition and estimated value. The CITY shall determine the location for the replacement trees and assist CONSULTANT in coordination with the Building Department.

Task 5 – Public Outreach

Subtask 5.1 Public Meetings

CONSULTANT will attend one meeting prior to construction with the property owners in the project area. The meeting shall be coordinated by the CITY. Presentation materials will be prepared for the public meeting. In lieu of presentation boards of 3-D renderings, The project will be converted from AutoCAD to InfraWorks for an interactive 3-D presentation of the neighborhood.

Task 6 - Bid Phase Services

Subtask 6.1 Prepare Bid Documents

Prepare Contract Document packages (i.e. bid form, drawings and specifications) for CITY advertisement and bidding purposes. Drawings to be full size (22" x 34") format. CONSULTANT will provide the CITY with a copy of bid form in Excel and pdf format.

Subtask 6.2 Pre-Bid Conference

CONSULTANT will prepare agenda and conduct pre-bid conference with interested contractors and CITY staff. CONSULTANT will attend conference and be prepared to discuss the project. CONSULTANT will prepare and distribute meeting minutes.

Subtask 6.3 Bid Clarification

CONSULTANT will respond to questions from prospective bidders and suppliers. CONSULTANT will prepare materials for addenda and will provide supplemental information or clarification as appropriate, to interpret, clarify, or expand the bidding documents to the CITY for distribution to all prospective bidders during the bid period.

Subtask 6.4 Contract Award

CONSULTANT will attend the bid opening, review bid packages received, prepare bid tabulation sheet and prepare a letter of recommendation of award to the CITY.

Subtask 6.5 Conformed Contract Documents

CONSULTANT will prepare conformed Contract Documents for use by the Contractor and CITY during construction.

LIMITATIONS OF AUTHORITY

Limitations of Resident Project Representative Authority. Except upon written instructions of CONSULTANT, the RPR:

1. Shall not exceed limitations on CONSULTANT's authority as set forth in the Contract Documents.
2. Shall not undertake any of the responsibilities of Contractor, Subcontractors or Construction Manager, or expedite the Work.
3. Shall not issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents.
4. Shall observe but not participate in specialized field or laboratory tests.

C. Assumptions

In addition to, the work items discussed above, the following assumptions were made in establishing the scope of this Work and associated fee. Changes and/ or modifications in the above work items or these assumptions are considered an Additional Services Item under the terms of the contract. Assumptions include:

1. The scope and budget are based on the design, permitting and bidding of a stormwater system only. If additional underground utilities are added to the project, an Amendment will be executed for this work.
2. CITY will provide CONSULTANT available record drawings, prior to NTP date, of facilities within the project area which have been modified since the Preliminary Design Report was prepared.
3. The CITY will provide CONSULTANT an electronic version of their standard construction contract documents in MICROSOFT "WORD" version format. These include the CITY's standard bid document forms, construction contract, General and Special Conditions, surety, schedules, retainage and other contract forms specific to CITY construction contracts. CONSULTANT will provide the Technical Specification sections.
4. The CITY is responsible for all permitting fees, including costs of public notification in local newspapers.
5. A single bidding effort is assumed for the project. Re-bidding of the project is considered an Additional Services item.
6. The design is to be based on the federal, State and local codes and standards in effect at the beginning of the project. Revisions required for compliance with any subsequent changes to those regulations is considered an Additional Services Item.
7. In regard to the contaminated groundwater in the vicinity of the project, CONSULTANT will attempt to determine what will be an acceptable design to the regulatory agencies. However, CONSULTANT cannot be responsible if agencies ultimately reject the proposed design and require significant design or construction method changes. Significant changes in the design shall requires Additional Services.

D. Additional Services

CONSULTANT will provide additional engineering services relating to the provision of geotechnical studies to the project area that are not covered under this Scope of Work. These additional services may be required due to uncertainties discovered during survey, soils, investigations, field verification of existing facilities and conditions, and potential property or easement acquisitions.

Additional services will be performed on as-directed basis in accordance with a written Notice-to-Proceed (NTP) from the City Manager. The Notice-to-Proceed shall contain the following information and requirements in accordance with the Contractor for Consulting/Professional Services:

- A detailed description of the additional services to be undertaken.
- A budget establishing the amount of the fee to be paid.
- A time established for completion of the work.

E. Obligations of the CITY

With assistance by CONSULTANT, as described herein, the CITY, as applicant shall obtain approvals and permits from all governmental authorities having jurisdiction over the project. The CITY is responsible for the payment of all permit application fees and assistance with regard to the Building Department application.

F. Compensation

Compensation by the CITY to the CONSULTANT for all tasks will be on a Lump Sum, Not-to-Exceed basis in accordance with the terms and conditions of the Contract for Consulting/Professional Services between the City of Pompano Beach and Baxter & Woodman, Inc. for Single Project Contract for the NE 10th Street and Dixie Highway Stormwater Improvements. The estimated compensation for the services described in this Scope of Work is **\$294,732.00** as shown in **Table 1** below and in more detail in Attachment A. Note that the values in table 1 include the subconsultant fees and their multiplier.

TABLE 1: LABOR AND EXPENSE SUMMARY

<u>Engineering Services</u>	<u>Estimated Fees</u>
Task 1 – Project Management	\$ 11,220.00
Task 2 – Data Collection	\$130,222.00
Task 3 – Design Services	\$108,675.00
Task 4 – Permitting	\$ 34,441.00
Task 5 – Public Outreach	\$ 4,245.00
Task 6 – Bidding	\$ 5,430.00
Reimbursables (NTE)	<u>\$ 500.00</u>
TOTAL PROJECT COST	\$294,732.00

G. Schedule

The completion dates for this work will be as follows (starting at time that CONSULTANT receives the hardcopy of the executed Contract).

Engineering Services	Time per Phase	Cumulative Time
Task 1 – Project Management	On-going	On-going
Task 2 – Data Collection	18 weeks	18 weeks
Task 3 – Design	30 weeks	48 weeks
Task 4 – Permitting	12 weeks ⁽¹⁾	60 weeks
Task 5 – Public Outreach	2 weeks	62 weeks
Task 6 – Bidding	6 weeks	68 weeks

⁽¹⁾ Estimated, based upon usual regulatory agency review period.

Engineering Fee Proposal

Task No.	Task Description	Labor Classification and Hourly Rates								Sub-Consultant Services
		Principal Engineer \$195.00	Senior Project Engineer III/IV \$180.00	Engineer I/II \$120.00	Senior Cadd Tech \$120.00	Const. Manager \$145.00	Inspector \$110.00	Admin Support \$70.00	Total Labor	
1	Project Management									
1.1	Overall PM	10	30						\$7,350	
1.2	Project Meetings (up to 3 meetings)	2	9	12				6	\$3,870	
	Subtotal Task 1	12	39	12	0	0	0	6	\$11,220	\$0
2	Data Collection									
2.1	Topographic Survey including MOT		2	3	3		3		\$1,410	\$66,430
2.2	SUE Investigation including MOT		2	3	3				\$1,080	\$25,250
2.3	Field Verification (soft-digs)			3	2				\$600	\$10,000
2.4	Geotechnical Investigation			6	6				\$1,440	\$12,585
	Subtotal Task 2	0	4	15	14	0	3	0	\$4,530	\$114,265
3	Design Services									
3.1	Preliminary Design									
3.1a	H&H Modeling	1	30	54					\$12,075	
3.1b	Survey Check and Utility Coordination		2	16					\$2,280	
3.1c	Technical Memorandum and Cost Opinion		14	26	6			8	\$6,920	
3.2	Design Drawings									
3.2a	60% Design Drawings	1	60	96	110				\$35,715	
3.2b	90% Design Drawings	1	34	64	75	8			\$24,155	
3.2c	100% Design (Bid) Drawings	2	24	40	50				\$15,510	
3.3	Technical Specifications (60%, 90% & 100%)	2	12	22				20	\$6,590	
3.4	Construction Cost Opinion (60%, 90% & 100%)	2	8	20	10				\$5,430	
	Subtotal Task 3	9	184	338	251	8	0	28	\$108,675	\$0
4	Permitting									
4.1	SFWMD Water Use Permit (dewatering)		12	16	3			2	\$4,580	
4.2	Broward County Surface Water Mgmt License	1	16	20	4			2	\$6,095	
4.3	Broward County Environmental (dewatering)	1	24	28	6			2	\$8,735	
4.4	BCWCD Water Control District #3		2	5				2	\$1,100	
4.5	Broward County Traffic Signing & Marking Approval	1	3	10				2	\$2,075	
4.6	Pompano Beach Building Dept Permit	1	16	20	6			2	\$6,335	\$5,019
	Subtotal Task 4	4	73	99	19	0	0	12	\$28,920	\$5,019
5	Public Outreach									
5.1	Public Meeting including PPT/InfraWorks preparation	1	4	4	22			3	\$4,245	
	Subtotal Task 5	1	4	4	22	0	0	3	\$4,245	\$0
6	Bidding									
6.1	Prepare Bid Documents		3	5					\$1,140	
6.2	Pre-Bid Conference		2	3				1	\$790	
6.3	Bid Clarifications and Addendums		3	6				2	\$1,400	
6.4	Contract Award	1	2	4		1		2	\$1,320	
6.5	Conformed Contract Documents		1	2	3				\$780	
	Subtotal Task 6	1	11	20	3	1	0	5	\$5,430	\$0
	B&W Labor Subtotal Hours	27	315	488	309	9	3	54		
	B&W Labor Subtotal Costs	\$5,265	\$56,700	\$58,560	\$37,080	\$1,305	\$330	\$3,780	\$163,020	\$119,284
	B&W Labor Total Costs	\$163,020								
	Subconsultant Costs Total	\$119,284								
	Subconsultant Multiplier	1.1								
	Subconsultant Total	\$131,212								
	Reimbursable Expenses	\$500								
	Project Total	\$294,732								