

Proposal to Provide WRF – Anaerobic Selector Design Work Order No. 23

Services to be provided by: Hazen and Sawyer (Hazen)

Services provided to (“Village”): Village of Wellington (Village)

Proposal Date: August 12, 2020

Proposal Terms

PROJECT DESCRIPTION

The Village of Wellington Water Reclamation Facility (WRF) is an oxidation ditch aeration type activated sludge wastewater treatment plant. The Wellington WRF is permitted to operate with a capacity of 6.5 million gallon per day (mgd) on a three month average daily flow (TMADF) basis. As part of the ongoing WRF Master Plan, it was recently determined that improvement of sludge volume index (SVI), a measure of the settleability of solids in secondary clarifiers, is a critical goal to support operation of the WRF within allowable permit constraints as it approaches rated flow of 6.5 mgd TMADF. Installation of an anaerobic selector tank was identified as the preferred method to improve SVI.

The headworks structure is currently not capable of being completely bypassed. Currently, bypassing operations require that flow enter the first chamber of the headworks, and then can only be rerouted to aeration basin AB-3 only, which is manually screened. The new selector structure would provide an opportunity for a common structure downstream of headworks but upstream of the aeration basins AB-1, AB-2, and AB-3 where raw influent can be manually screened and combined with return activated sludge (RAS). This project also includes design of a manual screening structure, and new ductile iron pipe (DIP) and valves to route unscreened raw influent and RAS to the new anaerobic selector structure.

SCOPE OF SERVICES

Task 1 – Project Initiation and Meetings

Hazen will hold meetings with the Village during the design of the described improvements. The anticipated meetings are listed below;

- Kickoff meeting to discuss the project details
- Meeting to review 60% design submittal materials
- Meeting to review 90% design submittal materials

- Meeting to review 100% design submittal materials

Hazen will organize and lead meetings with the Village staff and key members of the project team. During the project initiation kickoff meeting, the overall work plan, project goals, and schedule will be discussed, lines of communication will be established, and data needs will be assessed.

Minutes for each meeting will be prepared and distributed by the Hazen.

Deliverable(s):

- 1.1 – Minutes from project kick-off meeting
- 1.2 – Minutes for 60% design review meeting
- 1.3 – Minutes for 90% design review meeting
- 1.4 – Minutes for 100% design review meeting

Task 2 – Development of Contract Documents

Hazen will prepare the engineering drawings and technical specifications (i.e. construction documents).

Task 2.1 – Contract Documents – Anaerobic Selector

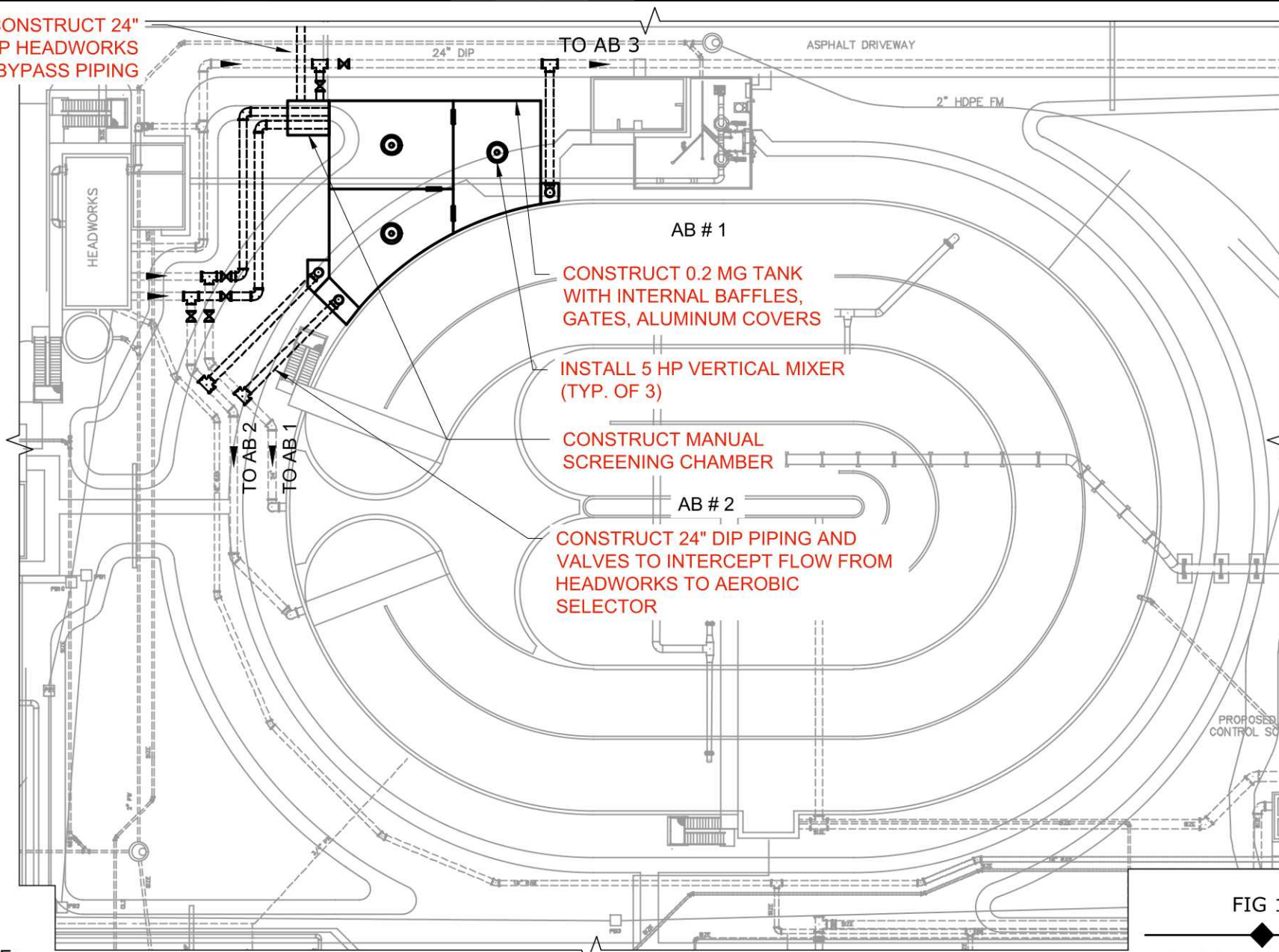
Hazen shall provide plans, details, and specifications for the following design elements in the construction documents for a new anaerobic selector tank, including:

- Structure roof elevation shall be the approximate elevation of the existing headworks (38.67 feet NGVD), and floor elevation shall be approximate elevation of existing aeration basins (21.75 feet NGVD)
- Internal baffle walls between chambers, each chamber capable of being isolated and dewatered
- Aluminum covers with access hatches and mixer platforms at each chamber
- Aluminum stair from grade to top of structure, and aluminum guardrails surrounding structure
- Manual weir gates between chambers and at effluent boxes
- Tank drains discharging to the internal plant sewer
- Three new mechanical mixers (approximately 5 hp each)
 - New motor starters in headworks electrical room, or operators building electrical room
 - Hand-On-Auto switches and disconnects

- Signal wiring for mixers
- Manual screen for use during headworks bypass
- DIP piping and valves for raw influent routing to manual screen, and RAS bypass to anaerobic selector zone
- DIP piping and valves for influent and discharge piping from the anaerobic selector
- Odor control duct rerouting against face of new structure and pipe supports
- Regrading of stormwater swale as necessary
- Lighting on top of tank
- Lightning protection and grounding of tank, covers, and equipment
- Electrical conduit, ductbank, and manholes/handholes across the site
- Rerouting of minor existing power ductbank and manhole in proposed tank footprint
- Functional control description and process and instrumentation control diagram (P&ID) describing control of the anaerobic zone mixers

A conceptual site plan demonstrating the proposed improvements are provided as **Figure 1**.

CONSTRUCT 24"
DIP HEADWORKS
BYPASS PIPING



TO AB-3

ASPHALT DRIVEWAY

2" HDPE FM

AB # 1

CONSTRUCT 0.2 MG TANK
WITH INTERNAL BAFFLES,
GATES, ALUMINUM COVERS

INSTALL 5 HP VERTICAL MIXER
(TYP. OF 3)

CONSTRUCT MANUAL
SCREENING CHAMBER

AB # 2

CONSTRUCT 24" DIP PIPING AND
VALVES TO INTERCEPT FLOW FROM
HEADWORKS TO AEROBIC
SELECTOR

TO AB-2
TO AB-1

PROPOSED
CONTROL SC

ANAEROBIC SELECTOR TANK



1"=40'-0"

FIG 1

PROPOSED ANAEROBIC
SELECTOR TANK

Village of Wellington
Anaerobic Selector Design

Hazen

NOTE:

DRAWING EXCERPTED FROM WASTEWATER
TREATMENT FACILITY EXPANSION DRAWING
C-07, BY ARCADIS, RMA OCTOBER 2011.

The preliminary list of drawings anticipated for design are as follows:

Sheet	Drawing	Title
1	G1	Title Sheet
2	G2	List of Drawings
3	G3	Symbols and Abbreviations
4	G4	General Notes
5	G5	Hydraulic Profile
6	G6	Process Flow Diagram
7	C1	Key Plan
8	C2	Civil Demolition
9	C3	Paving, Grading, and Drainage Plan
10	C4	Yard Piping
11	C5	Civil Details - 1
12	C6	Civil Details - 2
13	M1	Anaerobic Selector - Top Plan
14	M2	Anaerobic Selector - Sections
15	M3	Anaerobic Selector - Sections
16	M4	Manual Screen – Plan and Sections
18	M5	Mechanical Details - 1
19	M6	Mechanical Details - 2
20	S1	Structural General Notes
21	S2	Anaerobic Selector Tank – Foundation and Bottom Plan
22	S3	Anaerobic Selector Tank – Top Plan
23	S4	Anaerobic Selector Tank – Platform Plans, Sections, and Details
24	S5	Anaerobic Selector Tank – Sections and Details
25	S6	Anaerobic Selector Tank – Sections and Details
26	S7	Manual Screen – Plan and Sections
27	S8	Structural Details - 1
28	S9	Structural Details - 2
29	S10	Structural Details - 3
30	I1	Instrumentation Symbols and Legend
31	I2	Anaerobic Selector P&ID
32	I3	Instrumentation Details
33	E1	Electrical Legend and Symbols
34	E2	Electrical Site Plan
35	E3	Electrical Plan – Power, Lighting, and Grounding

Sheet	Drawing	Title
36	E4	Electrical Plan – Pretreatment Building Electrical Room
37	E5	One Line Diagram – Existing MCC5 Modifications
38	E6	Schematics
39	E7	Riser Diagrams
40	E8	Schedules
41	E9	Electrical Details – Sheet 1
42	E10	Electrical Details – Sheet 2

Hazen will engage Hillers Electrical Engineering, Inc. (Subconsultant) to perform electrical engineering work associated with the proposed improvements.

A 60% submittal of plans only and list of specifications will be submitted to the Village for review and comment. Hazen will meet with Village representatives to discuss recommendations and to receive Village comments.

A 90% complete set of construction drawings and specifications will be submitted to the Village for review and comment. Hazen will meet with Village representatives to discuss recommendations and to receive Village comments.

Upon receipt of comments from the Village, Hazen will proceed with the final contract documents. A 100% complete set of construction documents will be submitted to the Village for review and comment. Hazen will meet with Village representatives to discuss recommendations and to receive Village comments.

Hazen will prepare a Class 3 Engineer's Opinion of Probable Construction Cost (OPCC) at the 60% and 100% design levels as defined by the AACE International in Recommended Practices 18R-97, which is normally expected to be accurate within approximately plus 30 percent to minus 20 percent of the estimated cost.

Deliverable(s):

2.1 – Preliminary (60%) Construction Documents: Two (2) 22" x 34" hard copy plans, two (2) 11" x 17" hard copy plans, List of Specifications. One (1) electronic version of the plans will also be provided

2.2 – Preliminary (90%) Construction Documents: Two (2) 22" x 34" hard copy plans, two (2) 11" x 17" hard copy plans, and two (2) hard copies of the Specifications will be provided. One (1) electronic version of the plans and Specifications will also be provided

2.3 – Class 3 OPCC (90%): Two (2) hard copies and one (1) electronic version of the OPCC will be provided.

2.4 – Final (100%) Construction Documents: Two (2) 22” x 34” hard copy plans, two (2) 11” x 17” hard copy plans, and two (2) hard copies of the Technical Specifications will be provided. One (1) electronic version of the plans and Technical Specifications will also be provided, in both .pdf and word .doc format.

2.5 – Class 3 OPCC (100%): Two (2) hard copies and one (1) electronic version of the OPCC will be provided.

Task 3 – Permitting Services

Hazen will apply for and obtain applicable permits required for construction of the proposed improvements and will respond to requests for additional information submitted by the regulatory agencies. The permits to be applied for within the scope of work are as follows:

- Village of Wellington Building Department electrical permit (permit will not be obtained, but review process will be started)
- Village of Wellington Building Department permit (permit will not be obtained, but review process will be started)
- FDEP Substantial Permit Modification to Domestic Wastewater Facility Permit Number FLA042595

Deliverable(s):

3.1 – Permit Applications: Hazen shall submit to the Village the permit applications listed above for signature (as required).

3.2 – Responses to Requests for Additional Information (RAIs): Hazen will respond to up to two RAIs from each agency listed above and copy the Village on correspondence.

Task 4 – Bidding and Award Services

It is assumed that the Village will sell and distribute bid documents, conduct pre-bid conference and bid opening, and address any administrative questions from prospective bidders. Hazen shall assist the Village in the following ways:

- Hazen shall attend the pre-bid conference and assist the Village with any responses to technical questions regarding the bid documents.
- Hazen shall assist the Village in preparing addenda which relate to technical questions.
- Hazen shall review bids and provide a recommendation of award.
- Hazen shall prepare Conformed Drawings and Specifications based on addenda issued.

Deliverable(s):

- 4.1 – Recommendation of Award: Following evaluation of the lowest qualified bidder's proposal, Hazen shall submit to the Village the recommendation for award.
- 4.2 – Conformed Drawings and Specifications: Five (5) 22" x 34" hard copy plans, five (5) 11" x 17" hard copy plans will be provided. One (1) electronic version of the plans and Technical Specifications will also be provided.

ASSUMPTIONS

- 1. Site information including, but not limited to, existing as-built drawings will be provided to Hazen by the Village. Drawings available in .dwg format will be obtained by Village and provided electronically.
- 2. Permit fees will be the responsibility of the Village.
- 3. Standard Front End Documents will be prepared/provided by the Village.
- 4. Topographical survey information required will be provided by the Village.
- 5. A geotechnical boring is anticipated to 60 feet below grade in the footprint of the anaerobic selector tank. Geotechnical information required will be provided by the Village.
- 6. Ground penetrating radar (GPR) for identification of unknown utilities at the proposed tank location will be performed by the Village.
- 7. The drawings and specifications shall be prepared assuming that the Village will competitively bid this project in a single bid package and enter into a construction contract with one general contractor to complete the work.
- 8. SCADA HMI screens will be programmed by Village third-party consultant.
- 9. It is assumed that the existing MCCs and PLCs at the headworks or operator building have adequate spare capacity to support proposed improvements.

SCHEDULE

Task	Description	Time of Completion from NTP
1	Meeting Minutes	As Applicable
2	60% Drawings and Specifications, Class 3 OPCC	18 weeks
2	90% Drawings and Specifications, Class 3 OPCC	26 weeks
2	100% Drawings and Specifications, Class 3 OPCC	30 weeks
3	Permit Applications	22 weeks
4	Bid and Award Services	36 weeks (estimated)

COMPENSATION

Compensation for all tasks, unless specifically noted below, will be billed on a lump sum basis based on percent of work complete and total project fees presented in Attachment A.

AUTHORIZATION

Work described in this proposal will commence upon authorization to proceed and receipt of a signed agreement.

Hazen and Sawyer, D.P.C.

Signed: Albert Muniz

Name: Albert Muniz, PE

Title: Vice President

Date: August 12, 2020

BUDGET SUMMARY - Lump Sum

Task No.	Description	BUDGET SUMMARY for Work Order No. ____									
		Vice President	Senior Associate	Associate	Senior Principal Engineer	Engineer/ Asst Engr	Principal Designer	Designer	Office	Total Labor	Sub-Consultant
1	Project Initiation/Meetings	4	9	10	0	16	0	0	0	39	\$0
2	Contract Documents	12	168	200	120	148	210	150	32	1,040	\$30,987
3	Permitting	0	8	20	0	40	6	12	8	94	\$0
5	Bidding and Award Services	0	4	8	8	16	4	4	8	52	\$0
	SUB-TOTAL	16	189	238	128	220	220	166	48	1225	\$30,987
	Labor Raw Costs	\$218	\$196	\$165	\$145	\$105	\$114	\$95	\$73		
	Labor Sub-Total	\$3,488	\$37,044	\$39,270	\$18,560	\$23,100	\$25,080	\$15,770	\$3,504		
	Labor Total									\$165,816	
	Subconsultant Labor Total										\$30,987
	Subconsultant Multiplier										1.0
	Subconsultant Total										\$30,987
	Reimbursable Expenses										\$0
	Project Total										\$196,803



HILLERS ELECTRICAL ENGINEERING, INC.

May 5, 2020

Mr. Eric Stanley, PE
Associate
Hazen and Sawyer, PC
2101 Corporate Blvd
Boca Raton, FL. 33431

Subject: Village of Wellington Water Reclamation Facility – Anaerobic Selector Design.

Dear Eric:

Hillers Electrical Engineering, Inc. (HEE) is pleased to provide Hazen and Sawyer, PC (Hazen) this proposal for electrical engineering services for the above referenced project.

The Village of Wellington (Village) desires to construct a Anaerobic Selector Structure to divert screened (and unscreened in bypass mode) raw wastewater from the Pretreatment Structure to any of the three existing oxidation ditch structures. Presently, the Pretreatment Structure is not capable of completely being bypassed because flow must enter the first chamber of the structure before being routed to only oxidation ditch AB-3. This project will allow for the complete bypass of the Pretreatment Structure with a means to manually screen raw wastewater flow and then direct the screened flow to any of the existing oxidation ditches on site. The manual screening is implemented when the Pretreatment Structure is bypassed for maintenance however; the selector structure is in the process flow at all times. The Anaerobic selector will afford flexibility for plant operations by balancing flows and allowing for easy isolation of an oxidation ditch for maintenance. The new Anaerobic Selector will also be designed to include a return activated sludge feed line to improve the efficiency of the oxidation ditches.

Task 1 – Project Initiation and Meetings

HEE will attend meetings with Hazen and the Village during the design of the described improvements. All meetings will be held at the Village WRF. The anticipated meetings are listed below;

- Project Kickoff
- 60% Design Review Meeting
- 100% Design Review Meeting

Task 2 – Development of Contract Documents

HEE will prepare design drawings for electrical systems, as appropriate, for the project elements described previously. Submittals are anticipated to be 60% design, 100%, and Bid Documents. HEE will provide input to an opinion of probable construction cost (OPCC) for the 60% and 100% design submittals only.

Anticipated Drawings:

Electrical:

Electrical Legend and Symbols

Electrical Site Plan New Anaerobic Selector Structure

Electrical Plan New Anaerobic Selector Structure-Power, Lighting, Grounding

Electrical Plan Existing Pretreatment Building Electrical Room

One Line Diagram-Existing MCC5 Modifications

Schematics

Riser Diagrams

Schedules

Electrical Details-Sheet 1

Electrical Details-Sheet 2

Task 3 – Permitting Services

HEE will assist Hazen, where appropriate, to apply for, and obtain, applicable permits required for construction of the proposed improvements and will respond to requests for additional information submitted by the regulatory agencies. The permits anticipated to be applied for within the scope of work are as follows:

- Village of Wellington Building Department electrical permit (permit will not be obtained, but review process will be started). HEE will assist Hazen with permit documents and response to comments.

Task 4 – Bidding and Award Services

HEE will assist Hazen and the Village with the following:

- HEE will not attend the pre-bid conference.
- HEE will assist Hazen in responding to any technical questions, related to the electrical design presented in the bid documents, and preparation of addenda related to electrical design technical questions.
- HEE will assist Hazen review bids for electrical systems and provide input to a recommendation of award. Actual recommendation of award letter will be prepared by Hazen.
- HEE will assist Hazen in preparing Conformed Drawings for the electrical design based on addenda issued.

Assumptions:

- All background drawings will be furnished by H&S/Village in AutoCAD format.
- HEE will furnish electronic files to Hazen for deliverables. All reproduction of necessary submittal deliverable documents to the Village will be by Hazen.
- Site information including, but not limited to, existing as-built drawings will be provided to Hazen/Village to HEE. Drawings available in .dwg format will be obtained by Hazen/Village and provided electronically.
- Instrumentation and control design is by Hazen.
- No Permit fees are included with this proposal and are the responsibility of others.
- Any topographical survey information required will be provided by the Hazen/Village.
- Record drawings will be relied upon for identification and location of underground utilities. No fees for underground exploration (pot-holing, soft-digs) are included with this proposal.
- The drawings and specifications shall be prepared assuming that the Village will competitively bid this project in a single bid package and enter into a construction contract with one general contractor to complete the work.

Our proposed lump sum Task 1 fee is:	\$2,034.00
Our proposed lump sum Task 2 fee is:	\$23,934.00
Our proposed lump sum Task 3 fee is:	\$1,272.00
Our proposed lump sum Task 4 fee is:	\$3,747.00
Total:	\$30,987.00

HEE wishes to thank Hazen for the opportunity to assist with this project. Please do not hesitate to call me if you have any questions regarding this proposal or any other related matter.

Sincerely,



Mark E. Luther,
PE MEL/mel

Village of Wellington Anaerobic Selector Design
Hazen & Sawyer
HILLERS ELECTRICAL ENGINEERING, INC.
Scope Fee Breakdown
Date: 5/5/20

Rate	\$192.00	\$153.00	\$147.00	\$81.00	\$138.00	\$78.00				
	Chief Engineer	Project Manager	Professional Engineer	CADD/ Technician	Construction Coordinator	Secretarial	Total Task	Expenses	SUBTOTAL	TASK TOTAL
PHASE OF WORK	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Cost	Cost	Cost
Task 1: Project Initiation and Meetings										\$2,034.00
Kickoff Meeting	2		2				4		\$678.00	
60% Design Review Meeting	2		2				4		\$678.00	
100% Design Review Meeting	2		2				4		\$678.00	
Task 2: Development of Contract Documents										\$23,934.00
60% Design	8		40	60			108		\$12,276.00	
100% Design	8		27	34			69		\$8,259.00	
Bid Documents	2		15	10			27		\$3,399.00	
Task 3: Permitting Services										\$1,272.00
Village of Wellington Building Department			7	3			10		\$1,272.00	
Task 4: Bidding and Award Services										\$3,747.00
Respond to Questions/Prepare Addenda	2		6	4			12		\$1,590.00	
Review Bids	2		2				4		\$678.00	
Prepare Conformed Drawings	1		6	5			12		\$1,479.00	
Total Hours	29		109	116			254			
Subtotal	\$5,568.00		\$16,023.00	\$9,396.00					\$30,987.00	
										\$30,987.00