### PUBLIC UTILITIES

The existing utilities listed below and shown on these plans represent the best information available as obtained on our surveys. This information does not relieve the contractor of the responsibility to be satisfied as to it's accuracy and the location of existing utilities.

<table>
<thead>
<tr>
<th>Name of Owner</th>
<th>Type Of Utility</th>
<th>Telephone</th>
<th>Attn:</th>
<th>E-mail</th>
</tr>
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<tbody>
<tr>
<td>AT&amp;T Co</td>
<td>Telephone</td>
<td>248-454-2396</td>
<td>Tamara Hardin, Legal Mandates</td>
<td><a href="mailto:g2564@att.com">g2564@att.com</a> and <a href="mailto:th1978@att.com">th1978@att.com</a></td>
</tr>
<tr>
<td>Pontiac, MI 48342</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M4 N. Mill St</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DTE Gas Co</td>
<td>Electric Transmission</td>
<td>586-883-7253 (m) 810-588-7534</td>
<td>Mike Ohannesian</td>
<td><a href="mailto:DTE_Electric_MDOT_Requests@dteenergy.com">DTE_Electric_MDOT_Requests@dteenergy.com</a></td>
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<tr>
<td>Clinton Twp, MI 48036</td>
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<td></td>
<td></td>
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<tr>
<td>1 Energy Plaza</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>DTE Energy Co</td>
<td>Electric</td>
<td>586-531-5841</td>
<td>Martinez Gallina</td>
<td><a href="mailto:martin.gallina@michcon.com">martin.gallina@michcon.com</a></td>
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<tr>
<td>Detroit, MI 48226</td>
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<td></td>
<td></td>
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<tr>
<td>1 M-19 Mile Rd</td>
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<td>Chesterfield Twp, MI 48051</td>
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<td>DTE Gas Co (old MichCon Co)</td>
<td>Gas</td>
<td>810-459-0283</td>
<td>Connor Stevenson</td>
<td><a href="mailto:Connor.stevenson@semcoenergy.com">Connor.stevenson@semcoenergy.com</a></td>
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<tr>
<td>New Haven, MI 48048</td>
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<tr>
<td>DTE Comcast Co</td>
<td>CATV</td>
<td>6959 Wall St</td>
<td>Greg Blosser</td>
<td><a href="mailto:blosserg@dteenergy.com">blosserg@dteenergy.com</a></td>
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<td>Holt, MI 48842</td>
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### NOTES APPLYING TO STANDARD PLANS

Where the following items are called for on plans, they are to be constructed according to the standard plan given below opposite each item unless otherwise indicated.

<table>
<thead>
<tr>
<th>Title</th>
<th>Plan No.</th>
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<tbody>
<tr>
<td>DRAINAGE STRUCTURES</td>
<td>R-1G-1</td>
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<tr>
<td>BEAPER &amp; PARKING RAILS AND MISC. WOOD POSTS</td>
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<td>GRANULAR BLANKET, UNDERBASIN, OUTLET ENDINGS FOR UNDERBASIN, AND SEWER BULKHEADS</td>
<td>R-80-E</td>
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<tr>
<td>BEDDING AND FILLING AROUND PIPE CULVERTS</td>
<td>R-82-D</td>
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<tr>
<td>UTILITY TRENCHES</td>
<td>R-83-C</td>
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<tr>
<td>PRECAST CONCRETE END SECTION FOR PIPE CULVERT</td>
<td>R-86-E</td>
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<tr>
<td>STEEL END SECTION</td>
<td>R-88-E</td>
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<tr>
<td>CULVERT SLOPED END SECTION</td>
<td>R-90-F</td>
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<td>SOIL EROSION &amp; SEDIMENTATION CONTROL MEASURES</td>
<td>R-96-E</td>
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<tr>
<td>SEEDING AND TREE PLANTING</td>
<td>R-100-H</td>
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<tr>
<td>GRADING CROSS SECTIONS</td>
<td>R-105-G</td>
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<td>PAVE-800-C</td>
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<td>LONGITUDINAL LINE TYPES AND PLACEMENT</td>
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<td>PAINTING MARKINGS FOR INTERSECTIONS</td>
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<tr>
<td>INTERSECTION, STOP AND CROSSWALK MARKINGS</td>
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### FUNDING CATEGORIES

| JN 116807 M-19 | 20 Mls Road Passing Plans Category 0001 = Fed + State |
| JN 122243 M-19 | 20 Mls Road Passing Plans Category 0001 = Fed + State |

### PROJECT INFORMATION SHEET

<table>
<thead>
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<tr>
<td>1</td>
<td>Section 1 - Road Plans</td>
</tr>
<tr>
<td>2</td>
<td>Project Information</td>
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<tr>
<td>3</td>
<td>Legend</td>
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<td>Title</td>
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<tr>
<td>5</td>
<td>FUNDING CATEGORIES</td>
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<tr>
<td>6</td>
<td>NOTES APPLIYING TO STANDARD PLANS</td>
</tr>
<tr>
<td>7</td>
<td>SHEET INDEX</td>
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### SPECIAL DETAILS

- This document contains various categories including Public Utilities, Notes Applying to Standard Plans, Funding Categories, and Project Information Sheet.
UTLITIES

COMBINED SEWER
- PROPOSED ITEMS
- EXISTING ITEMS

SANITARY SEWER
- PROPOSED ITEMS
- EXISTING ITEMS

COMMUNICATION
- PROPOSED ITEMS
- EXISTING ITEMS

FUEL / PETROLEUM
- PROPOSED ITEMS
- EXISTING ITEMS

NATURAL GAS
- PROPOSED ITEMS
- EXISTING ITEMS

WATER
- PROPOSED ITEMS
- EXISTING ITEMS

STEAM
- PROPOSED ITEMS
- EXISTING ITEMS

GENERIC EXISTING UTILITIES
- PROPOSED ITEMS
- EXISTING ITEMS

NOTE:
- PROPOSED ITEMS ARE REPRESENTED BY HEAVIER LINE WEIGHTS.
- EXISTING ITEMS ARE REPRESENTED BY THIN LINE WEIGHTS.
GENERAL NOTES

UTILITIES

MISS DIG/UNDERGROUND UTILITY NOTIFICATION

For the protection of utilities in-conformance with Public Act 174 of 2013, the Contractor shall contact MISS DIG System, Inc. by phone at 811 or 800-482-7171 or via the web at either elocate.missdig.org for single address or rte.missdig.org, a minimum of 3 business days prior to excavating, excluding weekends and holidays.

MDOT ITS system includes traffic cameras, changeable message signs, detection equipment, fiber optic cable, other sensors and related communication devices, and equipment in, over, or along the roadway. ITS staking requests per the Special Provision for Protect ITS Infrastructure should be Emailed on MDOT Form 5300 (http://www.mdot.state.mi.us/publicfiles/forms/public/5300.pdf) to: MDOT-ITS-Staking-Missouri@mdot.state.mi.us.

MDOT ELECTRICAL SYSTEMS

Contractors shall contact the maintenance representative at the MDOT Region / TSC Office to have MDOT electrical systems staked.

OUT OF SERVICE UTILITIES

If plan information indicates an existing underground utility is or will be out of service within the limits of this contract, the Contractor is to treat such a line as if it were still in service and notify “Miss Dig” when working in the area of the out of service facility.

EXISTING WATER MAINS AND SEWERS

The Contractor shall be responsible for any damage to properly identified existing water mains and/or existing sewers during the construction of this project.

ROW / REAL ESTATE

PROPERTY OWNERS

The names of property owners shown on the plans are for information only, and their accuracy is not guaranteed.

MARKETABLE TIMBER

Marketable timber shall be handled in accordance with Section 201.03 of the 2012 Standard Specifications for Construction.

LAWN SPRINKLER SYSTEMS AND LANDSCAPING

Owners of existing lawn sprinkler systems and/or landscaping shall be notified in writing with a copy sent to the Engineer. The Contractor shall place the salvaged sprinkler heads on the property owner’s property. If the property owner fails to retrieve the lawn sprinkler system prior to the Contractor beginning work, and if the Contractor cuts the system during the construction, the Contractor shall cap the system pipe and witness the location of the cap with a wooden stake for the property owner’s use. The Contractor shall place the salvaged sprinkler heads on the property owner’s property. If the property owner fails to locate the sprinkler system prior to the Contractor beginning work, the Contractor shall safely salvage the sprinkler system and stockpile them on the property owner’s property for the property owner. Any other modification to the lawn sprinkler systems and/or landscaping is the responsibility of the owner and is not part of this contract. This work is included in other items of the project.

SURVEY

ADJUSTING MONUMENT BOXES

All government corners on this project shall be preserved, whether shown or not. It may be necessary to place or adjust monument boxes, as required.

OLD PLANS

OLD ROAD PLANS

The following old road plans were referred to in the design of this project. C.I.50002 JN 102713.

In addition, other old road plans that predate this project may be available. Those plans may be reviewed in the Transportation Service Center (TSC) during normal working hours.

DETAILED GRADES

GRADES FOR INTERSECTIONS

All intersections are to be considered as complete units and their grades determined before construction is started.

UNIONIZED SIDE ROAD TO TRUNK LINE INTERCEPTIONS

The normal edge of pavement grade of the proposed trunk line adjacent to the side road intersection shall be carried across the intersection. The side road approach grade and crown shall be established to provide for drainage.

EARTHWORK

EARTHWORK

Earthwork quantities are computed by the average and area method based upon ground survey information.

SLOPES

Class A slopes shall be constructed on this project.

EARTH DISTURBANCE LIMITS

The earth disturbance limit for this project will be limited to 10’ beyond the slope stake line or to the ROW line whichever is less for all areas except for wetland areas. For areas adjacent to wetlands, the earth disturbance limit will be limited to the slope stake line. Restoration measures have been included in this set of plans for the approved areas of disturbance. The Contractor shall submit an earth change plan for any work beyond the approved limits to the Engineer to review for approval prior to the disturbance. All costs for obtaining and executing an approved earth change plan, including restoration, shall be at the Contractor’s expense.

SOIL EROSION MEASURES

Appropriate soil erosion and sedimentation control measures shall be in place prior to earth-disturbing activities. Place turf establishment items by the Engineer prior to beginning work. No equipment is permitted within the drip line of existing trees to remain.

Branches of all trees to be saved shall not be removed, or damaged by construction equipment. All equipment to be used must be approved by the engineer prior to beginning work.

Storage of equipment and materials will be restricted to areas designated by the Engineer. No equipment is permitted within the drip line of existing trees to remain.

REST AREA AND/OR LANDSCAPING

Existing vegetation shall not be damaged during construction operations, per the 2012 Standard Specifications for Construction.

Heavy equipment will not be allowed to work outside the slope stake lines in this project. All equipment to be used must be approved by the engineer prior to beginning work.

TURF ESTABLISHMENT

SEED MIXTURE

The symbol for the permanent turf seed mixture on this project is symbol TURF.

PAVEMENT

PAVEMENT AND HMA SURFACE REMOVAL QUANTITIES

Pavement and HMA Surface removal as shown on the plans will be at the discretion of the Engineer. If in his/her judgement, areas of pavement may be left in place, or additional areas added to provide the proper cross-section and base. Changes will be made in the quantities.

SOIL BORINGS AND/OR PAVEMENT CORES

The soil boring logs and/or pavement cores represent point information. No inference should be made that subsurface or pavement conditions are the same at other locations.

GUARDRAIL

GUARDRAIL CONNECTIONS TO EXISTING GUARDRAIL

Connections of proposed guardrail to existing guardrail shall be field designed. Any additional cost for this work shall be included in the pay item of the proposed guardrail.

GUARDRAIL POST HOLES

Posts to be located in 3’ of existing culverts shall be in drilled holes and shall not be driven.

TURF ESTABLISHMENT

SEED MIXTURE

The symbol for the permanent turf seed mixture on this project is symbol TURF.

REST AREA AND/OR LANDSCAPING

Existing vegetation shall not be damaged during construction operations, per the 2012 Standard Specifications for Construction.

Heavy equipment will not be allowed to work outside the slope stake lines in this project. All equipment to be used must be approved by the engineer prior to beginning work.

Storage of equipment and materials will be restricted to areas designated by the Engineer. No equipment is permitted within the drip line of existing trees to remain.

Branches of all trees to be saved shall not be removed, or damaged by construction equipment. If removal of lower branches is necessary, contact Roadside Development or the Region Resource Specialist for proper methods.

Do not trench within the drip line of existing trees to remain unless specifically approved by the Engineer.

Contractor shall promptly restore any property damage at no expense to MDOT.

Guardrail, called for, shall be removed when all signs, supports and foundations behind the guardrail have been removed, unless otherwise approved by the Engineer.

SIGN INSTALLATION

When attaching signs to supports, tighten the nut, not the bolt head.

Nylon washers shall be placed between the steel washer and the sign face sheeting. The nylon washers are to be considered part of the attaching devices and hardware. Nylon washers shall have a 3/8 inch inner diameter; a 7/8 inch outer diameter and a 1/8 inch thickness.

The Contractor shall attach a date sticker to the back of all signs installed on the contract. Stickers will be supplied to the Contractor at the time of award. Stickers will be supplied by MDOT Operations Field Services Division Statewide Sign Shop, Lansing, which can be contacted at 517-352-3357.

GUARDRAIL REMOVAL

Guardrail, called for, shall be removed when all signs, supports and foundations behind the guardrail have been removed, unless otherwise approved by the Engineer.

SIGNS

ALL SIGNS shall be installed, removed and/or salvaged according to the current edition of “Michigan Manual on Uniform Traffic Control Devices” and the current edition of Michigan Department of Transportation (MDOT) “Standard Specifications for Construction.”

All signs on the plans or in the log that do not have a recommendation are to be retained.

EXISTING SIGN LOCATION

Any permanent signs requiring relocation due to Contractor operations shall be salvaged and reset by the Contractor at locations designated by the Engineer. Signs and posts damaged during the removal and storage operations shall be replaced with new signs and posts. The cost of this work shall be borne by the Contractor.

At least two weeks prior to construction to remove / relocate Michigan Logs or tourist oriented directional signs; the Contractor shall contact Mike Kowalczyk, (888) 845-6467 from Michigan Logs.

SIGN LAYOUT

Sign layouts shall be according to the current English edition of “Standard Highway Signs” manual or as detailed in plans. Legend length shall be determined using the “SignCAD” software.

SHEETING

Handling and installation of all signs shall conform to the sheeting manufacturer's specifications and guidelines.

Splice sheathing used for Type I signs with a 3” overlap.

Signs that have wrinkled or twisted sheathing may be rejected.

SIGN INSTALLATION

When attaching signs to supports, tighten the nut, not the bolt head.

Nylon washers shall be placed between the steel washer and the sign face sheeting. The nylon washers are to be considered part of the attaching devices and hardware. Nylon washers shall have a 3/8 inch inner diameter; a 7/8 inch outer diameter and a 1/8 inch thickness.

The Contractor shall attach a date sticker to the back of all signs installed on the contract. Stickers will be supplied to the Contractor at the time of award. Stickers will be supplied by MDOT Operations Field Services Division Statewide Sign Shop, Lansing, which can be contacted at 517-352-3357.

GUARDRAIL REMOVAL

Guardrail, called for, shall be removed when all signs, supports and foundations behind the guardrail have been removed, unless otherwise approved by the Engineer.

CONTRACTOR

Protect existing sidewalks from damage.

DO NOT TRENCH WITHIN THE DRAINAGE SYSTEM.
## MISCELLANEOUS QUANTITIES

The following items of work shall be done as they apply throughout the project. These items are not detailed or included on the plan and profile sheets.

### PROJECT WIDE

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<tr>
<th>JN 116807</th>
<th>JN 129243</th>
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### SOIL EROSION AND SEDIMENTATION CONTROL

The following items of work shall be done as directed by the Engineer. These items are in addition to the items shown on the plans.

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<td>Sft</td>
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<td>Ea</td>
<td>Sign, Portable, Changeable Message, NTCIP-Compliant, Furn</td>
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<td>Ea</td>
<td>Driveway Maintenance</td>
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### PERMANENT PAVEMENT MARKINGS

<table>
<thead>
<tr>
<th>JN 116807</th>
<th>JN 129243</th>
<th>CAT 0001</th>
<th>Unit</th>
<th>Pay Item</th>
</tr>
</thead>
<tbody>
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<td>100</td>
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<td>Ft</td>
<td>Pavt Mrkg, Sprayable Thermop, 4 inch, Yellow</td>
<td></td>
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<tr>
<td>350</td>
<td>350</td>
<td>Ft</td>
<td>Pavt Mrkg, Sprayable Thermop, 6 inch, White</td>
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</tbody>
</table>
Michigan Department of Transportation

**SECTION APPLIES TO:**

- M-19 STA 1499+00.00 TO STA 1510+00.00
- M-19 STA 1500+10.00 TO STA 1501+50.00
- M-19 STA 1504+06.71 TO STA 1504+86.21
- M-19 STA 1501+50 TO STA 1502+14.80
- M-19 STA 1499+00.00 TO STA 1500+10.00

**EXISTING TYPICAL SECTION APPLIES TO:**

- M-19 STA 1500+00.00 TO STA 1501+50.00

**PROPOSED TYPICAL SECTION APPLIES TO:**

- M-19 STA 1499+00.00 TO STA 1501+50.00

**PROPOSED HALF SECTION SECTION APPLIES TO:**

- M-19 STA 1500+00.00 TO STA 1501+50.00

**EXISTING TYPICAL SECTION APPLIES TO:**

- M-19 STA 1500+00.00 TO STA 1501+50.00

**PROPOSED TYPICAL SECTION APPLIES TO:**

- M-19 STA 1499+00.00 TO STA 1501+50.00

**EXISTING TYPICAL SECTION APPLIES TO:**

- M-19 STA 1500+00.00 TO STA 1501+50.00

**PROGRAMMED FOR:**

- Pavement, REM
- HMA Surface, REM
- Pavement, HMA, 0 to 2 inches
- Pavement, REM
- Pavement, HMA, 0 to 2 inches
- Pavement, HMA, 0 to 2 inches
- Pavement, REM
- Pavement, HMA, 0 to 2 inches
- Pavement, REM
- Pavement, HMA, 0 to 2 inches
- Pavement, REM
- Pavement, HMA, 0 to 2 inches
- Pavement, REM
- Pavement, HMA, 0 to 2 inches
- Pavement, REM
- Pavement, HMA, 0 to 2 inches
- Pavement, REM
- Pavement, HMA, 0 to 2 inches

**ELEVATION:**

- 0' - 2'
- 0' - 8'
- 12'
- 2' - 3'
- 0' - 11'
- 0' - 6'
- 0' - 5'
- 0' - 12'
- 0' - 12'
- 0' - 11'
- 0' - 11'
- 0' - 12'
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- 0' - 12'
- 0' - 12'
- 0' - 12'

**SHEETS:**

- M-19 AT ARlington Drive

**FILE:**

1919243_TYPICAL_001.dgn

**DATE:**

04/19/17

**FILE NAME:**

1919243A_MACOMB 04/19/17

**TYPICAL SHEET**

M-19 AT ARlington Drive
FIGURE 3-0992  MISCELLANEOUS DETAIL SHEET  CURVING  OIL  ROAD  SHOULDER  AND  PROPOSED  CENTERLINE

SECTION A-A

SECTION B-B

BACK OF DRIVE OFFSET FROM ALL PER DRIVEWAY TABLE

AGGREGATE BASE, 6 INCH

EMBANKMENT, CIP

SECTION B-B

BACK OF DRIVE OFFSET FROM ALL PER DRIVEWAY TABLE

AGGREGATE BASE, 15 INCH

EMBANKMENT, CIP
**PRIMARY CONTROL**

NO PRIMARY CONTROL WAS SET

**INTERMEDIATE CONTROL**


STATE PLANE COORDINATES: N 464948.536, E 1554805.449, Z 650.760

Sta=643+00.80, On=149.87 COMBINED SCALE FACTOR: 0.9999126911

1. S70°E 38.43 FT MAG NAIL SOUTHWEST FACE OF 12" POPLAR
2. S70°W 17.34 FT MAG NAIL NORTH FACE OF 12" POPLAR
3. N40°W 96.92 FT LAG SCREW IN SOUTH FACE POWER POLE
4. NORTH 38.57 FT MAG NAIL IN CONCRETE PAVEMENT

CP2 - SET 58" IN X 3 FT IRON WITH WHITE CONTROL POINT CAP 42" SOUTH OF THE CENTERLINE OF 29 MILE RD AND 58" EAST OF THE CENTERLINE OF M-19.

STATE PLANE COORDINATES: N 464956.996, E 1554963.771, Z 652.248

Sta=642+51.91, On=48.74 COMBINED SCALE FACTOR: 0.99991542863

1. S30°E 28.53 FT SPIKE/TAG IN SOUTHWEST FACE GUIDE POLE

**BENCHMARKS**

BM #10 - LAG SCREEN IN SOUTH FACE CENTERLINE POWER POLES IN THE NORTHEAST QUADRANT OF THE INTERSECTION OF M-19 AND 29 MILE RD.

STATE PLANE COORDINATES: N 465030.255, E 1554753.456, Z 653.023

Sta=643+44.09 On=64.22

1. S80°W 14.05 FT NORTHEAST CORNER CATCH BASIN
2. S30°W 68.42 FT SPIKE/TAG IN POWER POLE
3. N10°W 47.94 FT CENTERLINE OF HYDRANT
4. EAST 7.00 FT NORTH LEG OF STOP SIGN

BM #11 - BM TIE IN SOUTH FACE CUT OFF POLE

STATE PLANE COORDINATES: N 465022.238, E 1554610.405, Z 651.770

Sta=642+67.39 On=-55.97

1. S20°W 71.81 FT MAG NAIL IN EAST FACE OF 6" ASH
2. S45°W 7.15 FT CONTROL POINT #43
3. S80°W 23.01 FT CENTERLINE OF MANHOLE
4. N40°W 1.96 FT EAST FACE OF POWER POLE

BM #12 - ON HYDRANT

STATE PLANE COORDINATES: N 464465.832, E 1554510.636, Z 649.610

Sta=638+90.60 On=-43.09

1. N45°E 2.15 FT BENCH TIE IN SOUTH FACE OF CUT OFF POLE
2. S85°W 16.27 FT CENTERLINE OF MANHOLE
3. S10°W 65.11 FT MAG NAIL IN EAST FACE OF 6" ELM
4. N30°E 7.42 FT MAG NAIL IN WEST FACE OF POWER POLE

ALIGNMENT(S) POINTS

LEGAL LOCATION POINTS:

30,46141.81,583,15554917.543,649.354,ALL-MUT-CAP
31,46565.93,15354469.039,652.354,ALL-MUT-CAP
32,46565.93,15354683.479,652.696,ALL-CENTER BOX
33,467786.658,15355239.402,658.744,ALL-DISC

**SECTION CORNERS**

NW CORNER SECTION 23, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

NE CORNER SECTION 22, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

SOUTHWEST CORNER 24, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

COMMON WITH T44N-R14E CORNERS

PT 20, N 464886.283, E 1555464.151 FOUND MONUMENT BOX WITH 3/4" X 2 FT IRON

N45°E 70.45 FT NAIL IN NW FACE OF UTILITY POLE

520°W 82.20 FT NAIL IN EAST FACE OF 14" ELM

45°E 46.88 FT MAG NAIL IN SW FACE OF POWER POLE

N0°E 40.76 FT LAG BOLT IN SOUTH FACE POWER POLE

NE CORNER SECTION 23, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

SW CORNER SECTION 24, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

COMMON WITH T44N-R14E CORNERS

PT 20, N 464810.525, E 15556681.607 FOUND MONUMENT BOX WITH 3/4" X 2 FT IRON

N0°E 46.89 FT NAIL IN EAST FACE 14" TREE

N0°E 19.96 FT NAIL/TAG ON TOP OF GUARD RAIL

S10°E 20.67 FT NAIL/TAG ON TOP OF GUARD RAIL

CENTER SECTION 23, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

PT 24, N 462389.985, E 15534299.953 FOUND 4" X 3 FT CONCRETE MONUMENT

N95°E 8.97 FT NAIL/TAG IN NW FACE OF 8" MAPLE

S45°E 18.46 FT NAIL/TAG IN SW FACE OF 10" MAPLE

N35°W 2.17 FT NAIL/TAG IN NW FACE OF 10" MAPLE

N0°E 34.58 FT NAIL/TAG IN EAST FACE OF 12" MAPLE

NORTH 1/4 CORNER SECTION 23, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

SOUTHWEST CORNER SECTION 14, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

PT 21, N 464882.883, E 15554156.628 FOUND 3/4" X 2 FT IRON

S47°E 37.68 FT NAIL/TAG #32774 IN NE FACE OF 8" TREE

S47°E 38.33 FT NAIL/TAG IN NE FACE OF 8" TREE

SOUTH 23.03 FT IRON WITH CAP #20505

N45°W 106.75 FT NAIL/TAG IN NE FACE OF UTILITY POLE

CENTER SECTION 14, T44N-R14E, LENOX TOWNSHIP, MACOMB COUNTY, MICHIGAN

PT 23, N 467705.379, E 15354222.835 FOUND 4" X 3 FT CONCRETE MONUMENT

NORTH 31.12 FT NAIL/TAG IN EAST FACE 8" TREE

N25°E 36.11 FT NAIL/TAG IN NE FACE OF 10" TREE

NORTH 19.96 FT FOUND 1/2" IRON

N31°E 31.53 FT NAIL/TAG IN SW FACE OF 10" TREE

---

**NOTES**

**COMPANY:** MUXLOW SURVEYING

**DATE:** 05/26/15

**VERTICAL DATUM:** NAVD 88

**GEOID:** GEOID12

**COORDINATE SYSTEM:** STATE PLANE GRID

**ZONE:** MICHIGAN SOUTH 213

**GROUND DISTANCE CONVERSION:** GROUND DISTANCE / ACSF

**COMBINED SCALE FACTOR:** (THE COMBINED SCALE FACTOR (CSF) FOR EACH CONTROL POINT IS SHOWN ON THIS SHEET. AVERAGE COMBINED SCALE FACTOR (ACSF) = (CSF1 + CSF2)/2

**HORIZONTAL CONTROL POINTS HELD FIXED IN ADJUSTMENTS:** NEW HAVEN CORS & MARINE CITY CORS

**VERTICAL CONTROL POINTS HELD FIXED IN ADJUSTMENTS:** NGS MONUMENT PID DI6108

**UNITS:** INTERNATIONAL FEET

**FILE:** Survey.doc

---

**PLANNED ELEVATION**

ELEVATIONS SHOWN ON THESE PLANS ARE FROM GROUND SURVEY, BY MUXLOW SURVEYING. DATED 5/29/15.
NOTES

COORDINATE SYSTEM: STATE PLANE GRID
ZONE: MICHIGAN SOUTH 2113
ELLIPSOID: GRS 80
HORIZONTAL DATUM: NAD 83 (NSRS 2011)
VERTICAL DATUM: NAVD 88
GEOD: 2013A
UNITS: INTERNATIONAL FEET
SURVEY FIRM: SURVEYING SOLUTIONS, INC.

CONTROL ESTABLISHED: AUGUST, 2016

COORDINATE SYSTEM:
STATE PLANE GRID
ZONE: MICHIGAN SOUTH 2113
ELLIPSOID: GRS 80
HORIZONTAL DATUM: NAD 83 (NSRS 2011)
VERTICAL DATUM: NAVD 88
GEOD: 2013A
UNITS: INTERNATIONAL FEET
SURVEY FIRM: SURVEYING SOLUTIONS, INC.

GROUND DISTANCE CONVERSION
THE COMBINED SCALE FACTOR (CSF) FOR EACH CONTROL POINT IS INCLUDED IN THE CONTROL POINT LIST.

AVG COMBINED SCALE FACTOR (ACSF) = (CSF1 + CSF2)/2
GROUND DISTANCE = GRID DISTANCE / ACSF

PLAN ELEVATION
ELEVATIONS SHOWN ON THESE PLANS ARE FROM DIFFERENTIAL LEVELING PERFORMED FROM NGS MONUMENTATION POINTS 50624 (PID: D0630 DES: 50624) AND 50672 (PID: D0614 DES: 50672) DATED AUGUST 4, 2016.

CONTROL PT#: 101
DESCRIPTION: SET 6" X 36" IRON ROD AND SSI CAP IN THE SOUTHEAST QUADRANT OF M-19 AND ARLINGTON ROAD, +/-3'
EAST OF SIDEWALK
COORDINATES: N=452831.807 E=13547819.428 EL= 619.706
SDN= 0.023 SDE= 0.010 SDZ= 0.003
COMBINED SCALE FACTOR: 0.9998863
WITNESSES:
1. N20°E 24.42' CENTERLINE OF BEEHIVE CATCH BASIN
2. N87°E 14.63' TOP NUT OF FIRE HYDRANT
3. N40°E 5.12' EDGE OF SIDEWALK
4. N65°W 4.25' EDGE OF SIDEWALK

CONTROL PT#: 102
DESCRIPTION: SET 6" X 36" IRON ROD AND SSI CAP IN THE NORTHWEST QUADRANT OF M-19 AND 27 MILE ROAD
COORDINATES: N=453769.893 E=13548235.400 EL= 623.181
SDN= 0.015 SDE= 0.010 SDZ= 0.003
COMBINED SCALE FACTOR: 0.9998860
WITNESSES:
1. N20°E 24.42' CENTERLINE OF BEEHIVE CATCH BASIN
2. N87°E 14.63' CENTERLINE OF CATCH BASIN
3. N55°W 10.60' EDGE OF SIDEWALK
4. N60°E 12.00' BACK OF CURB

BENCHMARKS

BENCHMARK#: 200
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON EAST SIDE OF M-19, +/-350' SOUTH OF CLAWSON ROAD
ELEVATION: 618.666 SDZ= 0.003

BENCHMARK#: 201
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON WEST SIDE OF M-19, ACROSS FROM ARLINGTON ROAD
ELEVATION: 620.928 SDZ= 0.003

BENCHMARK#: 202
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON EAST SIDE OF M-19, +/-400' SOUTH OF 27 MILE ROAD, IN FRONT OF PNG BANK
ELEVATION: 623.369 SDZ= 0.003

BENCHMARK#: 203
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON EAST SIDE OF M-19, +/-400' SOUTH OF 27 MILE ROAD, IN FRONT OF PNG BANK
ELEVATION: 623.369 SDZ= 0.003

BENCHMARK#: 204
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON WEST SIDE OF M-19, ACROSS FROM ARLINGTON ROAD
ELEVATION: 620.928 SDZ= 0.003

COORDINATE SYSTEM:
STATE PLANE GRID
ZONE: MICHIGAN SOUTH 2113
ELLIPSOID: GRS 80
HORIZONTAL DATUM: NAD 83 (NSRS 2011)
VERTICAL DATUM: NAVD 88
GEOD: 2013A
UNITS: INTERNATIONAL FEET
SURVEY FIRM: SURVEYING SOLUTIONS, INC.

GROUND DISTANCE CONVERSION
THE COMBINED SCALE FACTOR (CSF) FOR EACH CONTROL POINT IS INCLUDED IN THE CONTROL POINT LIST.

AVG COMBINED SCALE FACTOR (ACSF) = (CSF1 + CSF2)/2
GROUND DISTANCE = GRID DISTANCE / ACSF

PLAN ELEVATION
ELEVATIONS SHOWN ON THESE PLANS ARE FROM DIFFERENTIAL LEVELING PERFORMED FROM NGS MONUMENTATION POINTS 50624 (PID: D0630 DES: 50624) AND 50672 (PID: D0614 DES: 50672) DATED AUGUST 4, 2016.

CONTROL PT#: 101
DESCRIPTION: SET 6" X 36" IRON ROD AND SSI CAP IN THE SOUTHEAST QUADRANT OF M-19 AND ARLINGTON ROAD, +/-3'
EAST OF SIDEWALK
COORDINATES: N=452831.807 E=13547819.428 EL= 619.706
SDN= 0.023 SDE= 0.010 SDZ= 0.003
COMBINED SCALE FACTOR: 0.9998863
WITNESSES:
1. N20°E 24.42' CENTERLINE OF WATER MANHOLE
2. N87°E 14.63' TOP NUT OF FIRE HYDRANT
3. N40°E 5.12' EDGE OF SIDEWALK
4. N65°W 4.25' EDGE OF SIDEWALK

CONTROL PT#: 102
DESCRIPTION: SET 6" X 36" IRON ROD AND SSI CAP IN THE NORTHWEST QUADRANT OF M-19 AND 27 MILE ROAD
COORDINATES: N=453769.893 E=13548235.400 EL= 623.181
SDN= 0.015 SDE= 0.010 SDZ= 0.003
COMBINED SCALE FACTOR: 0.9998860
WITNESSES:
1. N20°E 24.42' CENTERLINE OF BEEHIVE CATCH BASIN
2. N87°E 14.63' CENTERLINE OF CATCH BASIN
3. N55°W 10.60' EDGE OF SIDEWALK
4. N60°E 12.00' BACK OF CURB

BENCHMARKS

BENCHMARK#: 200
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON EAST SIDE OF M-19, +/-350' SOUTH OF CLAWSON ROAD
ELEVATION: 618.666 SDZ= 0.003

BENCHMARK#: 201
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON WEST SIDE OF M-19, ACROSS FROM ARLINGTON ROAD
ELEVATION: 620.928 SDZ= 0.003

BENCHMARK#: 202
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON EAST SIDE OF M-19, +/-400' SOUTH OF 27 MILE ROAD, IN FRONT OF PNG BANK
ELEVATION: 623.369 SDZ= 0.003

BENCHMARK#: 203
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON EAST SIDE OF M-19, +/-400' SOUTH OF 27 MILE ROAD, IN FRONT OF PNG BANK
ELEVATION: 623.369 SDZ= 0.003

BENCHMARK#: 204
DESCRIPTION: ARROW ON TOP OF FIRE HYDRANT ON WEST SIDE OF M-19, ACROSS FROM ARLINGTON ROAD
ELEVATION: 620.928 SDZ= 0.003
M-19 (GRATTIS AVE)

110+00 TO 112+95.70 POE

E X 60'
R O W

M-19 (GRAFITOS AVE)

LENOX TWP
T.4N, R.14E
SECTION 14

12.830
832010
5.048
112+95.70
116807A
50092

CS: 50092
JN: 116807A
STA: 112+95.70
CS WP 50092
PR #: 832010
PR MP: 12.830

POE

FILE: 116807_ALI_REM_CON_PVMK_003.dgn

003

M-19 STA 110+00 TO STA 112+95.70 POE

M-19 (GRAFITOS AVE)
**Alignment Sheet**

**M-19 NON-LEGAL (B) ALI**

- **CS:** 50092
- **CN:** 129243A
- **STA:** 1499400.00
- **PC MP:** 223
- **PR #:** 832010
- **PR MP:** 10.015

**T = 424.82'**
- **L = 849.20'**
- **R = 10,789.47'**
- **E = 8.36'**

**PC**
- **N = 452,503.96 E = 13,547,525.54**
  - **= 1498+71.51**

**PI**
- **N = 452,855.58 E = 13,547,763.95**
  - **= 1502+96.33**

**PT**
- **N = 453,224.84 E = 13,547,973.97**
  - **= 1507+20.71**

**Village of New Haven**
- **T4N, R14E**
- **Section 34**
**Description:**

- **Title:** M-19 STA 1508+00 TO STA 1512+50 POE
- **Authors:** MACOMB JAHAN
- **File:** 129243_ALI_REM_CON_PVMK_003.dgn
- **Date:** 04/19/17

**Data:**

- **Section:** 34
- **Township:** T4N, R14E
- **Range:** 129243A
- **Lot:** 50092
- **Lot:** 50092
- **PR MP:** 129243A
- **PR #:** 50092
- **CS:** 129243A
- **N:** 1512+50.00
- **S:** 1512+50.00
- **HORZ. (FT):** 5.271
- **VERT. (FT):** 2.489

**Notes:**

- **M-19 GRADE AV: 100 ' EX ROW
  60 ' EX ROW
- **M-19 NON-LEGAL: 10.271
  832010
- **M-19 LEGAL: 8.271
  1512

- **VILLAGE OF NEW HAVEN**

- **Michigan Department of Transportation**

**References:**

- **M-19 LEGAL (B) ALI
  M-19 NON-LEGAL (B) ALI

- **M-19 LEGAL (A) ALI
  M-19 NON-LEGAL (A) ALI

- **M-19 LEGAL (C) ALI
  M-19 NON-LEGAL (C) ALI

- **M-19 LEGAL (D) ALI
  M-19 NON-LEGAL (D) ALI

- **M-19 LEGAL (E) ALI
  M-19 NON-LEGAL (E) ALI

- **M-19 LEGAL (F) ALI
  M-19 NON-LEGAL (F) ALI

- **M-19 LEGAL (G) ALI
  M-19 NON-LEGAL (G) ALI

**Legend:**

- **Symbol Key:**
  - **N:** North
  - **S:** South
  - **E:** East
  - **W:** West

**Scale:**

- **1 inch = 100 feet**

**Drawn by:**

- **Peter M. D.**

**Checked by:**

- **J. R. H.**

**Approved by:**

- **R. L. M.**

**Drawn:** 04/19/17

**Control Sheet:** 006

**Scale:** 1 inch = 100 feet

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QUANTITIES THIS SHEET

1. Turf Establishment, Performance
2. Riprap, Plain, LM
3. HMA Approach
4. Underdrain, Outlet Ending, 6 inch
5. Underdrain Outlet, 6 inch
6. Underdrain, Subbase, 6 inch
7. Culv, Slp End Sect, Ellip Pipe, 1 on 6, 29 inch by 45 inch, Longit
8. Culv, Reinf Conc Ellip, HE Cl IV, 29 inch by 45 inch
9. Shoulder, Cl II, 8 inch
10. Aggregate Base, 15 inch
11. Aggregate Base, 12 inch
12. Erosion Control, Silt Fence
13. Erosion Control, Sediment Trap
14. Erosion Control, Check Dam, Stone
15. Embankment, CIP
M-19 STA 110+00 TO STA 112+95.70 POE

CAT 0001
JN 116807
#1

Turf Establishment, Performance
HMA Approach
Underdrain, Outlet Ending, 6 inch
Underdrain Outlet, 6 inch
Underdrain, Subbase, 6 inch
Shoulder, Cl II, 8 inch
Aggregate Base, 15 inch
Aggregate Base, 12 inch
Erosion Control, Sediment Trap
Erosion Control, Check Dam, Stone
Embankment, CIP

Construction Sheet 116807 - 3 | 40 | Construction (All)
(browser)
(tab)
(All)
(All)
116807_CON_003
QUANTITIES THIS SHEET

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<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>BC</td>
<td>Culv, Rem, Less than 24 inch</td>
</tr>
<tr>
<td>BC</td>
<td>Pavt, Rem</td>
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<tr>
<td>BC</td>
<td>Excavation, Earth</td>
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<tr>
<td>BC</td>
<td>HMA Surface, Rem</td>
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<tr>
<td>BC</td>
<td>Post, Mailbox</td>
</tr>
<tr>
<td>BC</td>
<td>Micro Cold Milling, HMA, 0 to 2 inches</td>
</tr>
</tbody>
</table>

ARLINGTON DRIVE |

JAMES CURTIN DRIVE
M-19 (GRATIOT AVE)

M-19 (GRATIOT AVE)

VILLAGE OF NEW HAVEN
T4N, R14E
SECTION 34

M-19 NON-LEGAL (B) ALI

M-19 STA 1508+00 TO STA 1512+50 POE

QUANTITIES THIS SHEET

115 Syd Post, Mailbox
005 Cyl Excavation, Earth
006 Syd Mill Surface, Pavt
260 Post, Mailbox

FILE: 129243_ALI_REM_CON_PVMK_003.dgn

DATE: 04/19/17

DESIGN UNIT: MACOMB JAHAN

DRAWING SHEET 0

DATE NO. 006

VERT. (FT) 36

HORZ. (FT) 129243A

TSC: 50092

JN: 129243A

STA: 1512+50.00

CS MP: 2.489

PR #:

CS MP: 10.271

STA:

PR MP:

JN:

CS:

Pavt, Rem

Excavation, Earth

HMA Surface, Rem

Micro Cold Milling, HMA, 0 to 2 inches

JN 129243

#1 Post, Mailbox

Removal Sheet 129243 - 3 | 40 | Removals

(All)

(All)

(All)

M-19 STA 1508+00 TO 1512+50 POE

REM M-19 STA 1508+00 TO 1512+50 POE

10.271

832010

2.489

1512+50.00

129243A

50092

0 ' TO 3 ' VARIES

7.9 ' TO 12.9 ' VARIES

0 ' TO 3.7 ' VARIES

0 ' TO 7 ' VARIES

1.9 ' TO 16.3 ' VARIES

12 '

12 '

0 ' TO 3.7 '

0 ' TO 7 '

1.9 ' TO 16.3 '

SALV

SALV

SALV

24" 36"

UTILITY

CAUTION - CRITICAL

CAUTION - CRITICAL

HAZARDOUS OR FLAMMABLE MATERIAL

HAZARDOUS OR FLAMMABLE MATERIAL

REL-B/O

REL-B/O

Saw Cut Line

Saw Cut Line

6" (ABANDON)

3/4" TO 1" SERVICE LEADS (TYP)
PROPOSED MAINTAINING TRAFFIC TYPICAL
NON-WORKING HOURS

PROPOSED MAINTAINING TRAFFIC TYPICAL
WORKING HOURS
DETAIL GRADE STATIONS AND OFFSETS ARE FROM 29 MILE NON-LEGAL ALI
M-19 STA 102+75.00 POB TO STA 105+00

1-Sign, Type II, Rem

LIMIT
5

R2-1 (24" X 30")
5 Sft Sign, Type IIIB

14 Ft 1-Post, Steel, 3 lb and Supports

PAVT MRKG, SPRAYABLE THERMOPL, 6 INCH, WHITE

116807_ALI_REM_CON_PVMK_001.dgn

50092

- Sign, Type III, Rem

N

LENOX TWP
T.4N, R.14E
SECTION 23

PAVT MRKG, SPRAYABLE THERMOPL, 6 INCH, WHITE

116807_ALI_REM_CON_PVMK_001.dgn

50092

- Sign, Type III, Rem

N

LENOX TWP
T.4N, R.14E
SECTION 23

QUANTITIES THIS SHEET

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<th>Item</th>
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Pavement Marking & Signing Sheet

M-19 STA 110+00 TO 112+95.70 POE

**QUANTITIES THIS SHEET**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Ft</th>
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<tbody>
<tr>
<td>592</td>
<td>Pavt Mrkg, Sprayable Thermop, 6 inch, White</td>
<td>5.048</td>
<td>112+95.70</td>
<td>116807A</td>
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<tr>
<td>75</td>
<td>Pavt Mrkg, Sprayable Thermop, 4 inch, Yellow</td>
<td>832010</td>
<td>5.048</td>
<td>112+95.70</td>
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<tr>
<td>50</td>
<td>Pavt Mrkg, Sprayable Thermop, 4 inch, White</td>
<td>5.048</td>
<td>112+95.70</td>
<td>116807A</td>
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**DESIGN UNIT:**

Michigan Department of Transportation

**DATE:**

04/19/17

LENOX TWP
T.4N, R.14E
SECTION 14

**AUTH:**

PVMK

**FILE:**

116807_ALI_REM_CON_PVMK_003.dgn

**LIMIT SPEED:**

5

**SOLID LANE LINE**

**SOLID EDGE LINE**

**BROKEN LINE 12.5' MARK, 37.5' GAP**

**POE**

PR #:

CS MP:

JN:

CS:

STA:

PR MP:

M-19 NON-LEGAL (44 AL)
Pavement Marking & Signing Sheet

M-19 Non-Legal (B) ALI

Quinton M. Johnson
Village of New Haven
T4N, R14E
Section 34

129243A
50092

003

$1,112
1-Post, Steel, 3 lb
13 Ft 1-Post, Steel, 3 lb
1-Sign, Type III, Rem
R8-3 (12")
1-Sign, Type IIIB

27 MILE RD and Supports
Rein Sign, Type III and Supports

Permanent Pavement Marking & Signing Sheet

Pavt Mrkg, Sprayable Thermopl, 6 inch, White
Pavt Mrkg, Sprayable Thermopl, 4 inch, Yellow
Sign, Type IIIB
Sign, Type III, Rem
Post, Steel, 3 lb

QUANTITIES THIS SHEET

All

129243_PVMK_003

Item

Ft

Ft

Sft

Ea

Pavt Mrkg, Sprayable Thermopl, 6 inch, White

10.271

832010

2.489

1512+50.00

129243A

50092

PR MP: 15.211

PERMANENT PAVEMENT MARKING & SIGNING SHEET

M-19 (ORBITT AVE)
<table>
<thead>
<tr>
<th>Test Hole No.</th>
<th>Boring Date</th>
<th>Physical Reference</th>
<th>Locations</th>
<th>Notes</th>
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<tbody>
<tr>
<td>19</td>
<td>10/12/16</td>
<td>226' South of Arlington Dr. C/L</td>
<td>NB M-19 Agg Shoulder</td>
<td>Ground Surface Elevation: 0.0 ft, Northing: 452694, Easting: 13547890, Sheeting Below of 003 Easting: 13548134, Blows. Easting: 13548074,壤土体,EE,3,粘土, 含有砂粒, 砂质粘土, 浅黄褐色, 灰色, 呈块状, 含有砂粒, 砂质粘土, 深黄褐色, 灰色, 呈块状.</td>
</tr>
<tr>
<td>20</td>
<td>10/13/16</td>
<td>176' North of Arlington Dr. C/L</td>
<td></td>
<td>粘土体,EE,3,粘土, 含有砂粒, 砂质粘土, 浅黄褐色, 灰色, 呈块状, 含有砂粒, 砂质粘土, 深黄褐色, 灰色, 呈块状.</td>
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<tr>
<td>21</td>
<td>10/13/16</td>
<td>250' North of James Curtin Dr. C/L</td>
<td>SB M-19 Shoulder</td>
<td>Ground Surface Elevation: 0.0 ft, Northing: 453038, Easting: 13547675, Sheeting Below of 003 Easting: 13547690, Blows. Easting: 13547610,壤土体,EE,3,粘土, 含有砂粒, 砂质粘土, 浅黄褐色, 灰色, 呈块状, 含有砂粒, 砂质粘土, 深黄褐色, 灰色, 呈块状.</td>
</tr>
<tr>
<td>22</td>
<td>10/13/16</td>
<td>347' South of Clark Street F.O.C.</td>
<td></td>
<td>粘土体,EE,3,粘土, 含有砂粒, 砂质粘土, 浅黄褐色, 灰色, 呈块状, 含有砂粒, 砂质粘土, 深黄褐色, 灰色, 呈块状.</td>
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**锹探**

- **锹探深度** (E.O.B.)
- **锹探方法** (E.T.D.)
- **锹探成果**

- **锹探方法** (锹探, 细薄, 30")
- **锹探深度**
- **锹探结果**

**锹探数据**

- **锹探深度**: 0.00 ft
- **锹探方法** (锹探, 细薄, 30")
- **锹探结果**

**锹探数据**

- **锹探深度**: 2.70 ft
- **锹探方法** (锹探, 细薄, 30")
- **锹探结果**

**锹探数据**

- **锹探深度**: 0.64 ft
- **锹探方法** (锹探, 细薄, 30")
- **锹探结果**

**锹探数据**

- **锹探深度**: 1.30 ft
- **锹探方法** (锹探, 细薄, 30")
- **锹探结果**

- **锹探深度**: 2.50 ft
- **锹探方法** (锹探, 细薄, 30")
- **锹探结果**

- **锹探深度**: 3.50 ft
- **锹探方法** (锹探, 细薄, 30")
- **锹探结果**

**锹探数据**

- **锹探深度**: 1.25 ft
- **锹探方法** (锹探, 细薄, 30")
- **锹探结果**

**锹探数据**

- **锹探深度**: 3.60 ft
- **锹探方法** (锹探, 细薄, 30")
- **锹探结果**