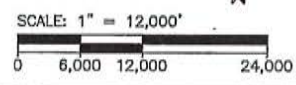
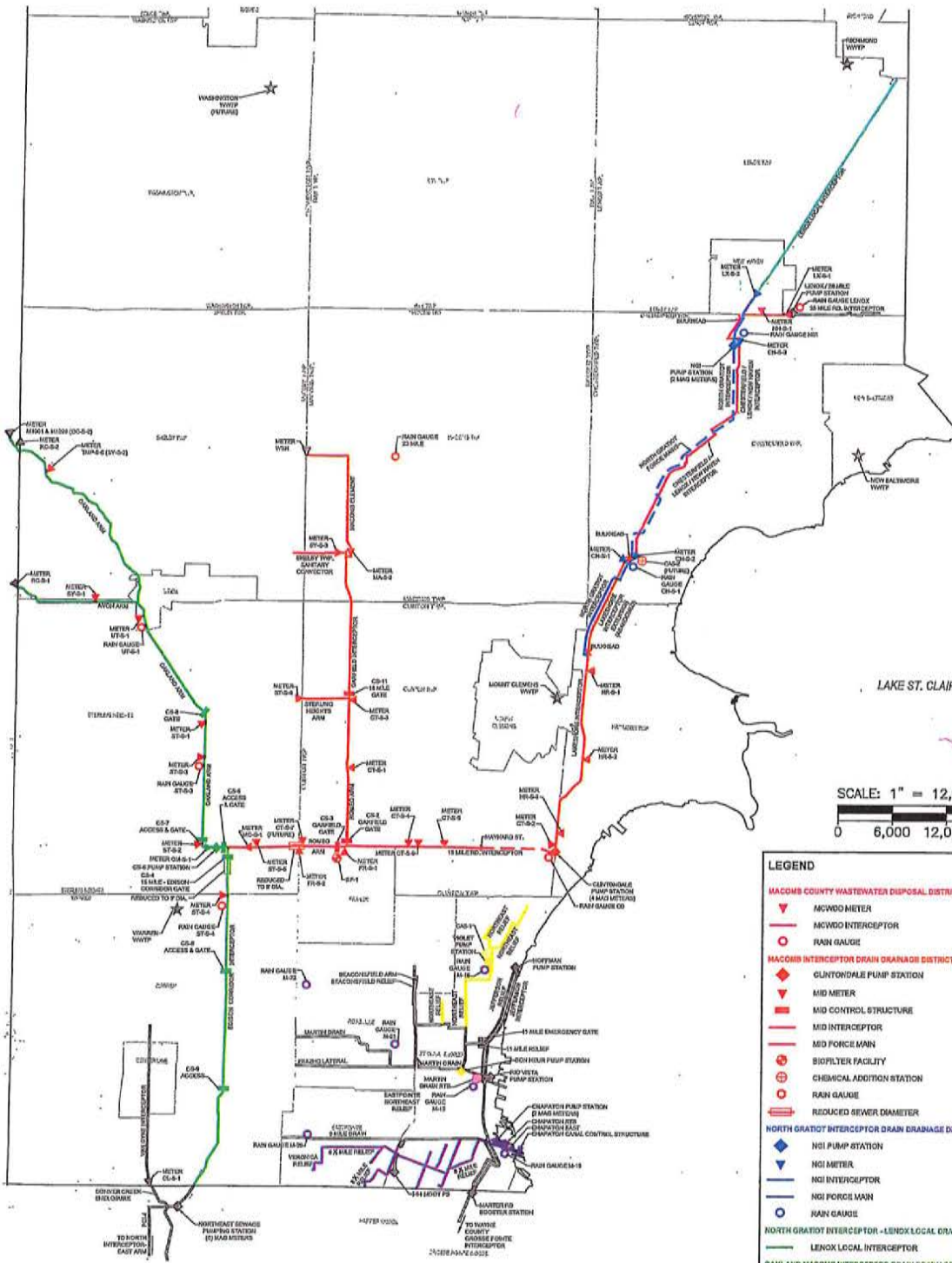


EIGHT AND ONE-HALF MILE RELIEF DRAIN  
INTRA-COUNTY DRAINAGE BOARD  
AUGUST 13, 2018  
10:45 A.M.  
AGENDA

	Page
1. Call of meeting to order and roll call	
2. Approval of Agenda for August 13, 2018	
3. Approval of Minutes for July 9, 2018	3
4. Public participation	
5. Chapaton Dry-Weather Pump & Screen Improvements – Vince Astorino	5
Motion: To approve the design and engineering proposal for the Chapaton Dry-Weather Pump & Screen Improvements from Hubbell, Roth & Clark, Inc. for a not-to-exceed amount of \$110,908	
6. Consideration for approval of invoices (see attached)	15
7. Financial Report – Bruce Manning	41
8. Adjourn	

# MACOMB COUNTY WASTEWATER SYSTEMS



- LEGEND**
- MACOMB COUNTY WASTEWATER DISPOSAL DISTRICT (MCWWD)**
    - MCWWD METER
    - MCWWD INTERCEPTOR
    - RAIN GAUGE
  - MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT (MIDD)**
    - CLINTONDALE PUMP STATION
    - MID METER
    - MID CONTROL STRUCTURE
    - MID INTERCEPTOR
    - MID FORCE MAIN
    - BIOFILTER FACILITY
    - CHEMICAL ADDITION STATION
    - RAIN GAUGE
    - REDUCED SEWER DIAMETER
  - NORTH GRATIOT INTERCEPTOR DRAIN DRAINAGE DISTRICT (NGIDD)**
    - NGI PUMP STATION
    - NGI METER
    - NGI INTERCEPTOR
    - NGI FORCE MAIN
    - RAIN GAUGE
  - NORTH GRATIOT INTERCEPTOR - LENOX LOCAL DRAIN DRAINAGE DISTRICT (NGIDLOD)**
    - LENOX LOCAL INTERCEPTOR
  - OAKLAND-MACOMB INTERCEPTOR DRAIN DRAINAGE DISTRICT (OMIDD)**
    - CS-6 PUMP STATION
    - OMB METER
    - OMB CONTROL STRUCTURE
    - OMB INTERCEPTOR
    - REDUCED SEWER DIAMETER
  - 8 1/2 MILE RELIEF DRAIN DRAINAGE DISTRICT**
    - CHAPATON WEST PUMP STATION
    - CHAPATON RETENTION TREATMENT BASIN
    - CHAPATON CANAL CONTROL GATE
    - 8 1/2 MILE INTERCEPTOR
    - RAIN GAUGE
  - 8 MILE RELIEF DRAIN DRAINAGE DISTRICT**
    - 8 MILE PUMP STATION
    - CHEMICAL ADDITION STATION
    - 8 MILE INTERCEPTOR
  - MARTIN SANITARY DIVERSION DRAINAGE DISTRICT (MSDD)**
    - MARTIN DRAIN RETENTION TREATMENT BASIN
  - OTHER SYSTEMS**
    - PUMP STATION
    - METER
    - WWTP
    - INTERCEPTOR

**Candice S. Miller**  
 MACOMB COUNTY PUBLIC WORKS COMMISSIONER



An adjourned meeting of the Intra-County Drainage Board for the **EIGHT AND ONE-HALF MILE RELIEF DRAIN** was held in the Office of the Macomb County Public Works Commissioner, 21777 Dunham, Clinton Township, Michigan, on July 9, 2018, at 10:02 A.M.

PRESENT: Candice Miller, Chair  
Bryan Santo, Member

ABSENT: Veronica Klinefelt, Member

ALSO PRESENT: Robert Leonetti, Macomb County Board of Commissioners, Karen Czernel, Deputy, Vincent Astorino, P.E., Operations and Flow Manager, Bruce Manning, Financial Manager, Dan Heaton, Public Relations Manager, Barbara Delecke, Administrative Services, Macomb County Public Works (MCPW); Annemarie Lepore, Aloia & Associates; Jordan Scott, Sterling Heights Dept. of Public of Works

The meeting was called to order by the Chair, Candice Miller. The agenda was approved as presented.

Minutes of the meeting of June 11, 2018 were presented. A motion was made by Mr. Santo, supported by Ms. Miller to approve the minutes as presented.

Adopted: YEAS: 2  
NAYS: 0

The meeting was opened to public participation, then closed, there being no comments from the public.

The Chair presented the invoices totaling \$31,884.09 to the board for review and approval.

A motion was made by Mr. Santo, supported by Ms. Miller to approve the invoices as presented.

Adopted: YEAS: 2  
NAYS: 0

A motion to receive and file the financial report given by Mr. Manning was made by Mr. Santo and supported by Ms. Miller.

Adopted: YEAS: 2  
NAYS: 0

There being no further business, it was moved by Mr. Santo, supported by Ms. Miller, that the meeting of the Eight and One-Half Mile Relief Drain Board be adjourned.

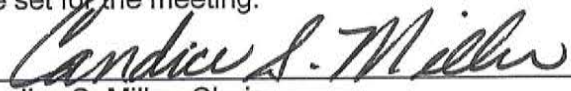
Adopted: YEAS: 2  
NAYS: 0

The meeting was adjourned at 10:03 a.m.

  
Candice S. Miller, Chair  
Macomb County Public Works Commissioner

STATE OF MICHIGAN  
COUNTY OF MACOMB

I certify that the foregoing is a true and correct copy of proceedings taken by the Intra-County Drainage Board for the Drainage District shown on the attached set of minutes, on July 9, 2018 the original of which is on file in the Public Works Commissioner's Office. Public notice of the meeting was given pursuant to Act No. 267, Public Acts of Michigan, 1975, including, in the case of a special or rescheduled meeting or a meeting secured for more than 36 hours, notice by posting at least 18 hours prior to the time set for the meeting.

  
Candice S. Miller, Chair  
Macomb County Public Works Commissioner

DATED: 7/11/18

9324.bd



**Candice S. Miller**

Public Works Commissioner  
Macomb County

From: Macomb County Public Works Office

Date: 7-24-2018

To: 8 ½ Mile Relief Drain Board

Copy: File  
Evaluation Committee

RE: Proposal Evaluation Project Award Recommendation  
MCPWO RFP No.: **MCPWO-WWS-2018-RFP-008**  
MCPWO Proposal Name: **Chapaton Dry-Weather Pump & Screen Improvements**

This is an open competitive contract for engineering services for the design of a redundant dry-weather pump and replacement of the influent bar screens at the Chapaton RTB. The station currently has one dry-weather pump which results in more reliance on the larger intermediate pumps during regular maintenance and unscheduled down time. The station's original design included provisions to add a redundant dry-weather pump. The addition of the second pump provides the desired redundancy and eliminates reliance on the larger intermediate pumps.

The primary focus of this project is the replacement of the existing bar screens which have reached the end of their useful life. The bar screens protect all of the pumps from debris, such as large rocks, ragging, etc. This project will assess the optimal bar spacing, construction material, and hydraulic impacts and assess multiple automatic bar screening system options and includes complete design of the recommended system.

The ultimate goal of this project is to increase the water quality that the station is discharging, increase the efficiency of the system components and minimize the damage to existing and new assets from debris.

The approved total budget is \$1,000,000, which includes design, engineering and construction. This award includes design and engineering services, the construction phase will be solicited on MITN in early 2019 and submitted for Board approval.

The Request for Proposals (RFP) was advertised from 4-9-18 to 5-18-18 on the Michigan Inter-Governmental Trade Network (MITN) website. Six-Hundred Seventy-Seven (677) solicitations were sent out via MITN and Forty (40) firms downloaded the RFP. One (1) Addendum was issued during the course of the RFP. The Addendums extended the proposal submission deadline.

On 5-18-18, proposals were received from 5 firms. The proposal received from Tetra Tech was disqualified due to improper cost proposal submission. Each member of the Evaluation Committee independently reviewed and scored the proposals in accordance with MCPWO's policy. The possible range of scores was from 0 to 100. The total score is the weighted average of technical and cost scores, where the technical is 80% and the cost is 20%. The proposers were ranked as follows:

Firm	Technical Score	Cost Score	Total Score	Proposed Cost
Alfred Benesch	54	100	74	\$71,360.00
Fishbeck, Thompson, Carr & Huber	73	55	84	\$129,500.00
Hubbell, Roth & Clark	72	64	85	\$110,908.00
Wade Trim	73	52	84	\$136,210.00
<b>Maximum Possible Score</b>	<b>100</b>	<b>100</b>	<b>100</b>	-

The top three scoring firms were separated by one point, therefore post-bid interviews were conducted to allow each firm the opportunity to present their proposal and for the evaluation committee to verify and finalize the score based selection. The Evaluation Committee recommends that **Hubbell, Roth & Clark**, the number one ranked proposer, be named as the consultant for the above referenced Project.

On behalf of the Board please indicate your approval of this recommendation by signing below. Thank you for consideration of this recommendation.

\_\_\_\_\_  
 Vince Astorino  
 Operations & Flow Manager  
 MCPWO Engineering-Wastewater Services

\_\_\_\_\_  
 Evans Bantios, PE  
 Construction & Maintenance Manager  
 MCPWO Engineering-Wastewater Services

\_\_\_\_\_  
 Steve Rozycki, PE  
 Engineer II  
 MCPWO Engineering-Wastewater Services

\_\_\_\_\_  
 Stephen Downing  
 Engineer II  
 MCPWO Engineering-Wastewater Services

Approved: \_\_\_\_\_

Not Approved: \_\_\_\_\_

Hold: \_\_\_\_\_

\_\_\_\_\_  
 Authorized Board Member Signature

\_\_\_\_\_  
 Authorized Board Member Name (print)



## E. Work Plan

### UNDERSTANDING THE PROBLEM

#### Background

The Chapaton Pumping Station, completed in 1969, along with the 28 MG Retention Basin and associated conduits, junction chambers and supporting utilities. The pumping station proper includes one 1,100 gpm (gallons per minute) dry weather pump, two 6,000 gpm intermediate pumps, and three variable pitch 231,000 gpm storm pumps. The single dry weather pump operates more frequently than all the other pumps and is prone to damage from rocks, debris, and other abrasive material delivered from the combined collection system. This pump requires an assessment to determine if the recently replaced Flygt pump with hardened wear components is the suitable pump for the second pump or if another pump is a better choice for this application.

The pumps are protected by two 10-foot-wide screens with 4-inch bar spacing. These screens are deteriorated and require replacement. Replacement can be a simple 3-inch bar rack or mechanically cleaned screen, deepening upon the analysis of alternatives performed under this project. HRC designed the intermediate pump replacement project, which De-Cal, Inc. installed in 2007, and the dry weather pump, which Process Piping & Equipment installed in 2010.

HRC also previously evaluated the pumps and screens and prepared the Chapaton RTB Dry Weather Flow Pumping and Screening Evaluation report dated February 5, 2015 (HRC Report). The draft version of this report is included in the RFP documents. Given our prior work, HRC is intimately familiar with the pumps and facility operations. Nonetheless, HRC will provide a re-assessment of the report findings and recommendations, some of which are identified below.

#### The Dry Weather Pump

The single dry weather pump operates during all dry weather flow conditions (when available), pumping sanitary and combined sewage that can include gravel, rocks, fractured MH bricks, and other abrasive materials from the combined 8 ½ Mile System. (Generally, once the intermediate pumps are operated, the dry weather pump is not operated.) The original pump is therefore prone to excessive wear and damage and has required frequent maintenance. That pump was replaced in September 2015 with a Flygt Model NT 3153 with a 20 HP motor, outfitted with hardened wear components. The impeller and wearing are a high-chrome, W/A HVOF (high-velocity oxygen fuel) tungsten carbide coating. To date, this pump has been operating satisfactorily and has been examined by Kennedy Industries and found to be in good condition. The pump will be examined again during the design phase to determine suitability for the second pump.

**Note:** We agree with the recommendation for hardened material for this application but welcome the condition assessment of the pump and the re-evaluation of this selection.

HRC agrees that the goose-neck suction piping and rock sump proposed in the HRC Report will help contain and capture the debris. However, this will require higher operating wet well levels which may impact the intermediate pump operation. The higher wet well level will likely settle/capture more organics, which may contribute to odors. The flushing system proposed in the report will aid in this regard if implemented.

More importantly, if a rock sump is added to protect the pumps, this will require periodic inspection and debris removal, as stated in the HRC report. However, access to the wet well is difficult; and therefore, will likely be more expensive than currently budgeted or estimated in the report. Given the difficulty of accessing the rock sump and its sight-unseen location, it is also likely that over time, the practice of periodic maintenance of the rock trap will be abandoned, leaving operators with higher operating levels and maintenance staff with the same impeller repairs. However, HRC will explore means to improve access and material removal as part of our design process, should this be deemed a viable alternative. If the rock trap is not implemented, the need for the flushing system is likely moot.

While we agree with many of the report recommendations, we will revisit the recommendation for chopper pumps in this application. Chopper pumps are very durable, well-built and very good at handling less abrasive materials (the stringy debris mentioned in the report, and disposable wipes, personal care products and other materials common to sanitary sewage). However, chopper pumps have a cutting bar and sharpened impeller which will not wear well with the abrasive material even if hardened pump components are provided. To handle this type of material, vortex impeller pumps (such as WEMCO/Weir) are more suitable. (The Wemco pump was originally developed by the Western Mining Company to pump coal ash, a highly abrasive material.) This type of pump can be manufactured with hardened wear components. The disadvantage of this type of pump is that it is inefficient, generally operating at 50 to 60 percent efficiency. [Note: the chopper style pumps also operate in this general efficiency range, so they are comparable in this sense.]

And while the vortex impeller pump may offer an advantage for abrasive environments, if the Flygt pump with hardened materials is wearing well, using similar Flygt pumps, spare parts, and one service center is advantageous for both operations and maintenance staff.

The pump capacity (Flow and TDH) is not formally stated and may need to be evaluated and confirmed. The existing dry weather pump capacity is 1,100 gpm at 55 feet TDH, but the new pump "should be sized to closely model the dry weather flow being received via the 8 ½ Mile Drain." Therefore, the flow data may need to be evaluated to determine dry days and the average peak and low flow for the dry days.



There is also a recommendation in the report for a VFD “for reduced energy consumption at low flows.” The VFD is not explicitly stated in the RFP, so this may be evaluated as an optional service. The type of VFD and options for this application will need to be determined (18 pulses clean power, 12 pulses low harmonic, 6 pulses, bypass contactor, harmonic filtering). Depending on the size of the VFD and the length of the cable run, shielded cable, additional filtering, line reactors, and/or a clean power VFD may be required due to the harmonics in the line, and this will have to be evaluated. For cable lengths above 150 feet, the VFD manufacturer should be contacted to discuss filtering requirements. If provided, the motor will be inverter duty, with grounding rings and possibly ceramic bearings.

However, we question the need for a VFD in this application. The energy savings will likely not approach the cost of an installed VFD, and they generally last 10 to 12 years, so continued replacements are needed. As of this proposal, we suggest staying away from the VFD.



## Bar Screens

The original pump station was equipped with dual 10 feet wide mechanically cleaned 4-inch screen racks installed to protect the pumps. They have deteriorated, are past their useful life and need to be replaced. The Report evaluated several options including rehabilitation, replacement with dual spaced bars and materials, and gripper style automated screens with 1.5-inch bar spacing. The recommended alternative was the manually cleaned screen, 3-inch spacing fabricated of stainless steel for the lower bars, and galvanized steel for the upper bars. These recommendations will be re-analyzed including the assessment of the bar spacing, material, and preventive maintenance options.

To perform the analysis, we first need to discuss and confirm the purpose of the screens. If they are to protect the pumps, then the three-inch bar spacing for manually cleaned screens identified in the 10 States Standards is sufficient. However, to manually clean the debris captured and contained both upstream of the screens and within the rock sump identified previously, wet well access, confirmed space entry requirements, flow isolation and means of debris removal are all issues that require evaluating for this recommendation to be viable. (It does not appear that the flow can be currently isolated to manually remove debris upstream of the bar screens. Therefore, stop logs or hinged flow diversion plates may need to be considered.) The concern with mechanically cleaned screens and thus the screenings is that screenings need to be managed (collected, washed, stored, and disposed of) on a frequent basis. The finer the screen, the more likely organics will be collected, and thus odors will be a concern.

A gripper style screen is a good choice for deep wet well (such as this) because the only additional cost is essentially cable, versus additional chain, rakes, and plate for conventional style screens. However, the headroom in the Trash Rack Room is only 11 feet 6 inches, which is insufficient for the gripper, trolley, beam, and dumpster. The gripper, trolley, and beam will fit, but there is insufficient headroom to drop into a traditional dumpster, and a lower profile bin is a potential option. We envision the screening debris to be removed through a new door in the common (non-load bearing) wall between the garage and trash rack room and out the large garage overhead door. Thus, the common wall will be modified to allow screenings collection and removal.

If screens are to improve the quality of flow into the RTB, then finer screen spacing can be a consideration. However finer screens will capture finer materials including organics, which may contribute to odors in the screenings area. We understand that narrower bars to limit material into the RTB is not a design consideration, and even if it is, finer screens placed elsewhere will be less expensive and likely a better option.

In general, we suggest that bars are spaced to adequately protect the pumps but do not capture more debris than required.

## SCOPE OF SERVICES

### Project Management

Project Management will be performed for Task 1 and 2, and include all meetings, workshops, day-to-day communications, addressing owner's concerns in any regard. The following formal submittals, workshops, and review meetings are planned:

- ≡ Kickoff Meeting
- ≡ Pump and Screens Alternative Qualitative Assessment Submittal
- ≡ Workshop No. 1: Equipment Alternatives
- ≡ Pump and Screens Qualitative Life Cycle Assessment Submittal
- ≡ Workshop No. 2: Equipment Life Cycle Assessment (LCA) and Selection
- ≡ Draft Basis of Design Report Submittal
- ≡ Draft Basis of Design Review Meeting
- ≡ Fifty Percent Pump and Screens Submittal
- ≡ Fifty Percent Plans and Specifications Submittal Review Meeting
- ≡ Ninety Percent Pump and Screen Submittal
- ≡ Ninety Percent Plans and Specifications Submittal Review Meeting
- ≡ MDEQ Permit Review Meeting (if needed)

## Task 1 Dry Weather Pump Evaluation and Design

### Task 1.1 Dry Weather Pump Basis of Design

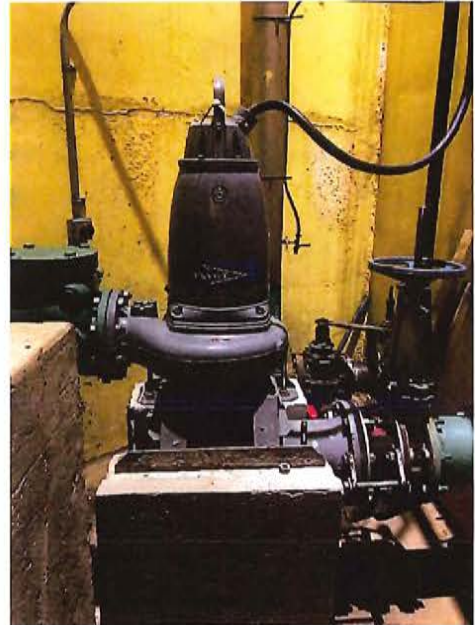
#### **Dry Weather Pump Alternatives Qualitative and Quantitative Assessments**

HRC will prepare a qualitative analysis of various dry weather pump alternatives, including the chopper style (Vaughan) pumps vortex recessed impeller (Wemco) pump, dry pit submersible (Flygt) pumps, and screw centrifugal (Wemco/Hidrostal) pumps. We would like the inspection of the existing dry weather Flygt pump at this time.

The qualitative analysis will include advantages/disadvantages, operational and maintenance considerations, and relative costs. The analysis will provide the basis for selecting several alternatives for cost-effective life cycle analysis. Following the discussions at Work Shop No. 1, a more detailed quantitative life cycle analysis will be performed and presented at Workshop No. 2 for equipment selection.

#### **Capacity and Hydraulic Analysis**

This task will include the capacity assessment based on the dry weather flow analysis for the 8-1/2 Mile Drain. In addition, the total dynamic head will be established, to confirm the pump 55 feet duty point. At this point, the need for a VFD can be evaluated and confirmed.



#### **The Basis of Design Report**

The findings of the prior analysis will be compiled into the Draft Basis of Design report and reviewed during the Draft Basis of Design Report Review Meeting. The Engineer's opinion of Construction Costs will be developed as well as a Construction Schedule. Following the meeting, any further analysis will be performed, edits made, comments addressed and the draft report re-submitted as a Revised Basis of Design Report.

### Task 1.2 Dry Weather Pump Detailed Design

The detailed design documents will be prepared following approval of the Basis of Design final report. The design will include pump and pipe layout, electrical power and control wiring one-line diagrams and power plan and revised cost estimates. Key components, such as the isolation knife, rubber flexible coupling, and other components will be discussed and selected. The existing tee fitting upstream of the mag meter may be used as the connection point. Demolition/relocation sheets are likely required for the sample pump.

#### **Task 1 Deliverables**

- ≡ Progress and Submittal Review Meetings and Workshops — Agenda, Handouts, and Notes
- ≡ Workshop Qualitative Assessments
- ≡ Workshop Qualitative Life Cycle Cost Assessment
- ≡ Draft, Revised, and Final Basis of Design Report
- ≡ 50%, 90% and Issued for Bid Design Documents

## Task 2 Bar Screen Replacement

### Task 2.1 Basis of Design

#### Screening Equipment Alternatives Qualitative and Quantitative Assessments

HRC will prepare a quantitative analysis of various types of screens suitable for this project, including a manually-cleaned bar rack, Gripper-type screen, Duperon Flex Rake, catenary type screen, and climber screen. The analysis will include advantages/disadvantages, Operational and Maintenance considerations and relative costs. The analysis will provide the basis for selecting several alternatives for cost-effective life cycle analysis. Following the discussions at Work Shop No. 1, a more detailed life cycle analysis will be performed. The life cycle analysis will be performed on several selected alternatives.

#### Building Modifications

Screenings removal will be identified for a new mechanically cleaned screen, and building modifications are thus required. These are likely to be partial masonry wall removal, new doors, modification to the existing double doors, and other architectural improvements.

#### The Basis of Design Report

The findings of the prior analysis will be compiled into the Draft Basis of Design report and reviewed during the Draft Basis of Design Report Review Meeting. The engineer's opinion of construction costs will be developed as well as a construction schedule. Following the meeting, any further analysis will be performed, edits made, comments addressed and the draft report re-submitted as a Revised Basis of Design Report.

### Task 2.2 Detailed Design

The detailed design documents will be prepared following approval of the Basis of Design final report. The design will include screen plans, sections and details, structural details (to support the screen rails), architectural room modifications, and electrical power and control diagrams and floor plan.

#### Task 2 Deliverables

- ≡ Progress and Submittal Review Meetings and Workshops — Agenda, Handouts, and Notes
- ≡ Workshop Qualitative Assessments
- ≡ Workshop Qualitative Life Cycle Cost Assessment
- ≡ Draft, Revised and Final Basis of Design Report
- ≡ 50%, 90% and Issued for Bid Design Documents

The Drawings may include the following sheets:

- ≡ Title Page
- ≡ Site/Laydown Area, General Notes
- ≡ D-1 Mechanical Demolition – I
- ≡ D-1 Mechanical Demolition – II
- ≡ D-2 Electrical Demolition – I
- ≡ S-1 Structural Details
- ≡ A-1 Arch Flor Plan and Sections

- ≡ A-2 Arch Schedules and Details
- ≡ P-1 Dry Weather Pump Plan and Sections
- ≡ P-2 Screen Plan and Sections
- ≡ P-3 Miscellaneous Details
- ≡ E-1 Legend and Abbreviations
- ≡ E-2 Power and Control Floor Plans
- ≡ E-3 Power and Control One-Line Diagrams
- ≡ E-4 Miscellaneous Details

The Specifications will likely include:

- ≡ Division 00 – (All Pre-Bid, Bid, and Conditions of the Contract Specifications and Forms)
- ≡ Division 01 – General Specifications (All required Summary of work, Submittals, Field Offices, Start-Up and Commissioning, Sequence of Work, Closeout, etc. Specifications)
- ≡ Division 11 – Dry Weather Flow Pumps, Screens
- ≡ Division 15 – Pipe and Valves
- ≡ Division 13 – Controls and Level Devices
- ≡ Division 16 – All Cable, Conduit, Boxes, Disconnect Switches, Control Stations, Tests, etc. Specifications

**Note:** The Architectural specifications will be in the drawings.

### Task 3 Construction Administration

#### **Bid Phase**

HRC will:

- ≡ Attend the pre-bid meeting and facilitate the site visit
- ≡ Answer pre-bid questions
- ≡ Provide addendum (if required)
- ≡ Assess bids, bidders and provide the bid recommendation

#### **Construction Services**

HRC will:

- ≡ Attend the meeting and prepare meeting notes
- ≡ Review shop drawings and O&M manuals
- ≡ Review and approve pay applications
- ≡ Attend start-up
- ≡ Prepare punch list
- ≡ Perform project closeout, including bound AutoCAD record drawing files

### Construction RPR Observation

HRC will:

- ≡ Provide part-time observation (10 trips are assumed)

### Task 3 Deliverables

- ≡ Addendum, if required
- ≡ Bid recommendations
- ≡ Meeting notes
- ≡ Punch list
- ≡ AutoCAD record drawing files



EIGHT AND ONE-HALF MILE RELIEF DRAIN - 8/13/18

Funding Source	Apportionment	Manager	Vendor	Amount	Invoice Detail	Project Summary	Project Balance
8 1/2 Mile Relief	Chapter 20 State of MI - 16.04% County of Macomb - 2.25% Dept. of Roads - 2.25% Eastpointe - 54.33% St. Clair Shores - 25.13%	Astorino	Cummins Bridgeway	\$ 937.85	Invoice #006-69778 - 6/29/18	Annual Generator Maintenance	
		Astorino	Cummins Bridgeway	\$ 715.23	Invoice #006-69780 - 6/29/18	2-Hour Load Bank Test	
		Astorino	DE-CAL, Inc.	\$ 1,791.00	Invoice #WO18280591 - 6/21/18	Annual HVAC and Boiler Maintenance	
		Astorino	DTE Energy	\$ 7,136.61	Monthly Electric - 6/11/18 - 7/9/18	SWFs	
		Astorino	Fishbeck, Thompson, Carr & Huber, Inc.	\$ 2,340.00	Invoice #376267 - 7/23/18 Engineering Services - ending 7/13/18	As-needed Engineering for Metering - Chapaton/SEMSED	
		Astorino	HESCO	\$ 26,678.00	Invoice #10269 - 7/12/18	Signature Meter Installation	
		Astorino	HESCO	\$ 14,666.00	Invoice #10272 - 7/18/18	Mag Meter Replacements	
		Astorino	Macomb County	\$ 27,420.00	Invoice #AR180541 - 7/17/18	Property Insurance Premium	
		Astorino	Macomb County	\$ 171,331.73	Invoice #AR180542 - 7/17/18	2nd Quarter Reimbursement - Personnel & Operating Expenses	
		Astorino	Marino's Landscape	\$ 1,100.00	Invoice #4720 - 7/31/18	Grass Cutting	
		Downing	Marino's Landscape	\$ 1,100.00	Invoice #4474 - 6/30/18	Grass Mowing	
		Astorino	Mill Creek Metal Works, Inc.	\$ 1,152.00	Invoice #00010131 - 6/29/18	Repair/Recondition 6 Steel Brackets - Chapaton RTB Flushing System	
		Astorino	Motor City Electric Technologies	\$ 21,508.33	Invoice #91912 - 6/13/18	Maintenance Contracts & Upgraded License Files	
		Astorino	Motor City Electric Technologies	\$ 505.42	Invoice #91946 - 7/11/18	Sonic Wall Renewal	
		Astorino	National Industrial Supply Co., Inc.	\$ 1,200.00	Invoice #75858 - 5/18/18	On-site Inspection of Magnetic Particle/Die Penetrant of Crane Hooks	
		Astorino	NEXGEN Utility Management	\$ 2,500.00	Invoice #2017 - 7/1/18	NEXGEN AM License Maintenance & Support	
		Astorino	St. Clair Shores	\$ 10,710.80	Quarterly Water - 3/15/18 - 6/14/18		
		Astorino	Sea-Side Diving, Inc.	\$ 2,300.00	Invoice #18-07-1313 - 7/13/18	Canal Outfall Gates Inspection	
		Astorino	Tetra Tech, Inc.	\$ 12,097.33	Invoice #51331858 - 7/13/18 Engineering Services - 7/13/18	Chapaton Expansion Study	\$ 86,767.67
		Astorino	Wade Trim	\$ 13,406.25	Invoice #2012204 - 8/1/18 Engineering Services - ending 7/28/18	Basin Segmentation/Disinfection System	\$ 104,093.75
		Astorino	Yates Industries, Inc.	\$ 970.00	Invoice #1000223681 - 7/18/18	Indicator Switches - Diversion Gate Control Cylinder	

\$ 321,566.55



# Sales and Service

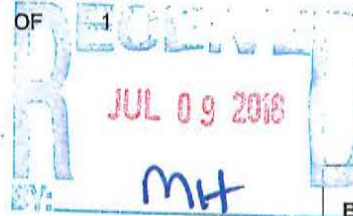
NEW HUDSON  
54250 Grand River Avenue  
New Hudson, MI 48165  
(248)573-1900

Payment terms are 30 days from invoice date unless otherwise agreed upon in writing.

Remit to: #774494  
4494 Solutions Center  
Chicago, IL 60677-4004

## PM CONTRACT INVOICE

PAGE 1 OF 1



### INVOICE NO

006-69778

Remit to: #774494  
4494 Solution Ctr. Chicago, IL 60677

PM#: 19

BILLING MONTH: February

START DATE: 01-OCT-2017

END DATE: 30-SEP-2018

REFERENCE #: BILL

### BILLING ADDRESS:

MACOMB COUNTY DPW  
21777 DUNHAM ROAD  
CLINTON TWP., MI 48036

### SITE ADDRESS:

CHAPATAN  
23001 NINE MILE ROAD  
ST CLAIR SHORES, MI 48080

PETER TROMBLEY  
(586) 772-3425

(586) 772-3425

DATE	CUSTOMER ORDER NO.	DATE IN SERVICE	ENGINE MODEL	PUMP NO.	EQUIPMENT MAKE
29-JUN-2018	SIGNED AGREEMENT		GFGA		ONAN
CUSTOMER NO.	SHIP VIA	FAIL DATE	ENGINE SERIAL NO.	CPL NO.	EQUIPMENT MODEL
133741			HM08H31673201		
REF. NO.	SALESPERSON	PARTS DISP.	MILEAGE/HOURS	PUMP CODE	UNIT NO.
	Daniel Roulo		191.8		CHAPATAN

QUANTITY ORDERED	BACK ORDERED	QUANTITY SHIPPED	PART NUMBER	DESCRIPTION	PRODUCT CODE	UNIT PRICE	AMOUNT

BILLING SCHEDULE: FULL SERVICE BILLABLE ON DATE : FEB-2018

INVOICE COMMENTS: ANNUAL GENERATOR MAINTENANCE FULL SERVICE

UNIT SUBTOTAL: 937.85

TAX EXEMPT NUMBERS:

Chy: 8 1/2 Mile

Date: 7.9.18  
 Chief Deputy: AB  
 Engineer(s):  
 Manager(s): UA  
 Coordinator(s): BS  
 Finance Officer: hkm

PA039893 93000

SUBTOTAL: 937.85

TAXES:

LOCAL 0.00

Staff 7-17-18  
Board 8-13-18

Billing Inquiries? Call 877-480-6970 or email CBSBridgeway.Receivables@cummins.com

THERE ARE ADDITIONAL CONTRACT TERMS ON THE REVERSE SIDE OF THIS DOCUMENT, INCLUDING LIMITATION ON WARRANTIES AND REMEDIES, WHICH ARE EXPRESSLY INCORPORATED HEREIN AND WHICH PURCHASER ACKNOWLEDGES HAVE BEEN READ AND FULLY UNDERSTOOD.

TOTAL DUE: US \$ 937.85





# Sales and Service

NEW HUDSON  
54250 Grand River Avenue  
New Hudson, MI 48165  
(248)573-1900

Payment terms are 30 days from invoice date unless otherwise agreed upon in writing.

Remit to: #774494

4494 Solutions Center  
Chicago, IL 60677-4004

## PM CONTRACT INVOICE

PAGE 1 OF 1

RECEIVED  
JUL 09 2018  
MH

### INVOICE NO

006-69780

Remit to: #774494  
4494 Solution Ctr. Chicago, IL 60677

### BILLING ADDRESS:

MACOMB COUNTY DPW  
21777 DUNHAM ROAD  
CLINTON TWP., MI 48036

### SITE ADDRESS:

CHAPATAN  
23001 NINE MILE ROAD  
ST CLAIR SHORES, MI 48080

PM#: 19

BILLING MONTH: January

START DATE: 01-OCT-2017

END DATE: 30-SEP-2018

REFERENCE #: BILL

PETER TROMBLEY

(586) 772-3425

(586) 772-3425

DATE	CUSTOMER ORDER NO.	DATE IN SERVICE	ENGINE MODEL	PUMP NO.	EQUIPMENT MAKE
29-JUN-2018	SIGNED AGREEMENT		GFGA		ONAN
CUSTOMER NO.	SHIP VIA	FAIL DATE	ENGINE SERIAL NO.	CPL NO.	EQUIPMENT MODEL
133741			HM08H31673201		
REF. NO.	SALESPERSON	PARTS DISP.	MILEAGE/HOURS	PUMP CODE	UNIT NO.
	Daniel Roulo		191.8		CHAPATAN

QUANTITY ORDERED	BACK ORDERED	QUANTITY SHIPPED	PART NUMBER	DESCRIPTION	PRODUCT CODE	UNIT PRICE	AMOUNT

BILLING SCHEDULE: 2HR LB BILLABLE ON DATE : JAN-2018

INVOICE COMMENTS: 2-HOUR LOAD BANK

UNIT SUBTOTAL: 715.23

TAX EXEMPT NUMBERS:

Chg: 8 1/2 Mile

Date	7-9-18
Chief Deputy	AB
Engineer (s)	
Manager (s)	UK
Coordinator (s)	BD
Finance Officer	Atm

PA039894 93000

SUBTOTAL: 715.23

TAXES:

LOCAL 0.00

Billing Inquiries? Call 877-480-6970 or email CBSBridgeway.Receivables@cummins.com

THERE ARE ADDITIONAL CONTRACT TERMS ON THE REVERSE SIDE OF THIS DOCUMENT, INCLUDING LIMITATION ON WARRANTIES AND REMEDIES, WHICH ARE EXPRESSLY INCORPORATED HEREIN AND WHICH PURCHASER ACKNOWLEDGES HAVE BEEN READ AND FULLY UNDERSTOOD.

TOTAL DUE: US \$

715.23

Staff 7-17-18  
Board 8-13-18



DE-CAL, Inc.  
 24659 Schoenherr Rd.  
 Warren, MI 48089-4775  
 Service Phone: 586-619-0281  
 Service Fax: 586-486-5242

RECEIVED  
 JUL 03 2018  
 BY: MH

**Service Invoice**

Invoice #: WO18280591

Date: 06/21/2018

**Billed To:** Macomb County Chapaton  
 23001 E. 9 Mile Rd.  
 St. Clair Shores MI 48080  
 Attn: Accounts Payable

**Location:** Macomb Chapaton Pumping  
 23001 E. 9 Mile Rd.  
 St. Clair Shores MI 48080

<b>Client PO#:</b>	<b>Employee:</b> Nick Dawson	<b>Due Terms:</b> 30DY
--------------------	------------------------------	------------------------

Assembly#	Part#	Description	Quantity	Price	Ext Price	Sales Tax
		See Attached	1.0000	1,791.000000	1,791.00	N

**Notes:**  
 See work order for details

Chg: 8 1/2 Mile

Date	7.3.18
Chief Deputy	BB
Engineer(s)	
Manager(s)	WA
Coordinator(s)	PD
Finance Officer	km

PA 039824 77500

De-Cal Service Group is a division of De-Cal, Inc.

Please Make Checks Payable to: De-Cal, Inc.

Thank you for your prompt payment!

Amount Due: \$ 1,791.00

Staff 7.17.18  
 Board 8.13.18

# Service Report

Service Report No : 928-18-059-1



Date: May 30, 2018

Client P.O. #: N/A

**HVAC Service**

Ready to Invoice/Work Complete

**Site:**

Chapton Station & Martin RTB  
23001 E. 9 Mile Rd., St. Clair Shores , MI ,

**Client:**

Macomb County Chapton  
23001 E. 9 Mile Rd., St. Clair Shores , MI ,  
48080

**Reason for Call:**

Per Chris, (586)772-3425. Perform maintenance on the Greenheck AHU, (2) AC units on the roof and the (2) AHUs in the mezzanine. Perform boiler shutdown for the year and reinstall the boiler circulating pump which is onsite. Possibly perform maintenance on the building to the east on the main station per Chris. Call Chris to schedule this call. Needs to be done in the next 2 weeks

**Description of Service:**

performed maintenance on hvac equipment, cleaned condenser coils on 1 rtu, 3 split system condensers, replaced filter on 1 rtu, 3 air handlers, checked and greased bearings where necessary, checked belts and adjusted tension. checked and verified proper operation of equipment.

performed maintenance on 1 greenheck mau, checked belts and tension, checked filters (were still in good condition), greased bearings, checked operation of dampers (checked good) checked wiring and contactors for wear or damage. unit in good condition

performed summer shutdown on boiler, replaced pump motor as per Chris on circulation pump.

checked out furnace in east building and recommended maintenance on furnace

**Technician Work**

Name	Date	Reg. hrs	Prem. hrs
Cliff Wilkerson	May 30, 2018	8	0
Jeff Smitty	May 30, 2018	8	0

# Account Information

MACOMB COUNTY  
MACOMB COUNTY DRAIN COMM  
21777 DUNHAM RD  
CLINTON TWP, MI 48036

18-373



**Account Number** 9100-0005-3785

DTE-Energy Federal ID No. 38-3217752

Programs you are enrolled in:

### How to contact us:

Power Outage See Detail Charges  
Billing Inquiry 1-734-397-4309

Please make any inquiry or complaint about this bill to DTE Energy before the Due Date.  
DTE Energy is regulated by the Michigan Public Service Commission, Lansing, Michigan

# Important Information

For the average Michigan residential customer, renewable energy is estimated to avoid \$3.08 per month of new coal-fired generation costs.

Chg: 8 1/2 Mile Rly

Date	6.30.18
Chief Deputy	BS
Engineer (s)	
Manager (s)	US
Coordinator (s)	SD
Finance Officer	Ann

PA-040007 92300



Staff 8-7-18  
Board 8-13-18



# Detail Charges

For Service at: 23001 E 9 Mile Rd, St Clair Shores, MI 48082

Outage Contact Number: 1-313-235-1300

Invoice: 210000577504

Billing Period: 06/11/2018 through 07/09/2018

Days Billed: 29

## Metering Information

Meter Number	Start Date	Start Read	Stop Date	Stop Read	Read Difference	Units Multiplier	Usage Used	Type
6321448	06/11	278.4A	07/09	283.9A	5.5	6,400.0000	35,200.0	P - In-V
6321448	06/11	347.1A	07/09	353.1A	6.0	6,400.0000	38,400.0	P - In-W
6321449	06/11	0.0A	07/09	0.0A	0.0	- 6400.0000	0.0	P - Out-W
6321449	06/11	0.8A	07/09	0.8A	0.0	- 6400.0000	0.0	P - Out-V
6321451	06/11	0.4A	07/09	0.4A	0.0	6,400.0000	0.0	P - In-V
6321451	06/11	0.4A	07/09	0.4A	0.0	6,400.0000	0.0	P - In-W
<b>Total KVARH</b>							<b>35,200.00</b>	
<b>Total KWH</b>							<b>38,400.00</b>	

Invoice: 210000577504 Service Name: Chapaton Pumping Station

Item: 7004376662 Cycle: 05

General Service Municipal Pumping-Net Metering Cat1

## Billing Status Information

1	On-peak Billing Demand	1290	KW	ESTABLISHED	06/27/2018	17:30
3	65% High OP Bill Dmd June-Oct prec 11 mths	1697	KW	ESTABLISHED	06/27/2018	17:30
8	Highest Single Billing Demand	1290	KW	ESTABLISHED	06/27/2018	17:30
A	Current PV High Monthly Demand	1290	KW	ESTABLISHED	06/27/2018	17:30
B	50% of the Contract Capacity for PV	0	KW			
C	Primary Voltage Maximum Demand	4101	KW	ESTABLISHED	08/28/2017	21:00
	Contract Capacity for Location	6738	KW	ESTABLISHED	08/16/2016	05:00
	Power Factor (ratio) for all voltages	73	PCT			
	Total Number of days in the Billing Period	29	DAYS			
	Avg Kilowatthours Used Per Day This Period	1324	KWH			
	Avg Kilowatthours Used Per Day A Year Ago	1241	KWH			
	kWh percentage change from a year ago	7	PCT			
	Metered outflow	0	KWH			
	Net Delivery Billed (inflow)	38400	KWH			
	Net Inflow (In - Out)	38400	KWH			

## Charges for 06/11/2018 through 07/09/2018

### Power Supply Charges:

Power Supply Energy:						
Power Supply Energy Charge	38,400	KWH			Per Total KWH	0.00
Power Supply Capacity Charge	38,400	KWH	@ \$	0.0321400	Per Total KWH	1,234.18
Power Supply Non Capacity Charge	38,400	KWH	@ \$	0.0477800	Per Total KWH	1,834.75
Surcharges:						
Power Supply Cost Recovery Factor	38,400	KWH	@ \$	-0.0008700	Per Total KWH	- 33.41
Sub Total:						3,035.52

### Delivery Charges:

Service Charge						11.25
Distribution:						
Distribution Energy	38,400	KWH	@ \$	0.0386500	Per Total KWH	1,484.16
Surcharges:						
Nuclear Surcharge	38,400	KWH	@ \$	0.0007650	Per Total KWH	29.38
Energy Waste Reduction	2	MTR	@ \$	37.2200000		74.44
LIEAF Factor	2	MTR	@ \$	0.9300000		1.86
Sub Total:						1,601.09
Special Facilities Charge						2,500.00

### Invoice Subtotal

7,136.61

Michigan State Sales Tax On Taxable Portion

0.00

### Invoice Total

\$7,136.61





Fishbeck, Thompson, Carr & Huber, Inc.  
 engineers | scientists | architects | constructors  
 Federal I.D. No. 38-1841857 | Incorporated

**Payment Options**

Remit Wire/ACH payments to Acct: 100094457 ABA: 072413829  
 Remit checks to: 1515 Arboretum Drive, SE | Grand Rapids, Michigan 49546

RECEIVED  
 JUL 23 2018  
 BY: mt

Attention: Mr Vincent Astorino  
 Macomb County Public Works Commissioner  
 21777 Dunham Road  
 Clinton Township, MI 48036  
 United States

Invoice: 376267  
 Invoice Date: 7/23/2018  
 Project: 130622  
 Project Name: Macomb Co PW/As-needed Assist  
 Bill Term: 1

For Professional Services Rendered Through 7/13/2018

		<u>Current</u>
		<u>Billings</u>
J - Macomb Co PW/SEMSD_Chapaton Meters		2,340.00
Rate Labor	2,340.00	
		2,340.00
	<b>Current Billings</b>	<u>2,340.00</u>
	<b>Amount Due This Bill</b>	<u>2,340.00</u>

Chg: 8 1/2 Mile Rly

Date	<u>7.23.18</u>
Chief Deputy	<u>AB</u>
Engineer(s)	
Manager(s)	<u>UA</u>
Coordinator(s)	<u>BD</u>
Finance Officer	<u>km</u>

PA040056 80300

Staff 8.7.18 09-0014.22

Board 8.13.18



Knowledgeable • Professional • Attentive • Likeable

28838 Van Dyke • Warren, MI 48093  
Phone: 586.978.7200 • Fax: 586.978.2200  
www.hesco-mi.com



Invoice No. 10269

Date: 07/12/2018

Billed To: Macomb County Public Works  
21777 Dunham Road  
Clinton Twp MI 48036

Project: 2018251S 8.5 Mile Laser Flow Metering Stations

Contact: Vince Astorino

P.O.# 4-10-234

Due Date: 08/11/2018

Description	Qty	Rate	Amount
Signature Meter - Malvern Ave.	1.000	16,557.00	16,557.00
Signature Meter - 9 Mile Bypass & Rention Basin Outlet	1.000	9,871.00	9,871.00
Freight	1.000	250.00	250.00

Chg: 8 1/2 Mile

Date	7-16-18
Chief Deputy	AB
Engineer(s)	
Manager(s)	UA
Coordinator(s)	3D
Finance Officer	HMM

PA039998 70100

Staff 8-7-18

Thank you for your prompt payment!

Board 8-13-18

Non-Taxable Amount:	26,678.00
Taxable Amount:	0.00
Sales Tax:	0.00
<b>Amount Due</b>	<b>26,678.00</b>



Invoice No. 10272

Knowledgeable • Professional • Attentive • Likeable  
28838 Van Dyke • Warren, MI 48093  
Phone: 586.978.7200 • Fax: 586.978.2200  
www.hesco-mi.com

Date: 07/18/2018

Billed To: Macomb County Public Works  
21777 Dunham Road  
Clinton Twp MI 48036

Project: 161026 Macomb 8 1/2 Mile Repair

Contact: Vince Astorino P.O.# 09-0014.45 T-IIA Due Date: 08/17/2018

Description	Qty	Rate	Amount
8 1/2 Mile Task IIA Chapaton Mag Meter Replacements	2,000	7,333.00	14,666.00

Chg: 8 1/2 Mile

Date	7-19-18
Chief Deputy	AB
Engineer(s)	
Manager(s)	VA
Coordinator(s)	BD
Finance Officer	MM

PA 040044 93000

09-004.45-3

Thank you for your prompt payment!

Staff 8-7-18  
Board 8-13-18

Non-Taxable Amount:	14,666.00
Taxable Amount:	0.00
Sales Tax:	0.00
<b>Amount Due</b>	<b>14,666.00</b>



PREMIUM BY DISTRICT 18/19	Premium	Insurance (91000)	Pre-paid Ins (12301)
MIDDD	\$16,098.00	\$4,024.50	\$12,073.50
MIDDD - Infrastructure	\$12,000.00	\$3,000.00	\$9,000.00
MIDDD	\$28,098.00	\$7,024.50	\$21,073.50
MIDDD - NGI	\$947.00	\$236.75	\$710.25
8.5 Mile Relief	\$27,420.00	\$6,855.00	\$20,565.00
Martin	\$6,518.00	\$1,629.50	\$4,888.50
SEMCWWDS	\$2,090.00	\$522.50	\$1,567.50
Clinton River Spillway	\$2,000.00	\$500.00	\$1,500.00
<b>TOTAL PREMIUM 18/19</b>	<b>\$67,073.00</b>	<b>\$16,768.25</b>	<b>\$50,304.75</b>

July:

pay

Payment Terms:

Due Upon Receipt

Invoice Date

07/17/2018

Invoice

AR180541

REF DATE	DESCRIPTION	AMOUNT
07/17/2018	2018-19 PROP PREM DRAIN DISTRI	67,073.00
	<b>Charges</b>	<b>67,073.00</b>
	<b>Amount Due</b>	<b>67,073.00</b>

Date 8-1-18  
 Chief Deputy AB  
 Engineer(s) \_\_\_\_\_  
 Manager(s) UA  
 Coordinator(s) BD  
 Finance Officer BEW

PA040171

\*\*\*\*\* PLEASE RETURN THIS PORTION WITH YOUR PAYMENT \*\*\*\*\*

Finance Department Contact Number:

(586) 469-5251

Tax ID # / EIN Number:

38-6004868

Please email any questions about your account to:

Accounting@MacombGov.Org

Customer Number:

DPWK BA

Invoice Number:

AR180541

Please remit your payment to:

COUNTY OF MACOMB  
 FINANCE DEPARTMENT  
 120 NORTH MAIN STREET, 2nd FLOOR  
 MOUNT CLEMENS, MI. 48043-5622

Invoice Date:

07/17/2018

Amount Due:

~~\$67,073.00~~

Staff 8-7-18  
 Board 8-13-18

27,420.00 pay

Payment Terms:

Due Upon Receipt

Invoice Date

07/17/2018

Invoice

AR180542

REF DATE	DESCRIPTION	AMOUNT
07/17/2018	2ND QTR 18 CHAPOTON-PERSONNEL	168,658.13
07/17/2018	2ND QTR 18 CHAPOTON-OPERATING	2,673.60
07/17/2018	2ND QTR 18 WASTE WTR-PERSONNEL	347,409.04
07/17/2018	2ND QTR 18 WASTE WTR-OPERATING	4,307.20
<b>Charges</b>		<b>523,047.97</b>
<b>Amount Due</b>		<b>523,047.97</b>

\*\*\*\*\* PLEASE RETURN THIS PORTION WITH YOUR PAYMENT \*\*\*\*\*

Finance Department Contact Number:

(586) 469-5251

Tax ID # / EIN Number:

38-6004868

Please email any questions about your account to:

Accounting@MacombGov.Org

Customer Number:

DPWK BA

Invoice Number:

AR180542

Please remit your payment to:

COUNTY OF MACOMB  
FINANCE DEPARTMENT  
120 NORTH MAIN STREET, 2nd FLOOR  
MOUNT CLEMENS, MI. 48043-5622

Invoice Date:

07/17/2018

Amount Due:

\$523,047.97

Chg: 8 1/2 Mile \$171,331.73

Date	7.20.18
Chief Deputy	MA
Engineer(s)	
Manager(s)	VA
Coordinator(s)	BD
Finance Officer	RAM

PA 040063 70200

Staff 8-7-18  
Koard 8-13-18

Marino's Landscape  
 51879 Schoenherr Rd  
 Shelby Twp, MI 48315  
 586-803-3860



Macomb County Public Works Office  
 21777 Dunham Rd.  
 Clinton Twp, MI 48036

PO #  
 Invoice # **4474**  
 Invoice Date 6/30/2018

**Invoice Balance 1100.00**

Email: Lori@marinoslandscape.com  
 Website: www.marinoslandscape.com

Date	Description	Qty	Price	Total
6/7/2018	Lawn Maintenance	1.00	275.00	275.00
6/13/2018	Lawn Maintenance	1.00	275.00	275.00
6/21/2018	Lawn Maintenance	1.00	275.00	275.00
6/27/2018	Lawn Maintenance	1.00	275.00	275.00

Terms Due on receipt  
 For 23001 E. 9 Mile Rd., St Clair Shores MI 48080

Subtotal 1100.00  
 Invoice Total 1100.00

**Invoice Balance 1100.00**

Chapaton RTB

Chg: 8 1/2 Mile RIF (0017)

Date 7-13-18  
 Chief Deputy AB  
 Engineer(s) SD  
 Manager(s) \_\_\_\_\_  
 Coordinator(s) BD  
 Finance Officer BHM

PA039969 77502

**PAYMENT STUB**

Client Name Macomb County Public Works Office  
 For 23001 E. 9 Mile Rd., St Clair Shores MI 48080  
 Invoice # 4474  
 Invoice Date 6/30/2018  
 Invoice Balance 1100.00  
 Amount Enclosed **1100.00**

Marino's Landscape  
 51879 Schoenherr Rd  
 Shelby Twp, MI 48315

Card #	
Exp. Date	
Signature	

Invoices are due by terms listed. A monthly Finance Charge of 1 1/2% will be added monthly to balance 30 days past due.  
 NEW PAYMENT OPTION: Call our office to set up a credit card on your account!

Thank you for choosing Marino's Landscape.

Staff 7-17-18  
 -Kend 8-13-18  
 Balance \$6325.00

Marino's Landscape  
 51879 Schoenherr Rd  
 Shelby Twp, MI 48315  
 586-803-3860



Macomb County Public Works Office  
 21777 Dunham Rd.  
 Clinton Twp, MI 48036

PO #  
 Invoice # 4720  
 Invoice Date 7/31/2018

**Invoice Balance 1100.00**

Email: Lori@marinoslandscape.com  
 Website: www.marinoslandscape.com

Date	Description	Qty	Price	Total
7/4/2018	Lawn Maintenance	1.00	275.00	275.00
7/11/2018	Lawn Maintenance	1.00	275.00	275.00
7/18/2018	Lawn Maintenance	1.00	275.00	275.00
7/25/2018	Lawn Maintenance	1.00	275.00	275.00

Terms Due on receipt  
 For 23001 E. 9 Mile Rd. - Chapaon 8 1/2 Mile, St Clair Shores MI 48080

Subtotal 1100.00  
 Sales Tax  
 Invoice Total 1100.00

**Invoice Balance 1100.00**

Chg: 8 1/2 Mile

Date 8.3.18

Chief Deputy (B)

Engineer (S)

Manager (M) W

Coordinator (C) BD

Finance Officer

Client Name Macomb County Public Works Office  
 For 23001 E. 9 Mile Rd. - Chapaon 8 1/2 Mile, St Clair Shores MI 48080  
 Invoice # 4720  
 Invoice Date 7/31/2018  
 Invoice Balance 1100.00

**PAYMENT STUB**

Marino's Landscape  
 51879 Schoenherr Rd  
 Shelby Twp, MI 48315

Card #	
Exp. Date	
Signature	

Amount Enclosed

Invoices are due by terms listed. A monthly Finance Charge of 1 1/2% will be added monthly to balance 30 days past due.

NEW PAYMENT OPTION: Call our office to set up a credit card on your account!

Thank you for choosing Marino's Landscape.

\$5,225.00 Balance

Staff 8-7-18  
 Board 8-13-18

# MILL CREEK METAL WORKS, INC.

**Invoice #: 00010131**

Bill To:

MACOMB COUNTY PUBLIC WORKS  
23001 E. Nine Mile Road  
St. Clair Shores, MI 48080

Ship To:

MACOMB COUNTY PUBLIC WORKS  
23001 E. Nine Mile Road  
St. Clair Shores, MI 48080

RECEIVED  
JUL 13 2018  
BY: MIT

## INVOICE

YOUR PO #			SHIP VIA	SHIP DATE	TERMS	DATE	
7735/062218					Net 30	6/29/18	
QTY	ITEM	JOB #	DESCRIPTION		PRICE	UNIT	EXTENDED
6	99	7735	RECONDITION EXISTING BLADE GATE VALUE BRACKETTS		\$192.00	EACH	\$1,152.00
1	99		PICK UP BY MCPW.			EACH	

Chg: 8 1/2 Mile

Date: 7.13.18

C. I. P. Party: BO

Engineer(s):

Manufacturer: WA

Coordinator(s): BO

Finance Officer: Btm

PA-039953 93000

Total Amt.: \$1,152.00

MILL CREEK METAL WORKS INC  
203 COMMERCE DRIVE YALE MI 48097  
PH: 810-387-4395 FX: 810-387-3500

EMAIL: MILLCREEK@AIRADV.NET

Balance Due: \$1,152.00

Staff 7-17-18  
Board 8-13-18



**MOTOR CITY ELECTRIC TECHNOLOGIES INC.**  
AUTOMATION AND CONTROLS SOLUTIONS  
 9440 GRINNELL  
 DETROIT, MI 48213-1151  
 PHONE (313) 921-5300 FAX (313) 921-5310  
 \*AN EQUAL OPPORTUNITY EMPLOYER\*

# INVOICE

**RECEIVED**  
 JUL 16 2018  
 mt

Job Number	918500	Sub Job	0	Contract Number	001	Date Performed	6/13/2018	Date	7/9/2018	Application Number	91912
------------	--------	---------	---	-----------------	-----	----------------	-----------	------	----------	--------------------	-------

Customer: MACOMB COUNTY PUBLIC WORKS  
 PO Number: 21777 DUNHAM ROAD  
 CLINTON TOWNSHIP, MI 48036

JOE BETZ

Item No	Description of Work	Contract Amount	Previous Billings	Current Amount	To Date Complete & Stored	Balance To Finish	Current Retainage
001	MACOMB COUNTY T&M	\$71,694.41	-	\$71,694.41	\$71,694.41	-	-
<b>Totals:</b>		\$71,694.41		\$71,694.41	\$71,694.41		
<b>Less Retained:</b>							
<b>Invoice Total:</b>				\$71,694.41			

AS NEEDED ELECTRICAL AND ENGINEERING SERVICE

SEE ATTACHED INVOICE SUMMARY AND FIELD REPORT

SPLIT TO ALL

Chg:  
 MIDDD \$30,828.60  
 OMID \$5018.60  
 8 1/2 Mile Rlf \$21,508.33  
 Martin \$8,961.80  
 SEMCOWDS \$5,377.08

Date 6-30-18  
 Chief Deputy AB  
 Engineer(s) \_\_\_\_\_  
 Manager(s) WA  
 Coordinator(s) BD  
 Finance Officer btm

PA040015 80700

Staff 8-7-18  
 Board 8-22-18

complete electrical construction

"We hereby certify that the articles and services covered by this invoice were produced and performed in compliance with all applicable requirements of Section 6, 7 and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof."





**MOTOR CITY ELECTRIC TECHNOLOGIES INC.**  
 AUTOMATION AND CONTROLS SOLUTIONS  
 9440 GRINNELL  
 DETROIT, MI 48213-1151  
 PHONE (313) 921-5300 FAX (313) 921-5310  
 \*AN EQUAL OPPORTUNITY EMPLOYER\*

# INVOICE

DEC 27 2018  
 MT

13030 MACOMB COUNTY PUBLIC WORKS  
 21777 DUNHAM ROAD  
 CLINTON TOWNSHIP, MI 48036

JOE BETZ

Job Number	918500	Sub Job	0	Contract Number	001	Date Performed	7/11/2018	Date	7/25/2018	Application Number	91946
------------	--------	---------	---	-----------------	-----	----------------	-----------	------	-----------	--------------------	-------

Item No	Description of Work	Contract Amount	Previous Billings	Current Amount	To Date Complete & Stored	Balance To Finish	Current Retainage
001	MACOMB COUNTY T&M	\$1,684.75	-	\$1,684.75	\$1,684.75	-	-
Totals:		\$1,684.75	-	\$1,684.75	\$1,684.75	-	-
Less Retained:-							
Invoice Total:		\$1,684.75		\$1,684.75			

AS NEEDED ELECTRICAL AND ENGINEERING SERVICE

SEE ATTACHED INVOICE SUMMARY AND FIELD REPORT

SPLIT TO ALL: \$1,684.75

Chg: MIDD \$ 842.38  
 8 1/2 Mile \$ 505.42  
 Martin \$ 201.59  
 SEMCOWDS \$ 126.36

Date 7.27.18  
 Chief Deputy AB  
 Engineer (s) \_\_\_\_\_  
 Manager (s) UK  
 Coordinator (s) SD  
 Finance Officer btm

18040127 80700

Staff 8.7.18  
 Board 8.13.18

complete electrical construction

\*We hereby certify that the articles and services covered by this invoice were produced and performed in compliance with all applicable requirements of Section 6, 7 and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof.\*







National Industrial Supply Co., Inc.  
 1201 Rochester Rd.  
 Troy, MI 48083  
 www.nischain.com

Invoice Number: 75858

Invoice Date: May 18, 2018

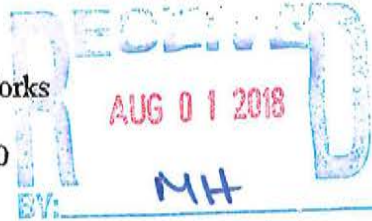
Voice: (248) 588 - 1828

Fax: (248) 588 - 6829

"A Minority Owned Company"  
 ISO 9001:2000 Certified

Sold To:

Macomb County Public Works  
 23001 Nine Mile Road  
 St. Clair Shores, MI 48080



Ship To:

Macomb County Public Works  
 23001 Nine Mile Road  
 St. Clair Shores, MI 48080

Customer ID  
 M0047

Purchase Order Number  
 18-9327

Payment Terms  
 Net 30 Days

Shipped	B/O	Item Number	Description	Price Ea.	Ext. Price
1.00		0300	<p>On-Site Inspection, Magnetic Particle/Dye Penetrant of customers Crane Hooks with mobile test unit in accordance with governing regulatory standards</p> <p>Inspection Date: May 18, 2018</p> <p>Chg: 8 1/2 Mile</p> <div style="border: 1px solid black; padding: 5px;"> <p>Date <u>8-1-18</u></p> <p>Chief Deputy <u>AB</u></p> <p>Engineer(s) _____</p> <p>Manager(s) <u>VA</u></p> <p>Coordinator(s) <u>BD</u></p> <p>Finance Officer <u>DM</u></p> </div> <p>PA 040178 93000</p>	1,200.00	1,200.00

Subtotal 1,200.00

Sales Tax

TOTAL \$1,200.00

Staff 8-7-18  
 Board 8-13-18

**NEXGEN Utility Management**

4010 Lennane Drive  
Sacramento, CA 95834

**Invoice**

Invoice #: 2017

Invoice Date: 7/1/2018

Due Date: 7/16/2018

Terms Net 15

P.O. Number:

**Bill To:**

Macomb County Public Works  
Vincent Astorino  
21777 Dunham Road,  
Clinton Township, MI 48036



Item	Description	Hours/Qty	Rate	Class	Serviced	Amount
NEXGEN AM License ...	NEXGEN AM License Maintenance & Support 7/1/18-6/30/19 No Sales Tax	5	2,000.00	AM		10,000.00
			0.00%	AM		0.00

Chg: MIDD \$2500  
8 1/2 Mile \$2500  
Martin \$2500  
SEMCHWDS \$2500

Date 7-9-18

Chief Deputy AB

Engineer(s) \_\_\_\_\_

Manager(s) UA

Coordinator(s) BD

Finance Officer hkm

PA 039912

Direct Deposit: Bank of America Routing: 121000358 Account: 07031 41840  
Send remittances to: vyee@nexgenum.com.

<b>Total</b>	\$10,000.00
<b>Payments/Credits</b>	\$0.00
<b>Balance Due</b>	\$10,000.00

Phone #	E-Mail
916.564.8000	vyee@nexgenam.com

Staff 7-17-18  
Board 8-13-18



# St. Clair Shores Water Bill

ACCOUNT NUMBER

23287-00

SERVICE ADDRESS

23001 NINE MILE

SERVICE TYPE

Government

PREVIOUS READ

1205

CURRENT READ

1278 A

CONSUMPTION

868

FROM: SERVICE PERIOD TO:

03/15/2018

06/14/2018

DUE DATE

07/23/2018

PAY AFTER DUE DATE

11246.34

PAY BY DUE DATE

10710.80

PREVIOUS BALANCE	0.00
Water	4112.58
Sewer	5576.90
Customer Chg	342.00
Retention Basins O&M	0.49
Storm Water	678.83

**CURRENT BALANCE 10710.80**

**MONTHLY BUDGET**

Temp-Return Service Requested

8249 1 AB 0.408

8249-8249-20

MACOMB COUNTY PUBLIC WORKS  
21777 DUNHAM RD  
CLINTON TWP MI 48036-1005

JUL 09 2018

MH

Chg: 8 1/2 Mile - Chap West

18.305

Date 7.9.18  
 Chief Deputy BB  
 Engineer (s) \_\_\_\_\_  
 Manager (s) VA  
 Coordinator (s) SD  
 Finance Officer BAM

PLEASE RETAIN THIS UPPER PORTION FOR YOUR RECORDS.  
YOUR CANCELLED CHECK IS YOUR RECEIPT.

Water rate: \$4.738/unit  
 Sewer rate: \$6.425/unit  
 Total rate: \$11.163  
 One unit = 748 gallons

PA039887 92100



City of  
St. Clair  
Shores

27600 Jefferson Ave.  
St. Clair Shores, MI 48081

FOR FURTHER INFORMATION PLEASE CALL:  
 BILLING INFORMATION - (586) 447-3317  
 SERVICE INFORMATION - (586) 445-5374  
 VISIT US ON THE WEB AT [www.scsmi.org](http://www.scsmi.org)

To Pay by Credit Card or Electronic Check



Visit [www.scsmi.org](http://www.scsmi.org)

Online Payments and Services

or call 1-855-414-9009 (credit card only)

Point and Pay LLC, the service provider, charges a fee for this service of:  
 3.00% for credit cards (\$1.50 minimum)  
 Electronic checks are provided as a FREE service.

**IMPORTANT INFORMATION - SEE REVERSE SIDE**

REMOVE DOCUMENT ALONG THIS PERFORATION  
 AND MAKE SURE RETURN ADDRESS APPEARS THROUGH WINDOW

Staff 7.17.18  
 Board 8.13.18

# Sea-Side Diving Inc.



# INVOICE

28612 Harper Avenue  
 St Clair Shores, MI 48081  
 Phone 586-772-7676 Fax 586-772-3581

**INVOICE # 18-07-1313**  
**DATE: 07/13/18**

**Bill To:**  
 Macomb County Office of Public Works  
 Attn: Pete Trombley  
 23001 E 9 Mile Rd  
 St Clair Shores, MI 48080

**Ship To:**  
 Same

**Comments or Special Instructions:** None

SALESPERSON	P.O. NUMBER	SHIP DATE	SHIP VIA	F.O.B. POINT	TERMS
Paul Skoglund					Net 30

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1	Dive services on July 12, 2018 at Chapaton Sluice gates	\$2300.00	\$2300.00
SUBTOTAL			\$2300.00
SALES TAX			
SHIPPING & HANDLING			
<b>TOTAL DUE</b>			<b>\$2300.00</b>

Make all checks payable to **Sea-Side Diving, Inc.**  
 If you have any questions concerning this invoice, contact Paul Skoglund at 586-772-7676

**THANK YOU FOR YOUR BUSINESS!**

*Chg: 8 1/2 Mile*

Date	<u>7.27.18</u>
Chief Deputy	<u>AB</u>
Engineer(s)	
Manager(s)	<u>U/A</u>
Coordinator(s)	<u>SD</u>
Finance Officer	<u>ARM</u>

*Staff 8-7-18*  
*Board 8-13-18*

**PAID 0137 93000**



Tetra Tech, Inc.  
 424 Lewis Hargett Circle  
 Ste. 110  
 Lexington, KY 40503  
 (859) 223-8000

RECEIVED  
 JUL 23 2018  
 BY: MH

**BILL TO:** MACOMB COUNTY  
**ATTN:** FINANCE DEPARTMENT  
 OFFICE OF PUBLIC WORKS  
 COMMISSIONER  
 21777 DUNHAM RD  
 PO BOX 806  
 CLINTON TOWNSHIP, MI 48036

**INVOICE NUMBER:** 51331858  
**INVOICE DATE:** 07/13/2018  
**SERVICES THROUGH:** 06/29/2018  
**FEDERAL TAX ID#:** 95-4148514  
**TERMS:** NET 30

Project Contact - Vincent Astorino - vincent.astorino@macombgov.org  
 Notice of Award 2/14/18

**PROFESSIONAL SERVICES:**

Project Number	200-16347-18001	Macomb Chapaton Expansion Study-MCPWO Project: MCPWO-WWS-2018-004		
Top Task	001	Study		
EMPLOYEE	TITLE	CURRENT LABOR HOURS	LABOR RATE	CURRENT LABOR AMOUNT
Irgang, Laura M.	Project Engineer 1	33.00	\$150.00	\$4,950.00
Kaliman, Roger G.	Sr Engineer 1	0.50	\$190.00	\$95.00
Rubel, Brian M.	Program Manager	1.00	\$200.00	\$200.00
Takacs, Krista M.	Project Engineer 1	11.50	\$150.00	\$1,725.00
Voss, Justin D.	Project Engineer 1	8.00	\$150.00	\$1,200.00
<b>TOTAL LABOR</b>		<b>54.00</b>		<b>\$8,170.00</b>
		<b>SUBTOTAL</b>		<b>\$8,170.00</b>
		<b>Total Top Task# 001</b>		<b>\$8,170.00</b>
Top Task	003	Sub-ASTI		
SUBCONTRACTOR	TYPE			CURRENT AMOUNT
ASTI ENVIRONMENTAL	Subcontractor-External			\$3,570.30
<b>TOTAL SUBCONTRACTOR CHARGES</b>				<b>\$3,570.30</b>
			Plus Mark-up	357.03
			<b>SUBTOTAL</b>	<b>\$3,927.33</b>
		<b>Total Top Task# 003</b>		<b>\$3,927.33</b>
		<b>Total Project# 200-16347-18001</b>		<b>\$12,097.33</b>

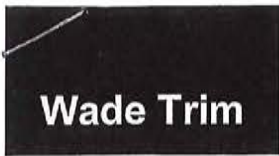
**TOTAL AMOUNT DUE THIS INVOICE:** \$12,097.33

Chg: 8 1/2 Mile

Date	7.23.18
Chief Deputy	AS
En. Inscr(s)	
Manager(s)	NA
Coordinator(s)	3D
Finance Officer	DMM

PA 040071 80300

Staff 8-7-18  
 Board 8-13-18  
 Contract balance: \$86,762.67<sup>38</sup>



Wade Trim  
 500 Griswold Street • Suite 2500 • Detroit, MI 48226  
 313.961.3650 • FAX: 313.961.0898 • www.wadetrिम.com  
 Federal ID 38-1802386

# INVOICE

Terms: Net 30 Days  
 1.5% Per Month After 30 Days  
 18% Annual Rate

Macomb County Public Works  
 P.O. Box 806  
 Mt. Clemens, MI 48046-0806  
 Attention: Stephen Downing  
 Engineer II-Waste Water Services

Invoice Date : August 1, 2018  
 Invoice # : 2012204  
 Project # : MCW200401D

Remit payment to : Wade Trim  
 500 Griswold Street  
 Suite 2500  
 Detroit, MI 48226

**Re: Basin Segmentation/Disinfection Sys**

For Professional Services rendered through 7/28/2018

Chapaton RTB Segmentation&Disinfect

WWS 18-006

Total Salaries	\$13,406.25
Total Expenses	\$0.00
Professional Services Rendered	<b>\$13,406.25</b>

**Amount Due This Invoice \$13,406.25**

*Chg: 8 1/2 Mile*

Date 8.2.18  
 Chief Deputy JB  
 Engineer(s) SP  
 Manager(s) JA  
 Coordinator(s) BD  
 Finance Officer mm

**PA 040175 80300**

Statement	
Prior Invoices	\$0.00
This Invoice	\$13,406.25
Total Invoiced	\$13,406.25
Paid to Date	\$0.00
Amount Outstanding	\$13,406.25

Fee Summary	
Authorized Fee	\$117,500.00
Total Invoiced	\$13,406.25
Amount Remaining	\$104,093.75

*Staff 8.7.18  
 K... 8.13.18*



**Yates Industries, Inc.**  
 23050 Industrial Drive East  
 St. Clair Shores, MI 48080  
 (586) 778-7680 Fax (586) 778-6565  
 http://www.yatesind.com

Invoice No I000223681

Customer 391091



Bill to :

MACOMB COUNTY PUBLIC WORKS COMM.  
 23001 9 MILE RD.  
 ST. CLAIR SHORES MI 48080  
 United States of America

Sold to :

MACOMB COUNTY PUBLIC WORKS COMM.  
 23001 9 MILE RD.  
 ST. CLAIR SHORES MI 48080  
 United States of America

*Attm: A/P*

Customer Phone (586) 772-3425

Sales Order Fax (586) 466-6824

Customer Fax (586) 772-8881

Customer PO Number	Invoice Date	Terms	FOB	Ship Via	Salesperson
DIVERSION GATE	07/18/2018	NET 30 DAYS	OUR PLANT	OUR TRUCK	RJD
Item	Part / Rev / Description / Details	Quantity	Unit Price	Discount	Extended Price
000010	7FH743758-A2 GO SWITCH Rev NS U/M EA 7FH743758-A2 GO SWITCH ORIGINALLY INSTALLED ON YATES S/N G1054 Packing List No/Item No: 177003/000001 Sales Order No: 147145 Customer PO No: DIVERSION GATE	2.000	485.00000	0.00	970.00
				Total Item Price	970.00
				Shipping	0.00
				Sales Tax	0.00
				Total Inv Price	\$ 970.00
UPS# SHIPPED TO ADDRESS: MACOMB COUNTY PUBLIC WORKS COMM. 23001 9 MILE RD. ST. CLAIR SHORES MI 48080 United States of America  Please pay balance due by Friday August 17, 2018. PAYMENT IS U.S. DOLLARS ONLY PLEASE MAKE ALL CHECKS PAYABLE TO YATES INDUSTRIES <i>Chg: 8 1/2 Mile</i> <div style="border: 1px solid black; padding: 5px;">             Date <u>7.27.18</u>              Chief Deputy <u>AB</u>              Engineer(s) _____              Manager(s) <u>VA</u>              Coordinator(s) <u>BD</u>              Finance Officer <u>btm</u> </div> <u>PA-040111</u> <u>93000</u>					

*Staff 8-7-18*  
 CUSTOMER COPY  
*Board 8-13-18*



**Income Statement**  
**8.5 Mile Relief**  
**As of July 31, 2018**

	9-30-2017 Total Fund	10-1-17 to 6-30-18 O&M	Jul-18 O&M	Total 7/31/2018
<b>Revenues</b>		2,836,739	11,089	2,847,828
<b>Expenditures</b>		1,179,985	266,105	1,446,090
<b>Equity**</b>	3,105,754			4,507,492

**NOTES**

Reserves as of Sept 30, 2017	600,000
Required SRF repair & replacement reserve balance 9/	1,308,558
Total	1,908,558

**\*\* Broken out as follows:**

Engineering carryover balance at 9/30/2017	356,050
Repair and Maintenance carryover at 9/30/2017	422,000
SCADA reserve at 9/30/2017	40,000
Equipment carryover balance at 9/30/2017	131,800
Required SRF repair & replacement reserve balance 9/	1,308,558
Emergency Reserve	600,000