

**NORTHFIELD TOWNSHIP PLANNING COMMISSION**  
**NOTICE OF REGULAR MEETING**  
**April 15, 2015 at 7:00 p.m.**  
**Second Floor, Public Safety Building**  
**8350 Main Street, Whitmore Lake, MI 48189**

**AGENDA**

- 1. CALL TO ORDER**
- 2. PLEDGE OF ALLEGIANCE**
- 3. ROLL CALL**
- 4. APPROVAL OF AGENDA**
- 5. CALL TO THE PUBLIC**
- 6. CORRESPONDENCE**
- 7. REPORTS**
  - A. Board of Trustees Report**
  - B. ZBA**
  - C. Staff Report**
  - D. Planning Consultant Report**
- 8. PUBLIC HEARINGS**
- 9. OLD BUSINESS**
  - A. Case #JPC140003 – Approve, approve with conditions, or deny the request of Nowatzke Truck & Trailer, Inc., 6900 Whitmore Lake Road, Whitmore Lake, MI 48189 for site plan approval for a convenience store and gasoline/diesel fueling station. The parcel number is B-02-20-300-036 and is zoned GC – General Commercial.**
  - B. Master Plan/Citizen Survey – review of bids received**
- 10. NEW BUSINESS**
- 11. MINUTES:** April 1, 2015 Regular Meeting
- 12. POLICY REVIEW AND DISCUSSION**
- 13. CALL TO THE PUBLIC**
- 14. COMMENTS FROM THE COMMISSIONERS**
- 15. ANNOUNCEMENT:** Next Regular Meeting – May 6, 2015
- 16. ADJOURNMENT**

This notice is posted in compliance with PA 267 Of 1976 as amended (open meetings act) MCLA 41.7 2A (2) (3) and the Americans with Disabilities Act. (ADA) Individuals with disabilities requiring auxiliary aids or services should contact the Northfield Township Office. (734) 449-5000 seven days in advance.

8350 Main Street, Whitmore Lake, MI 48189-0576      Telephone: (734) 449-5000      Fax: (734) 449 –0123  
Website: [www.twp.northfield.mi.us](http://www.twp.northfield.mi.us)

Date: October 28, 2014  
Revised: December 10, 2014  
January 30, 2015  
March 20, 2015

**Site Plan Review**  
**For**  
**Northfield Township, Michigan**



**Applicant:** Damrath Group, LLC – John Damrath

**Project Name:** Nowatzke Truck + Trailer, Inc. Fuel Center

**Plan Date:** October 10, 2014

**Revised Plan Date:** March 6, 2015

**Location:** 6900 Whitmore Lake Road (B-02-20-300-036)

**Zoning:** GC, General Commercial

**Action Requested:** Site Plan Approval.

**Required Information:** Deficiencies are noted in the sections below.

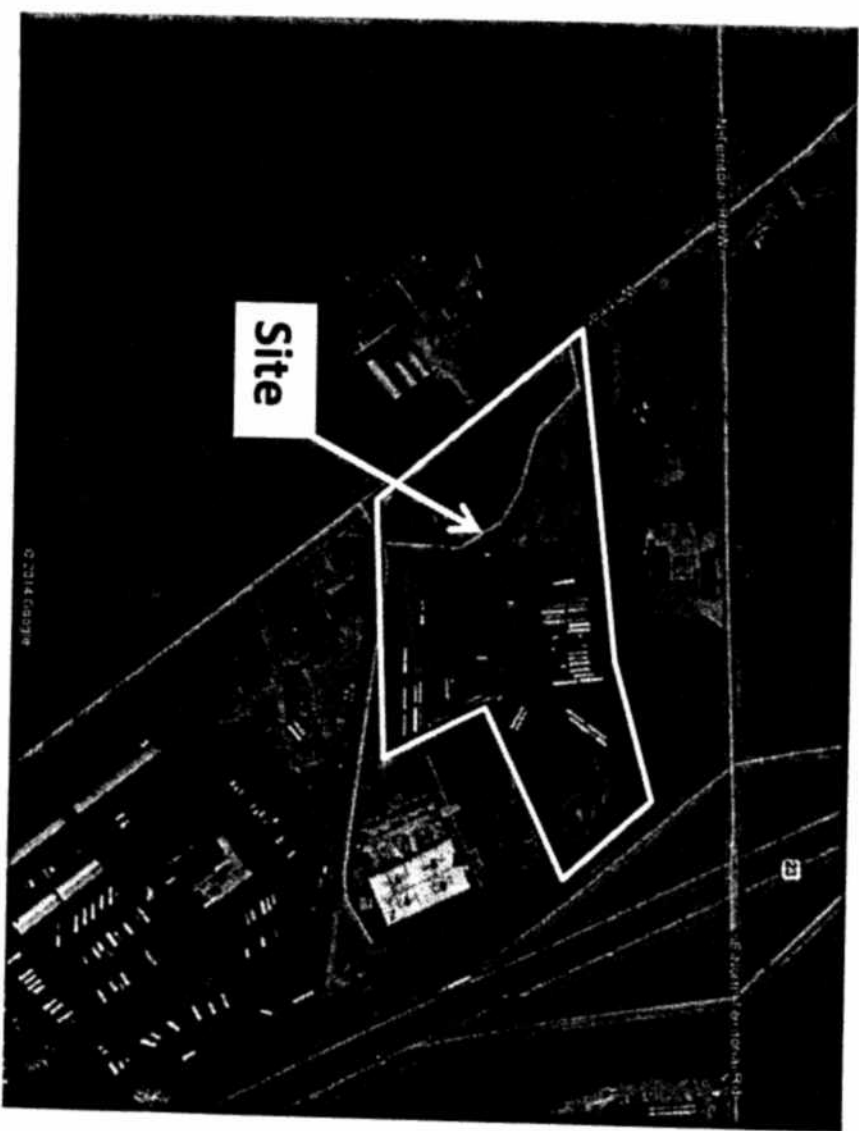
**PROJECT AND SITE DESCRIPTION**

The applicant proposes to construct a new 2,285 square foot convenience store (as a renovation within the existing building), four (4) gasoline dispensers with canopy and three (3) diesel fuel dispensers with canopy.

Automotive service station, including minor repair services is listed as a conditional use in the GC, General Commercial zoning district. The applicant received a recommendation of Planning Commission approval for the conditional use request, and conditional use approval by the Township Board on September 23, 2014 with the following conditions of approval:

1. The traffic impact study be reviewed and approved by the County Road Commission as a part of the detailed site plan review process. (WCRC approved the Traffic Study – see letter from WCRC dated January 7, 2015.)
2. The applicant apply for full (detailed) site plan review.
3. Items 1 through 7 listed in the Engineer’s August 13, 2014 letter be addressed as a part of the detailed site plan review process and noted as such by Orchard, Hiltz and McCliment. (See Engineer’s review.)
4. Any non-conformities on the existing site be remediated according to the zoning ordinance. (Applicant is working through non-conformities with the building inspector.)

Figure 1. - Aerial Photograph



**AREA, WIDTH, HEIGHT, SETBACKS**

The dimensional requirements of the GC, General Commercial district are noted on the following page;

	<u>Required</u>	<u>Provided</u>	<u>Compliant</u>
Lot Area	10,000 sq.ft.(with sanitary sewer)	7.28 acres	Complies
Lot Width	80 feet (with sanitary sewer)	approx. 455 feet	Complies
<u>Setbacks</u>			
Front	35 feet	80 feet to proposed canopy	Complies
Side	20 feet	45 feet to existing building (south) 123 feet to proposed canopy (north)	Complies
Rear	20 feet	110 feet to existing building	Complies
Lot Coverage	25%	41.28% - existing	Existing non-conformity
Building Height	45 feet	18 feet – canopy Convenience store height existing condition (renovation to existing structure)	Complies

Building setbacks were scale measured as distance to buildings and other site features have not been dimensioned. Scaled elevation drawings of the proposed convenience store have been included in the plan set.

*Items to be Addressed: None.*

**NATURAL RESOURCES**

The proposed site is currently built and contains a paved surface in the locations where the proposed convenience store and gasoline/diesel pumps and canopies will be constructed. No natural resources will be compromised in the construction of the proposed uses.

Further, the underground storage tank location is noted north of the proposed gasoline canopy area. An Underground Storage Tank Plan Review Report conducted by MDEQ has been included in the applicant's latest submittal indicating no major deficiencies have been noted. Tank detail sheets (T-300 and T-301) have been provided as requested. Permits will be required prior to Final Zoning Compliance and Certificate of Occupancy.

*Items to be Addressed: Underground storage tank permits will be required prior to Final Zoning Compliance and Certificate of Occupancy.*

**BUILDING LOCATION AND SITE ARRANGEMENT**

As noted above, the proposed building location is acceptable and meets ordinance standards. The proposed location of the fuel canopies appears logical in relation to the rest of the site. In our previous review, we questioned whether the distance between the diesel pump canopy and the adjacent parking spaces allows adequate maneuverability for vehicles. The applicant

has demonstrated truck maneuverability north of the convenience store, and demonstrated an 18-foot aisle width as required.

Further trailer storage and display is not depicted on the eastern portion of the property adjacent to US-23, and should not be allowed within or adjacent to the detention basin area. Note B-6 on Sheet C-100 indicates vehicles within the detention area will be relocated to appropriate parking areas. We had recommended previously that the detention basin be planted with native wetland plantings. The applicant’s cover letter indicates a note has been added to Sheet L-100 describing native wetland plantings in the detention pond, which provides for a native seed mixture to be applied.

*Items to be addressed: None.*

**PARKING, LOADING**

Section 61.04 outlines off-street parking requirements for various uses. The most similar use to the existing trailer repair facility listed in the parking requirements is “automobile service stations”. In addition to the parking required for the existing trailer repair facility, the proposed convenience store parking requirement is noted under “general retail sales establishments, not elsewhere classified”. The following table demonstrates both the proposed and required parking for the uses on the site:

	Required	Total Parking Provided
Retail (1 per 200 s.f. – 2,285 s.f. / 200 = 12 spaces)		
Auto Service Station (1 per 800 s.f. + 1 per 4 employees + 5 per each service bay = (21,288.7 s.f./800)=27 + 2 +30 =	59	46
Barrier Free	2	2

Based upon the required parking calculations, the uses on site require 59 parking spaces, thirty-eight (38) automobile spaces are provided, and an additional 41 truck stalls. Section 61.03 G. allows for a reduction in parking when a parking lot serves two (2) or more uses where the operating hours of the uses to not overlap.

The applicant has provided the hours of operation for the convenience store will be 24 hours and the trailer repair business will operate from 8AM to 8PM. The applicant indicates further while the two (2) uses will be utilized on the same property, they will not interact with one another or have the need to “share” parking spaces.

Two (2) barrier-free parking spaces have been provided as required.

*Items to be addressed: None.*

**SITE ACCESS AND CIRCULATION**

As provided in the conditional use review information, the site plan demonstrates a left turn lane at the north driveway as recommended in the traffic impact assessment study produced by Fleis + Vandenbrink. Review and approval of the traffic impact assessment and the associated improvements to Whitmore Lake Road has been approved by the WCRC (approved at their March 3, 2015 meeting).

The Sheet C-200 provides the boundary survey of the site, and calls out the various easements within the subject parcel. It notes the location of the recorded easement agreement for the ingress, egress, utilities, signs and drainage at the Washtenaw County Registrar of Deeds. A copy of the easement document has been provided for review.

Sheet C-202 demonstrates truck turning radii throughout the site. We note the circulation path demonstrates trucks will be traversing upon existing paved surfaces within the site.

*Items to be addressed: None.*

**LANDSCAPING**

A separate landscape plan is required to demonstrate that the existing landscape material meets current standards. A signed and sealed landscape plan has been provided as part of the submitted plan set.

One (1) tree per each 8 parking spaces is required. Thirteen (13) parking spaces are proposed adjacent to the convenience store, in addition twenty-five (25) parking spaces currently exist adjacent to the south driveway, and 41 trailer parking spaces are demonstrated along the northern property line. Based on the parking demonstrated on the plan, six (6) parking lot trees are required.

In addition to existing landscaping, two (2) new Red Maple trees and six (6) Colorado Spruce trees are proposed in the northwest corner of the site. Additional Juniper shrubs are also proposed at both sides of the driveway from Whitmore Lake Road (northern drive). We had previously suggested additional plantings south of the driveway along Whitmore Lake Road. In response, five (5) additional Armstrong Maple trees have been added along the Whitmore Lake Road ROW as suggested.

We had also previously suggested that additional landscaping adjacent to Whitmore Lake Road, particularly screening the propane tank would greatly enhance the site's aesthetics. Additional screening of the propane tank has been provided.

Further, landscaping adjacent to US-23 would enhance the aesthetics of the area and further screen the site from view. The applicant has provided groupings of shrubbery along the periphery of the detention basin. We suggest in addition to the shrubbery, the applicant

provide a row of spruce trees along the eastern perimeter of the detention area to provide screening of the site from US 23.

*Items to be addressed: Consider addition of a row of spruce trees along the eastern perimeter of the detention area to provide screening from US 23.*

LIGHTING

A lighting plan has been provided demonstrating photometrics and fixture details. Section 60.31 requires all fixtures be downward directed; all proposed fixtures appear to be downward directed.

In addition, all lighting fixtures shall not exceed 16 feet in height. All proposed fixtures are shown with a height of 14 or 15 feet. Four (4) fixtures are shown at 24 and 25 feet in height; these are noted as existing non-conforming light poles to remain.

Further, lighting illumination levels at property lines meet the standards of Section 60.31 E.1. However, the maximum lighting levels cannot exceed 25 foot-candles directly beneath a fixture, and shall not exceed 3 foot-candles directly between two (2) light fixtures. The lighting levels beneath and adjacent to the fuel canopies have been modified from the previous submittal to meet the required illumination levels.

*Items to be addressed: None.*

SIGNS

Two (2) existing freestanding signs are depicted along Whitmore Lake Road to be removed, as well as detail for a new freestanding ID/Price Sign (Sheet AG-100) which will be located north of the driveway.

The proposed freestanding meets the requirements outlined in Section 62.06. In addition to the freestanding sign, one (1) wall sign is proposed on the south elevation of the gasoline fuel canopy. Section 62.08 allows the permitted signs set forth in Section 62.06 A.1. To be attached either to a wall of the building or to the canopy of a fuel pump island. Section 62.06 A.1. allows for one wall sign.

*Items to be Addressed: None.*

FLOOR PLAN AND ELEVATIONS

Floor plans have been provided and appear acceptable. Elevations of the canopy and fuel dispensers have been provided on Sheets A-201 and A-202. Elevations demonstrating the new convenience store have been included in the plan set.

*Items to be Addressed: None.*

VARIANCES

None requested or required.

Items to be Addressed: None.

RECOMMENDATIONS

We recommend the following items be addressed prior to site plan approval:

1. Items 1 through 7 listed in the Engineer's August 13, 2014 letter be addressed as a part of the detailed site plan review process and noted as such by Orchard, Hiltz and McCliment.
2. Any non-conformities on the existing site be remediated according to the Zoning Ordinance.
3. Underground storage tank permits will be required prior to Final Zoning Compliance and Certificate of Occupancy.
4. Consider addition of a row of spruce trees along the eastern perimeter of the detention area to provide screening from US 23.

  
CARLISLE/WORTMAN ASSOC., INC.  
Douglas J. Lewan, PCP, AICP  
Principal

  
CARLISLE/WORTMAN ASSOC., INC.  
Laura K. Kreps, AICP  
Associate

#271-02-1305

cc: Tom Nowatzke via [tomnowatzkesr@msn.com](mailto:tomnowatzkesr@msn.com)  
John Damrath via [jd@damrath.com](mailto:jd@damrath.com)





ARCHITECTS. ENGINEERS. PLANNERS.

March 20, 2015

**Northfield Township**  
**Building & Zoning Department**  
8350 Main Street, Suite A  
Whitmore Lake, Michigan 48189

Regarding: **Nowatzke Fuel Station**  
Site Plan Review No. 4  
OHM Job No. 0151-14-1021

We have reviewed the site plan material, dated March 6, 2015 and received by this office on March 13, 2015, for proposed site improvements to the Nowatzke Truck & Trailer, Inc. property located at 6900 Whitmore Lake Road. Plans were reviewed according to Township guidelines and engineering standards. A brief description of the project, followed by our comments, is provided below.

The applicant is requesting site plan approval for gasoline and diesel dispensers with fueling pads and canopies of 2,592 square feet and 1,440 square feet, respectively. Two underground storage tanks of 20,000 gallons and 30,000 gallons are also proposed. A convenience store is proposed to occupy 2,285 square feet of the existing building on-site.

**Site Drainage**

1. A drainage area map for the overall system, including any runoff from neighboring properties and County ROW contributing to the drainage area, shall be included. It appears that the drainage area on the southwest side of Whitmore Lake Road drains through an 18 inch storm sewer under Whitmore Lake Road towards the existing detention basin, and has not been included in the on-site stormwater system. We are aware that the existing pond was designed and constructed to include some amount of offsite flow from the Whitmore Lake Road ROW and surrounding properties, and this must be accounted for in the volume calculations.
2. The proposed expansion to the existing detention basin appears to be insufficient to store the as-calculated 100-year storm volume.
3. An emergency spillway shall be provided for the existing detention basin.
4. The Applicant shall provide the impervious cover post-development 100-year storm volume, and the total 100-year storm volume in the runoff summary.

**Permits and Other Agency Approvals**

Copies of all permits and/or letters of waiver, obtained to date, shall be forwarded to this office. The current status of all necessary permits should be included on the cover sheet. Before construction plan approval can be issued, the applicant must submit all necessary permits/ approvals, including but not limited to the following agencies:

- Washtenaw County Road Commission (WCRC) for the work within the Whitmore Lake Road right-of-way and approval of the traffic impact assessment.
- Washtenaw County Water Resources Commissioner's Office (WCWRC) for drainage, soil erosion and sedimentation control.
- Northfield Township Building Department.
- Northfield Township Fire Department approval for fire code compliance.



**Conclusion and Recommendations**

As submitted, the site plan appears to be in substantial compliance with The Charter Township of Northfield requirements. We take no exception to the proposed site plan and recommend the Planning Commission consider approval of the site plan conditional upon the above mentioned comments being addressed administratively.

Please feel free to contact Jacob Rushlow at (734) 466-4517 or [jacob.rushlow@ohm-advisors.com](mailto:jacob.rushlow@ohm-advisors.com) if you have any questions or concerns regarding this review.

Sincerely,

**OHM ADVISORS**

Jacob Rushlow, P.E.  
Township Engineer

cc: Howard Fink, Township Manager (via e-mail)  
William Wagner, Public Safety Director (via e-mail)  
Pam Boegler, Northfield Township (via e-mail)  
Kurt Wieland, Building/Zoning Official (via e-mail)  
Martene Chockley, Planning Commission Chair (via e-mail)  
Doug Lewan, Carlisle/Wortman Associates (via e-mail)  
John Danrath, Danrath Group, LLC, (via e-mail)  
Tom Nowatzke, Nowatzke Truck and Trailer, Inc., (via e-mail)  
File

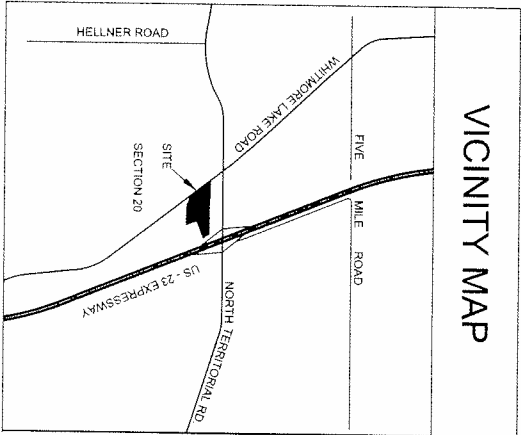


**NOWATZKE TRUCK & TRAILER**  
6900 Whitmore Lake Rd., Whitmore Lake, MI 48189

# NOWATZKE TRUCK & TRAILER, INC.

## 6900 WHITMORE LAKE RD.

## WHITMORE LAKE, MI 48189



PROJECT DATA			
ZONING: GC - GENERAL COMMERCIAL			
PARCEL # B-02-20300-026 - 7.28 AC.			
PARKING NOTES		REQUIRED	PROPOSED
RETAIL (1 PER 200 S.F.)			
2,286 S.F. / 200 = 12 SPACES			
AUTO SERVICE STATION (1 PER 400 S.F.)		59	38
(1 PER 400 S.F. = 125.33 S.F. PER BAY) + 5 PER EACH SERVICE BAY			
21,268.7 S.F. / 800 = 27 + 2 + 30 =			
BARRIER FREE		2	2

SETBACKS FOR GENERAL COMMERCIAL:  
FRONT: 35' SIDE: 20' REAR: 20'

MAXIMUM BUILDING HEIGHT: 45'

LOT COVERAGE:  
LOT 17.28 ACRES  
TOTAL LOT COVERAGE IS 41.28%  
THERE IS NO INCREASE IN LOT COVERAGE PURSUED

FLOOR AREA RATIO:  
TOTAL BUILDING AREA IS 21,933 SF. C-STOKE AREA = 9.1%.

ROAD JURISDICTION:  
WHITMORE LAKE ROAD, WASHTENAW COUNTY PRIMARY ROAD

1 SF PER FRONT FOOT OF BUILDING, NO MORE THAN 20 SF (FOR COMMERCIAL GROUP)  
SIGN FOR ADVERTISING GAS PRICES ALONG FRONTAGE STREET (NO MORE THAN 6 SF FOR AUTOMOBILE SERVICE STATIONS)

LANDSCAPING:  
REQUIRED:  
AT EVERY 20 PARKING SPACES,  
ONE CANOPY TREE PER 8 STALLS  
10 GREENBELT PER 10,000 SF FLOOR AREA.

HOURS OF OPERATION:  
C-STOKE: 24 HOURS  
REPAIR FACILITY: 8AM TO 6PM EST

- USE NOTES:
1. TRUCK/TRAILER BUSINESS TO CONTINUE AT CURRENT LOCATION.
  2. NO LOT/LOR TO BE SOLD AT SITE.
  3. TRUCKS WILL NOT BE PARKED OVERNIGHT.
  4. TOTAL DISTURBED AREA OF THIS PROJECT IS 1.82 ACRES (79,091.78 S.F.).
  5. NO EXPANSION OF IMPERVIOUS AREAS IS MADE PART OF THIS PROJECT.
  6. DETENTION POND SHALL BE ENLARGED BY 780 C.Y. TO IMPROVE CAPACITY.
  7. SITE SHALL CONTINUE TO UTILIZE EXISTING WATER, STORM AND SANITARY SYSTEMS IN PLACE.
  8. NO UTILITY ALTERATIONS ARE PROPOSED AS PART OF THIS PROJECT.
  9. MATERIALS STORED ON SITE INCLUDE AUTOMOTIVE (TRUCK OTHER PRODUCTS ASSOCIATED WITH A TRUCK REPAIR FACILITY.
  10. C-STOKE WILL STORE A LIMITED AMOUNT OF FOOD AND BEVERAGES.
  11. THE ZONING OF THE SUBJECT SITE AND THE AREA TO THE NORTH (LAND AND SOUTH ENCOMPASSING TRACTOR SUPPLY) IS GC, GENERAL COMMERCIAL. THE AREAS TO THE WEST ARE AREAS TO THE SOUTH ARE ZONED LIMITED INDUSTRIAL, THE AND US 23 BORDERS THE PROPERTY TO THE EAST.

OWNER:  
TOM NOWATZKE  
NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600

APPLICANT:  
JOHN DAMRATH  
DAMRATH GROUP, LLC  
143 ADVOCENTRE  
NORTHVILLE, MI 48167  
(248) 980-2155

## SHEET INDEX

SHEET #	SHEET TITLE	DATE
G-001	COVER SHEET	•
G-002	GENERAL NOTES	•
SURVEY - DAVID C. ADAMS & SON PROFESSIONAL LAND SURVEYORS, INC. 1 OF 1 TOPOGRAPHIC AND ALTIMACSM LAND TITLE SURVEY		
CIVIL - DAMRATH GROUP		
C-100	DEMOLITION & EROSION CONTROL PLAN	•
C-200	SITE PLAN	•
C-201	DIMENSION CONTROL SITE PLAN	•
C-202	TRUCK TURN PLAN	•
C-203	PHOTOMETRIC PLAN	•
C-204	PHOTOMETRIC PLAN SPECS	•
C-300	GRADING AND PAVING PLAN	•
C-301	DETENTION POND GRADING PLAN	•
C-302	STORMWATER MANAGEMENT PLAN	•
C-400	UTILITY PLAN	•
C-500	SITE DETAILS	•
C-501	ROAD WIDENING PLAN AND DETAILS	•
C-502	MDOT PAVEMENT DETAILS	•
C-503	PAVEMENT MARKING PLAN	•
C-504	PAVEMENT GRADING AND CROSS SECTIONS	•
L-100	LANDSCAPE PLAN	•
L-101	LANDSCAPE PLAN	•
A-201	GAS CANOPY ELEVATIONS	•
A-202	DIESEL CANOPY ELEVATIONS	•
A-203	BUILDING ELEVATIONS	•
AG-100	SIGN DETAILS	•
T-300	20,000 GALLON TANK PLAN	•
T-301	30,000 GALLON TANK PLAN	•

## SUMMARY OF WORK

CONSTRUCTION OF A RETAIL FUELING CENTER CONSISTING OF ONE (1) 2,286 SF CONVENIENCE STORE, 11,792 SF CANOPY, ONE (1) 1,440 SF CANOPY AND 11,792 SF DISPENSER ISLANDS WITHIN AN EXISTING COMMERCIAL DEVELOPMENT.

## LEGAL DESCRIPTION

A PARCEL OF LAND BEING A PART OF THE SOUTHWEST 1/4 OF SECTION 20, TOWN 1 SOUTH, RANGE 6 EAST, NORTHFIELD TOWNSHIP, WASHTENAW COUNTY, MICHIGAN, SAID PARCEL BEING BOUNDED AND DESCRIBED AS COMMENCING AT THE WEST 1/4 CORNER OF SECTION 20, TOWN 1 SOUTH, RANGE 6 EAST, NORTHFIELD TOWNSHIP, WASHTENAW COUNTY, MICHIGAN, THENCE ALONG THE EAST-WEST 1/4 LINE OF SAID SECTION NORTH 87 DEGREES 57' 43" EAST 24.65 FEET, THENCE ALONG THE NORTHEAST LINE OF WHITMORE LAKE ROAD, SOUTH 19 DEGREES 19' 22" EAST 375.16 FEET TO THE TRUE POINT OF BEGINNING, THENCE NORTH 90 DEGREES 59' 26" WEST, ALONG A LINE, A DISTANCE OF 38.60 FEET, THENCE NORTH 87 DEGREES 57' 43" EAST, ALONG A LINE, A DISTANCE OF 297.42 FEET, THENCE SOUTH 62 DEGREES 02' 17" EAST, ALONG A LINE, A DISTANCE OF 30.00 FEET, THENCE NORTH 87 DEGREES 57' 43" EAST, ALONG A LINE, A DISTANCE OF 866.29 FEET TO THE WEST LINE OF LIMITED ACCESS HIGHWAY US 23, THENCE SOUTH 38 DEGREES 28' 04" EAST, ALONG THE WEST LINE OF SAID HIGHWAY, A DISTANCE OF 141.39 FEET, THENCE SOUTH 66 DEGREES 22' 17" WEST, ALONG A LINE, A DISTANCE OF 346.00 FEET, THENCE SOUTH 23 DEGREES 37' 45" EAST, ALONG A LINE, A DISTANCE OF 213.23 FEET, THENCE SOUTH 89 DEGREES 47' 41" WEST, ALONG A LINE, A DISTANCE OF 399.95 FEET, THENCE NORTH 39 DEGREES 18' 59" WEST, ALONG A LINE, A DISTANCE OF 49.95 FEET, THENCE NORTH 90 DEGREES 00' 00" WEST, ALONG A LINE, A DISTANCE OF 111.40 FEET TO THE NORTHEAST LINE OF WHITMORE LAKE ROAD, THENCE NORTH 39 DEGREES 19' 22" WEST, ALONG THE NORTHEAST LINE OF SAID ROAD, A DISTANCE OF 456.67 FEET TO THE TRUE POINT OF BEGINNING.

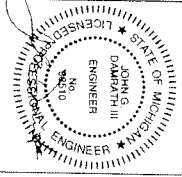


Damrath Group, LLC  
143 Cady Centre, #161  
Northville, MI 48167  
Office: 248.980.2155



NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600

REV	DATE	DESCRIPTION
1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12/31/14	REVIEW COMMENTS
4	03/06/15	REVIEW COMMENTS
5	04/01/15	WCRC SOIL EROSION COMMENTS
6	7/7/7/15	WCRC COMMENTS



DATE: 12/31/14  
PROJECT NO: 090009  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

COVER SHEET  
SHEET NO  
G-001







### SOIL EROSION AND SEDIMENTATION

### CONTROL NOTES & MAINTENANCE NOTES:

1. THE LANDOWNER SHALL SUBMIT A SLOE EROSION CONTROL PLAN AND OBTAIN A SLOE EROSION AND SEDIMENTATION CONTROL PERMIT OR SIMILAR PERMIT FROM THE JURISDICTIONAL AUTHORITY PRIOR TO ANY EARTH CHANGES.
2. THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART I OF ACT 451 OF 1984, AND PER THE SLOE EROSION AND SEDIMENTATION CONTROL PERMIT OR SIMILAR PERMIT FROM THE JURISDICTIONAL AUTHORITY PRIOR TO ANY EARTH CHANGES.
3. ALL SLOE EROSION AND SEDIMENTATION CONTROL (SESC) WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL AUTHORITY.
4. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ALONG OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINAGE, LAKES AND PONDS.
5. THE GENERAL CONTRACTOR SHALL STAGE ALL SLOE EROSION AND SEDIMENTATION CONTROL (SESCO) WORK AS PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
6. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF SESS DEVICES.
7. THE GENERAL CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SESS MEASURES AS SHOWN IN THE DRAWINGS AND PROJECT MANUAL, BEFORE, AND AT ALL TIMES DURING, THE CONSTRUCTION OF THIS PROJECT. ANY MODIFICATIONS OR ADDITIONS TO SESS MEASURES DUE TO CONSTRUCTION OR CHANGED CONDITIONS SHALL BE COMPLIED WITH AS REQUIRED OR AS DIRECTED BY THE JURISDICTIONAL AUTHORITY.
8. IF ANY OF THE SESS MEASURES ON THE SITE ARE DEEMED INADEQUATE OR INEFFECTIVE, THE JURISDICTIONAL AUTHORITY HAS THE RIGHT TO REQUIRE ADDITIONAL SESS MEASURES AT THE EXPENSE OF THE GENERAL CONTRACTOR.
9. THE GENERAL CONTRACTOR SHALL INSPECT THE SESS DEVICES ONCE A WEEK UNDER ANY CIRCUMSTANCES WITHIN 24 HOURS OF RAINFALL, AND DAILY DURING A PROLONGED RAIN EVENT. A LOG OF INSPECTION REPORTS SHALL BE MAINTAINED AND ACCESSIBLE IN ACCORDANCE WITH NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS. ANY REQUIRED MAINTENANCE SHALL BE PROVIDED PROMPTLY.
10. INSTALL SILT FENCE AS INDICATED IN THE DRAWINGS AND PROJECT MANUAL, PER ATTACHED DETAILS, AND AT ADDITIONAL AFFECTED AREAS AS NECESSARY.
11. A SILT FENCE SHALL BE INSPECTED ONCE A WEEK UNDER ANY CIRCUMSTANCES, WITHIN 24 HOURS OF RAINFALL, AND DAILY DURING A PROLONGED RAIN EVENT. REQUIRED MAINTENANCE SHALL BE PROVIDED PROMPTLY.
12. THE SILT FENCE SHOULD BE REMOVED WHEN SEDIMENT ACCUMULATED TO 1/3 TO 1/2 OF THE HEIGHT OF C. IF SILT FENCE DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE SILT FENCE SHALL BE REPLACED PROMPTLY.
13. INSTALL INLET FILTERS ON ALL MOVEMENT CATCH BASINS PER DETAIL.
14. A INLET FILTERS SHALL BE INSPECTED ONCE A WEEK UNDER ANY CIRCUMSTANCES, WITHIN 24 HOURS OF RAINFALL, AND DAILY DURING A PROLONGED RAIN EVENT. REQUIRED MAINTENANCE SHALL BE PROVIDED PROMPTLY.
15. B. BUILD-UP OF SEDIMENT AND DENRIS SHALL BE REMOVED PROMPTLY TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE FILTER FABRIC SHALL BE REPLACED PROMPTLY.
16. INSTALL DRAIN GUARD ON ALL CATCH BASINS PER DETAIL. SEED OR SOO THE AREA BETWEEN THE SILT FENCE AND THE INLET.
17. A DRAIN GUARDS SHALL BE INSPECTED ONCE A WEEK UNDER ANY CIRCUMSTANCES, WITHIN 24 HOURS OF RAINFALL, AND DAILY DURING A PROLONGED RAIN EVENT.
18. B. BUILD-UP OF SEDIMENT SHALL BE REMOVED WHEN SEDIMENT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE SILT FENCE.
19. THE BARRIER SHOULD DECOMPOSES OR BECOME INEFFECTIVE PRIOR TO THE END OF EXPECTED USABLE LIFE AND THE BARRIER IS STILL REQUIRED, THE FILTER FABRIC SHALL BE REPLACED PROMPTLY.
20. ALL STOCKPILED SOILS SHALL BE MAINTAINED IN SUCH A WAY AS TO PREVENT EROSION FROM LEAVING THE SITE. SILT FENCE MUST BE INSTALLED AROUND THE PERIMETER OF THE STOCKPILE. IF THE STOCKPILE WILL BE ON SITE IMMEDIATELY AFTER THE STOCKPILE MUST BE SEED.
21. A. IMMEDIATELY AFTER THE STOCKPILE MUST BE SEED WITH UNWEATHERED SMALL GRAIN STRAW, SPREAD UNIFORMLY AT THE RATE OF 1.0 TO TONS PER ACRE OR DISC TYPE MULCH ANCHORSING TOOL, OR OTHER METHODS AS APPROVED BY THE JURISDICTIONAL AUTHORITY. MULCH MATTING MAY BE USED IN lieu OF LOOSE MULCH.
22. IF ANY RAMP-DRENCH DRAINAGE IS NEEDED, IT SHALL BE DISCHARGED THROUGH A FILTER BAG OVER A WELL-VEGGIED AREA. THE PUMP MUST DISCHARGE AT A NON-EROSIVE VELOCITY. AN APPROVED ENERGY DISSIPATER MAY BE USED.
23. PROVIDE A 12' WIDE X 50' LONG (MIN.) STONE TRUCKING MAT AT ENTRANCE PRIOR TO CONSTRUCTION. SEE DETAIL 1, SHEET C-607 FOR TEMPORARY'S STONE ACCESS DRIVE DETAIL.
24. AT ALL TIMES AND DIRT AND DENRIS TRACKED ON TO THE PARKING LOT OR ANY ROADWAY SHALL BE REMOVED IMMEDIATELY BY THE GENERAL CONTRACTOR.
25. STREETS AND/OR PARKING SHALL BE AGGRAVED AND SWEEP ON A DAILY BASIS BY THE GENERAL CONTRACTOR.
26. ALL DISTURBED AREAS SHALL BE MAINTAINED FOR DUST CONTROL. SPRINKLING TRUCK TRUCKS SHALL BE AVAILABLE AT ALL TIMES AS RESULT OF CONSTRUCTION ACTIVITY.
27. PERMANENT SESS MEASURES FOR ANY DISTURBED LAND AREA SHALL BE COMPLETED BY THE GENERAL CONTRACTOR WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING AND OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA, ALL TEMPORARY SESS MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SESS MEASURES ARE IMPLEMENTED IMMEDIATELY.
28. THE GENERAL CONTRACTOR SHALL FINAL GRADE, ESTABLISH VEGETATION AND/OR LANDSCAPE ALL DISTURBED AREAS NOT BUILT OR PAVED UPON.
29. THE GENERAL CONTRACTOR SHALL REMOVE ALL TEMPORARY SESS DEVICES AFTER PERMANENT STABILIZATION IS ESTABLISHED.

**DEMOLITION NOTES:**

1. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE IN PLACE PRIOR TO ANY SITE DEMOLITION, EXCAVATION OR GRADING.
2. PERFORM CLEANING, STRUCTURE REMOVAL, PAVEMENT REMOVAL, AND APPLICABLE STOCKPILING IN ACCORDANCE WITH THE PROJECT DRAWINGS AND PROJECT MANUAL. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE LAMPURE SHEET FOR SOIL AND DISPOSAL OF ALL RUBBISH, TRASH, DEBRIS, ORGANIC MATERIAL, ETC. SEE REMOVAL TABLE ON THIS SHEET FOR SOIL WASHING INSTRUCTIONS.
3. NO ATTEMPT IS MADE TO STIPULATE EACH ITEM TO BE REMOVED AND/OR DECLASSIFIED EITHER ON THE DRAWINGS WELL AS REMOVED BY THE MANUAL. THE CONTRACTOR MUST VISIT THE SITE TO ASSESS EXISTING PHYSICAL CONDITIONS, AS RESULTS DESCRIBED BY THE PROJECT DRAWINGS AND PROJECT MANUAL.
4. COMPLETELY RESTORE ALL DISTURBED AREAS TO CONDITION EQUAL TO, OR BETTER THAN EXISTING CONDITION AND TO THE SATISFACTION OF AFFECTED OWNERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF CLEANUP, RESTORATION WORK AND OTHER RESTORATION OPERATIONS SUCH AS, BUT NOT LIMITED TO, CONSTRUCTION SIGNAGE, STREET SWEEPING AND MAINTAINING EXISTING UTILITIES SHALL BE THE GENERAL CONTRACTORS RESPONSIBILITY. RESTORATION WORK SHALL BE PERFORMED WITHIN FIVE (5) WORKING DAYS AFTER COMPLETION OF FINAL GRADING.
5. WHERE EXISTING PAVEMENT IS TO BE PARTIALLY REMOVED, SMCUT PAVEMENT TO FULL DEPTH TO PROVIDE A SMOOTH JOINT WITH PROPOSED PAVEMENT.
6. ALL DEMOLITION WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL AUTHORITY.
7. IF APPROPRIATE, RETAIN SOIL SPOOLS FROM CONSTRUCTION EXCAVATION AND STORE AT DESIGNATED LOCATION FOR RE-USE, IN ACCORDANCE WITH THE GEOTECHNICAL REPORT, PROJECT DRAWINGS, AND OWNERS REPRESENTATIVE APPROVAL(S).

74

AREA OF DEMOLITION: 1.82 ACRES (79,091.78 S.F.)

DEMOLITION AND EROSION PLAN  
SCALE: 1" = 50'-0"

## SCOPE OF WORK

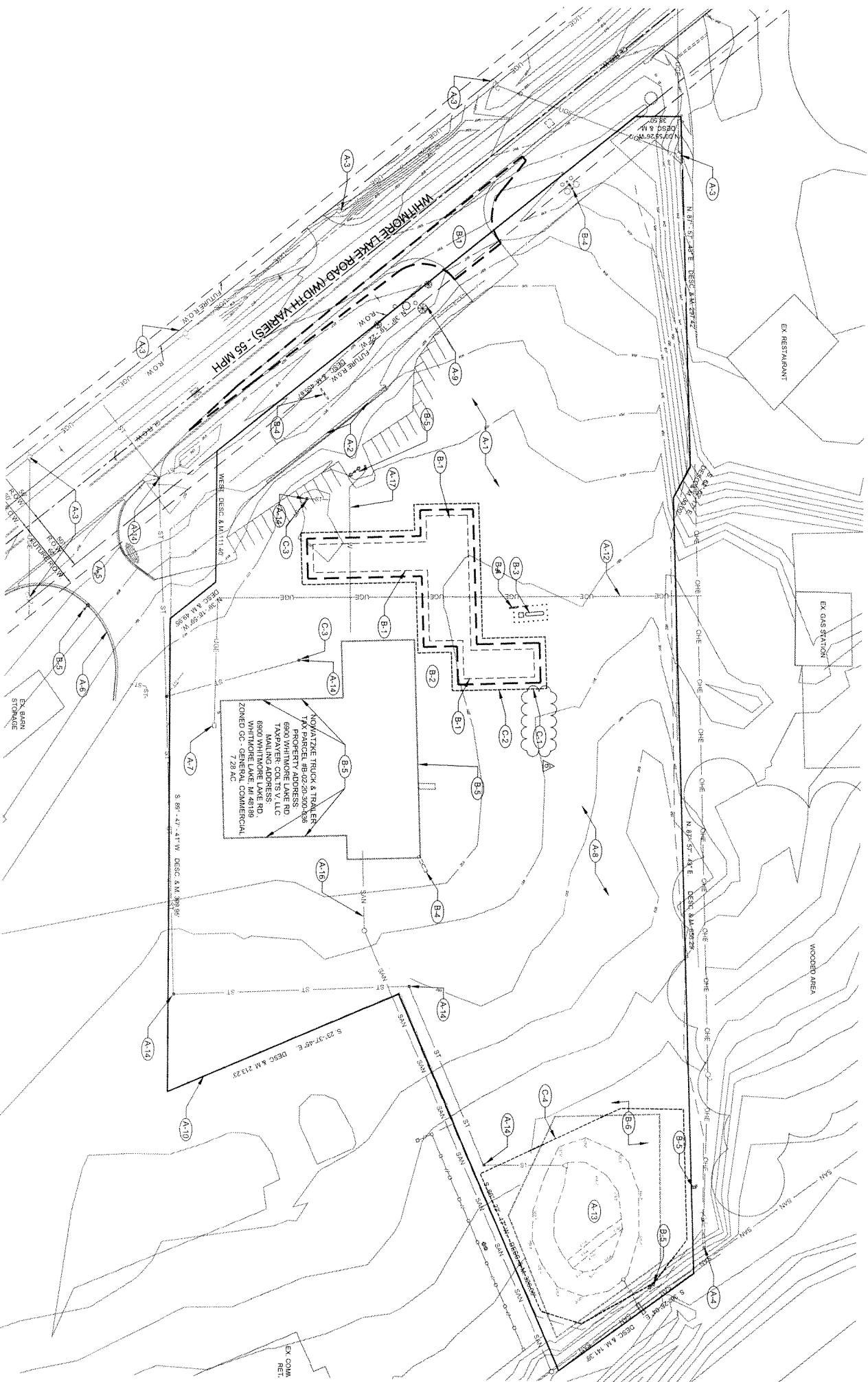
- |     |  |
|-----|--|
| B-1 | SAUT, REMOVE AND DISPOSE OF SITE PAVEMENT AS REQUIRED TO ALLOW FOR NEW CONSTRUCTION. (SEE C-201) |
| B-2 | CLEAR AND GRUB LAND AS REQUIRED TO ALLOW FOR NEW CONSTRUCTION.                                   |
| B-3 | EXISTING PROPANE TANK TO BE RELOCATED  |
| B-4 | EXISTING SIGN (789)  |
| B-5 | HPS LIGHT FIXTURE  |
| B-6 | RELOCATE ANY VEHICLES WITHIN DETENTION POND EASEMENT TO PROPER PARKING AREAS                     |

## C - NEW SITE FEATURES

- |     |   |
|-----|---|
| C-1 | INSTALL CONSTRUCTION FENCE. CONTRACTOR TO FIELD VERIFY AND COORDINATE LOCATION(S) OF CONSTRUCTION ACCESS GATE(S) WITH OWNER'S REPRESENTATIVE. (SEE DETAIL 4 ON SHEET C-500) |
| C-2 | INSTALL SILT FENCE. (SEE DETAIL 2 ON SHEET C-500)   |
| C-3 | INSTALL INLET FILTERS. (SEE DETAIL 1 ON SHEET C-500)  |
| C-4 | INSTALL SILT FENCE. (SEE DETAIL 5 ON SHEET C-500)   |

## GENERAL NOTES

1. SEE THE LANDSCAPING PLAN FOR INFORMATION REGARDING PERMANENT STABILIZATION OF THE SITE.
2. COLT V, LLC SHALL BE RESPONSIBLE FOR THE CONTINUED MAINTENANCE OF ALL PERMANENT SESC MEASURES THAT REMAIN AFTER PROJECT COMPLETION.

[illegible]

**MISS  
DIG**

3 WORKING DAYS  
BEFORE YOU DIG  
OR DRILL.  
CALL

1-800-482-7171

DATE: 12/3/71  
PROJECT NO.: 000000  
DESIGNED BY: JF  
DRAWN BY: BR  
CHECKED BY: JF

DEMOLITION & EROSION  
CONTROL PLAN

SHEET NO.  
C-100

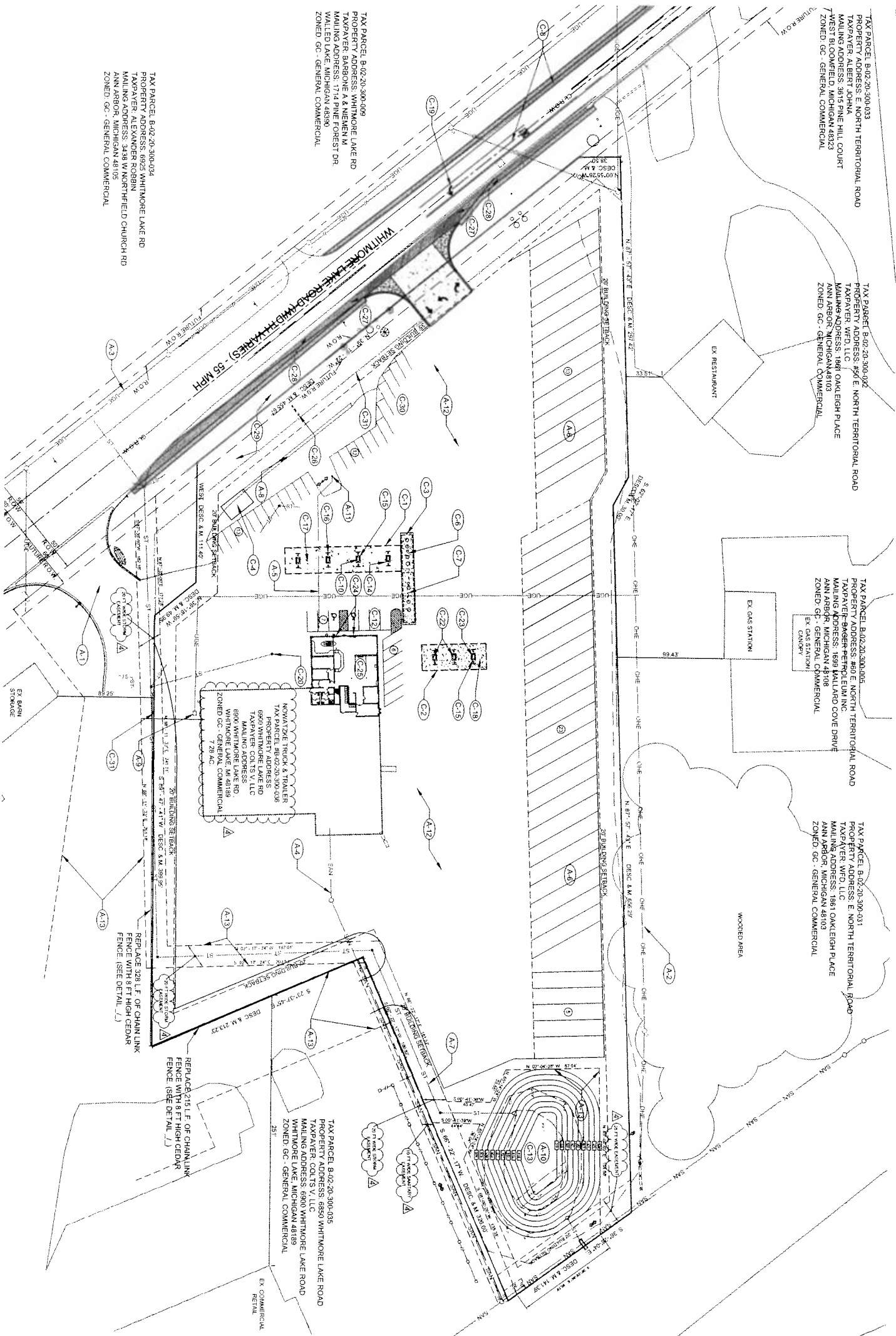
NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600



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DANABYTE GROUP, LLC NOT PUBLISHED



**Damrath Group, LLC**  
143 Cady Centre, #151  
Northville, MI 48167  
Office: 248.880.2158



**SITE PLAN**  
SCALE 1" = 50'-0"

- A. EXISTING SITE FEATURES TO REMAIN**
- A-1 ENTRANCE TO REMAIN
  - A-2 OVERHEAD ELECTRIC (TYP.)
  - A-3 UNDERGROUND ELECTRIC (TYP.)
  - A-4 SANITARY LINE (TYP.)
  - A-5 WATER LINE (TYP.)
  - A-6 TRAILER STORAGE
  - A-7 STORM SEWER (TYP.)
  - A-8 ROCK WALL
  - A-9 TRANSFORMER
  - A-10 DETENTION POND
  - A-11 WELL
  - A-12 EXISTING DRIVE TO REMAIN
  - A-13 EASEMENTS (SEE DAVID C. ADAMS & SON SURVEY NO. 19931 DATED 9/16/14)

- SCOPE OF WORK**
- C. PROPOSED SITE IMPROVEMENTS**
- C-1 24.00' X 108.00' CANOPY (2,592 S.F.)  
CONSTRUCTION IMPROVEMENT PLAN ON SHEET A-101
  - C-2 24.00' X 60.00' CANOPY (1,440 S.F.)  
COLUMNS AND FOOTINGS SEE  
CONSTRUCTION IMPROVEMENT PLAN ON SHEET A-101
  - C-3 6" MOUNTING HOLE
  - C-4 RELOCATED PROPANE TANK
  - C-5 12 FT X 65 FT X 8" CONCRETE TANK MAT  
(SEE PAVEMENT DETAIL SHEET)
  - C-6 20,000 GALLON DOUBLE WALL SPILT UNDERGROUND  
STORAGE TANK, 4,000 GALLONS PREVENTING 100 REGULAR  
(SEE TANK DETAIL SHEET)
  - C-7 30,000 GALLON DOUBLE WALL UNDERGROUND DIESEL  
STORAGE TANK (SEE TANK DETAIL SHEET)
  - C-8 WIDER ROAD AND ADD LEFT TURN LANE  
(SEE SHEET C-501)
  - C-9 GAS LINE DISPENSER WITH CARD READER  
(SEE DISPENSER AND PIPING DETAILS SHEET)
  - C-10 AUTOMOBILE MULTI-PRODUCT DISPENSER  
(3+1 GASOLINE/DIESEL) (SEE DISPENSER AND  
PIPING DETAILS SHEET)
  - C-11 HEAVY DUTY BITUMINOUS PAVEMENT  
SEE PAVEMENT DETAIL SHEET
  - C-12 ACCESS TO THE CONVENIENCE STORE MUST MEET ALL  
APPLICABLE ADA REQUIREMENTS REGARDING VAN  
ACCESSIBLE PARKING SPACES AND DEDICATED ACCESS WAYS  
INTO THE BUILDING
  - C-13 EXCAVATE, RELOCATE, LEGALLY DISPOSE OF APPROXIMATELY  
760 CUBIC YARDS OF EXISTING WASTEWATER PLANT WITHIN  
AREA (SEE LANDSCAPE PLAN)
  - C-14 TANK VENT RISER  
(SEE DISPENSER AND PIPING DETAILS SHEET)
  - C-15 4.00' X 6.00' DISPENSER ISLAND TYP 7 PLACES  
(SEE DISPENSER AND PIPING DETAILS SHEET)
  - C-16 U-SHAPED BOLLARD AT CANOPY COLUMNS  
(SEE DISPENSER AND PIPING DETAILS SHEET)
  - C-17 24 FT X 108 FT X 8" CONCRETE CANOPY MAT  
(SEE PAVEMENT DETAIL SHEET)
  - C-18 24 FT X 65 FT X 8" CONCRETE CANOPY MAT  
(SEE PAVEMENT DETAIL SHEET)
  - C-19 DIRECTIONAL PAVEMENT LEFT TURN MARKINGS.  
(SEE SHEET C-502)
  - C-20 INSTALL INLET FILTERS (SEE DETAIL 1 ON SHEET C-500)
  - C-21 DIMENSION CONTROL POINT ALL DIMENSIONS ARE PARALLEL  
ON EAST SIDE OF THE SITE UNLESS OTHERWISE STATED
  - C-22 REPAIR EXISTING CHAIN LINK FENCE  
AS NEEDED AND ADD NEW VINYL SLATS  
FOR SCREENING
  - C-23 DUAL MASTER DISPENSER
  - C-24 POST MOUNTED VAN ACCESSIBLE E PARKING SIGN
  - C-25 CONVERT APPROX. 2,265 S.F. OF EXISTING BLDG  
INTO NEW CONVENIENCE STORE
  - C-26 NEW ID SIGN (SEE SHEET C-504)
  - C-27 INSTALL NEW TAPERS (SEE SHEET C-501)
  - C-28 WIDEN PAVEMENT AND SHOULDER  
PER SHEET C-501
  - C-29 EMB. OVER PARKING (12 SPACES)
  - C-30 LANDSCAPING (SEE SHEET L-100)

EXISTING	PROPOSED
1. GARB A DUTTER	1. GARB A DUTTER
2. SANITARY SEWER	2. SANITARY SEWER
3. GAS LINE	3. GAS LINE
4. OVERHEAD ELECTRIC	4. OVERHEAD ELECTRIC
5. AIR LINE	5. AIR LINE
6. OVERHEAD TELEPHONE	6. OVERHEAD TELEPHONE
7. STORM SEWER	7. STORM SEWER
8. MANHOLE	8. MANHOLE
9. CATCH BASIN	9. CATCH BASIN
10. VARIABAL LIGHT	10. VARIABAL LIGHT
11. U/G ELECTRIC CONDUIT	11. U/G ELECTRIC CONDUIT
12. POWER POLE	12. POWER POLE
13. TELEPHONE RISER	13. TELEPHONE RISER
14. TELEPHONE MANHOLE	14. TELEPHONE MANHOLE
15. LIGHT POLE	15. LIGHT POLE
16. GATE VALVE	16. GATE VALVE
17. GAS METER	17. GAS METER
18. VARD BASIN	18. VARD BASIN
19. CLEAN OUT WITH CONIC	19. CLEAN OUT WITH CONIC
20. EDGE OF WOODS	20. EDGE OF WOODS
21. DECIDUOUS TREES/SHRUB	21. DECIDUOUS TREES/SHRUB
22. CORNER TREE/SHRUB	22. CORNER TREE/SHRUB
23. PROPOSED SPOT ELEVATIONS	23. PROPOSED SPOT ELEVATIONS
24. CONTOUR LINES	24. CONTOUR LINES
25. TO BE REMOVED	25. TO BE REMOVED
26. TO REMAIN	26. TO REMAIN
27. SALT FENCE	27. SALT FENCE
28. LIMITS OF WORK	28. LIMITS OF WORK
29. EXISTING	29. EXISTING

**NOTES TO GENERAL CONTRACTOR**

- UNDERGROUND UTILITIES MUST BE MARKED AS REQUIRED BY PUBLIC ACT 53 OF 1974. TELEPHONE THE REGIONAL UTILITY LOCATION/RECORDAL SYSTEM OFFICE A MINIMUM OF THREE (3) WORKING DAYS BEFORE ANY DIGGING.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONFORMING THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CALCULATING ALL MATERIAL QUANTITIES.
- SEE SHEET G-4002 FOR OTHER IMPORTANT GENERAL NOTES.
- TOTAL DISTURBED AREA OF THIS PROJECT IS 1.182 ACRES (79,091.78 S.F.)
- NO EXPANSION OF IMPERVIOUS AREA IS MADE PART OF THIS PROJECT.
- DETENTION POND SHALL BE ENLARGED BY 760 C.Y. TO MEET CURRENT WQSC STANDARDS
- SITE SHALL CONTINUE TO UTILIZE EXISTING WATER, STORM AND SANITARY SYSTEMS IN PLACE.
- NO UTILITY ALTERATIONS ARE PROPOSED AS PART OF THIS PROJECT.

REV	DATE	DESCRIPTION
1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12/31/14	REVIEW COMMENTS
4	03/06/15	REVIEW COMMENTS
5	04/01/15	WCWRC SOIL EROSION COMMENTS
6	7/7/15	REVIEW COMMENTS

NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600

**NT**  
NOWATZKE TRUCK & TRAILER  
6900 Whitmore Lake Rd., Whitmore Lake, MI 48189

**DAMRATHGROUP**  
development support services  
Damrath Group, LLC  
143 Oak Centre, #161  
Northville, MI 48161  
Office: 248.880.2158

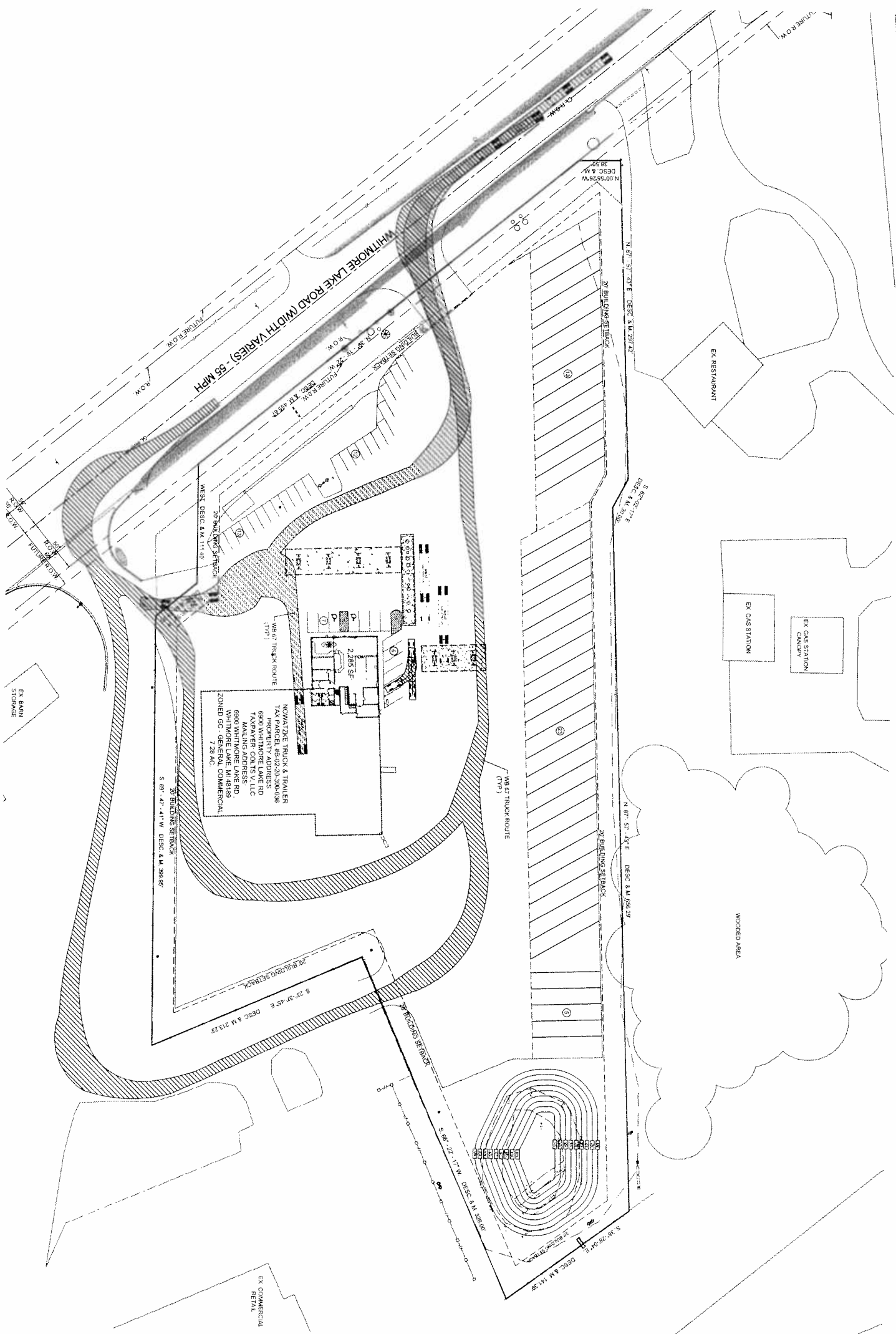
**MISS DIG**  
1-800-482-7171  
BEFORE YOU DIG  
CALL 811

STATE OF MICHIGAN  
JONAS DOKSIS  
Professional Engineer  
No. 000000  
Professional Engineer

**SITE PLAN**  
SHEET NO. C-200  
DATE: 12/31/14  
PROJECT NO. 000000  
DESIGNED BY: JD  
CHECKED BY: JD

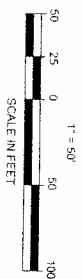







EXISTING		PROPOSED	
1	CHINA & GUTTER	1	CHINA & GUTTER
2	SALVING'S SEWER	2	WATER LINE
3	DRAIN LINE	3	SEWER
4	OVERHEAD ELECTRIC	4	UNDERGROUND ELECTRIC
5	UNDERGROUND TELEPHONE	5	UNDERGROUND TELEPHONE
6	STANDARD TELEPHONE	6	STANDARD TELEPHONE
7	PROPERTY LINE	7	PROPERTY LINE
8	WATERMAIN LINE	8	WATERMAIN LINE
9	CATCH BASIN	9	CATCH BASIN
10	VARIABLE LIGHT	10	VARIABLE LIGHT
11	ELECTRIC CONDUIT	11	ELECTRIC CONDUIT
12	POWER POLE	12	POWER POLE
13	FIRE HYDRANT	13	FIRE HYDRANT
14	TELEPHONE RISER	14	TELEPHONE RISER
15	TELEPHONE MANHOLE	15	TELEPHONE MANHOLE
16	LIGHT POLE	16	LIGHT POLE
17	STOVE OBT VALVE	17	STOVE OBT VALVE
18	ELECTRIC METER	18	ELECTRIC METER
19	GAS METER	19	GAS METER
20	DATE VALVE	20	DATE VALVE
21	WATER MAIN	21	WATER MAIN
22	WATER BASIN	22	WATER BASIN
23	CLEAN OUT	23	CLEAN OUT
24	CLEAN OUT WITH CONIC	24	CLEAN OUT WITH CONIC
25	EDGE OF BRIDGE	25	EDGE OF BRIDGE
26	EDGE OF ROAD	26	EDGE OF ROAD
27	EDGE OF SIDEWALK	27	EDGE OF SIDEWALK
28	EDGE OF WOODSHED	28	EDGE OF WOODSHED
29	EDGE OF WOODSHED	29	EDGE OF WOODSHED
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TRUCK TURN PLAN  
SCALE: 1" = 50.0'



**MISS  
DIG**



3 MOORE HILL CEMETERY  
BEFORE YOU DIG  
OR DRILL  
CALL  
1-800-482-7171  
1 TOLL FREE 1

DATE: 12/31/14  
PROJECT NO.: 000000  
SIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

TRUCK TURN PLAN

SHEET NO.  
C-202

A circular professional engineer seal for the State of Michigan. The outer ring contains the text "STATE OF MICHIGAN" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. Inside this ring, the text "LICENSED" is at the top and "ENGINEER" is at the bottom, also separated by two stars. In the center of the seal, the name "JOHN G. DAMRATH III" is printed above the license number "NO 36510". The seal is stamped over a document that includes a signature and the date "12/11/11".

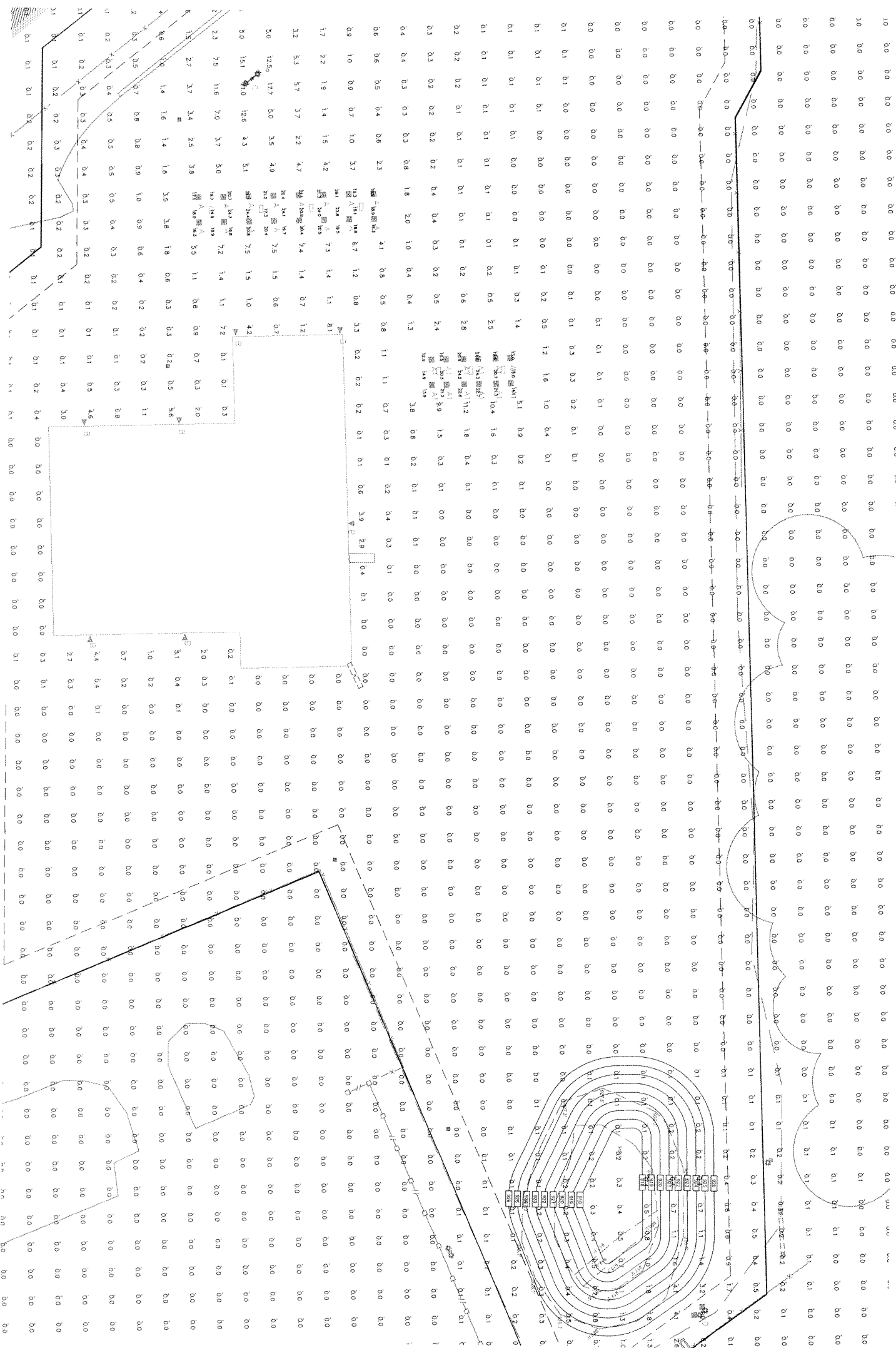
REV	DATE	DESCRIPTION
1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12/31/14	REVIEW COMMENTS
4	03/06/15	REVIEW COMMENTS

NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600



**DAMRATHGROUP**  
★ development support services

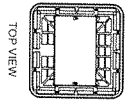
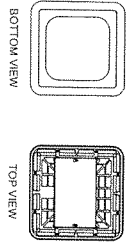
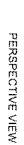
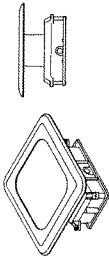
Damrath Group, LLC  
143 Gady Centre, #151  
Northville, MI 48167  
Office: 248.380.3159



Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Description	LLF	Lumens/Lamp	Arr. Watts
16	A	SINGLE	CRUS-SC-LED-VLW-CW DIMMED 30%	0.700	N.A.	8842	78.7
12	A1	SINGLE	CRUS-SC-LED-VLW-CW DIMMED 50%	0.500	N.A.	8842	78.7
7	B	SINGLE	PWM-S-LED-HO-CW-UE	1.000	N.A.	5184	55.6
1	C	D180	XL0M-FT-LED-HO-CW-D180-25 MT HGT W/15 DEGREE BRACKET	1.000	N.A.	61874	551.2
1	D	2 @ 90 DEGREES	XL0S-FT-LED-SS-CW-HSS-090-24 MT HGT W/15 DEGREE BRACKET	1.000	N.A.	18302	191.6

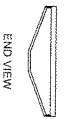
Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Avg/Min
ALL CALC POINTS						
IRG CANOPY	Illuminance	Fc	0.21	21.0	0.0	N.A.
SM CANOPY	Illuminance	Fc	19.92	24.4	14.9	1.34
	Illuminance	Fc	19.02	24.3	12.9	1.47
						Max/Min
						1.64
						1.86

CRUS-SC-LED  
LED CANOPY LIGHT - LEGACY



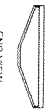
# XLCM

## LED Crossover Area Light



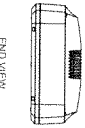
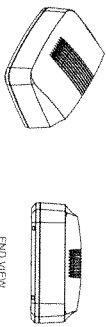
## XLCS

### LED Crossover Area Light

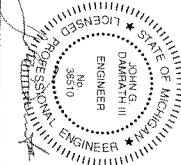


PWM

## LED Crossover Wall Mount Light



NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600

[illegible]

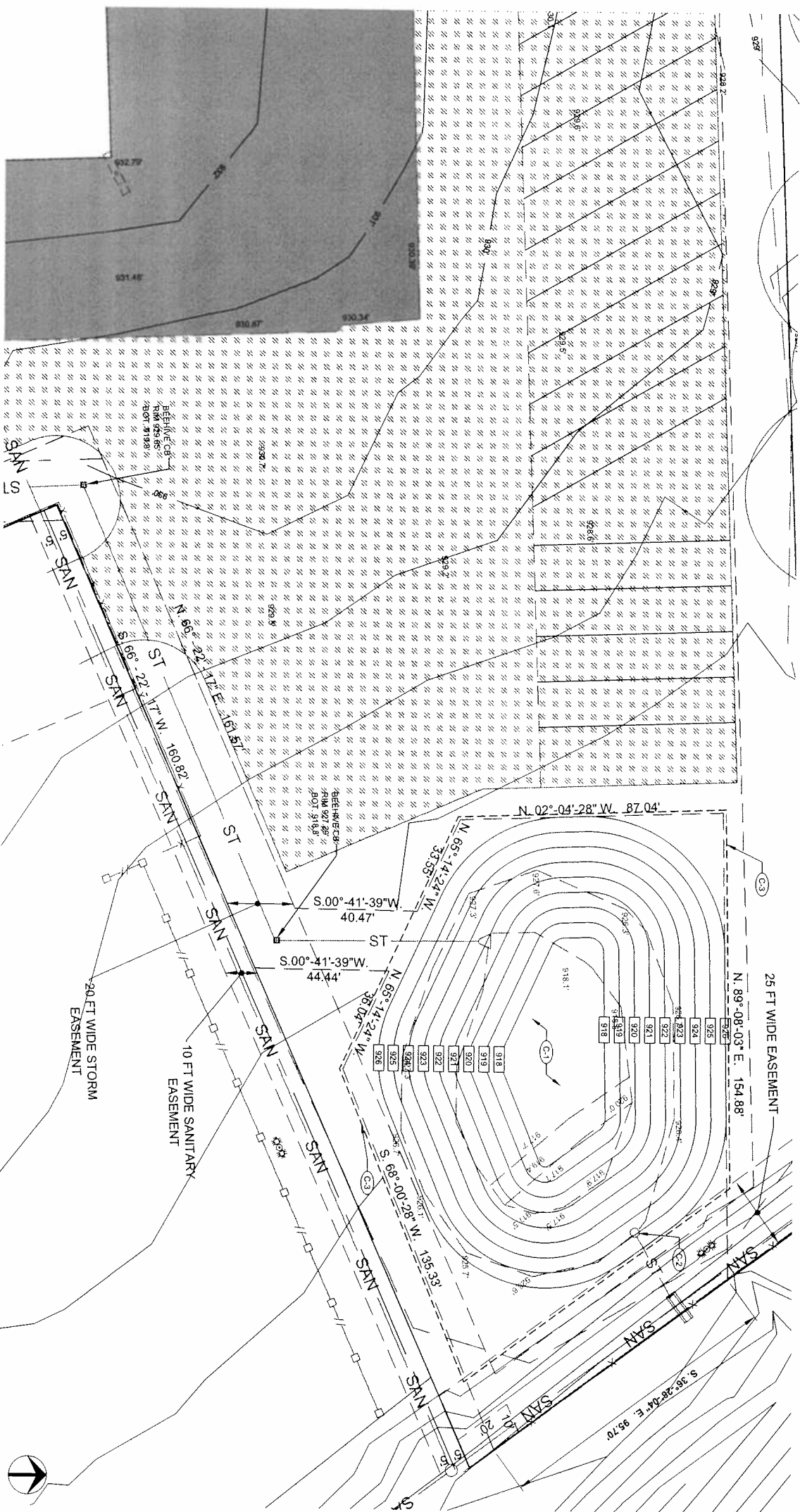
DATE:	12/31/14
PROJECT NO.:	000000
DESIGNED BY:	JD
DRAWN BY:	BH
CHECKED BY:	JD

SHEET NO.  
C-203









EXISTING		PROPOSED	
1	CORNER GUTTER	1	CORNER GUTTER
2	SANITARY SEWER	2	SANITARY SEWER
3	GAS LINE	3	GAS LINE
4	WATER MAIN AND ELECTRIC	4	WATER MAIN AND ELECTRIC
5	OVERHEAD ELECTRIC	5	OVERHEAD ELECTRIC
6	AIR LINE	6	AIR LINE
7	UNDERGROUND TELEPHONE	7	UNDERGROUND TELEPHONE
8	STORM SEWER	8	STORM SEWER
9	PROPOSED LINE	9	PROPOSED LINE
10	CATCH BASIN	10	CATCH BASIN
11	VARIABLE LIGHT	11	VARIABLE LIGHT
12	U.S. ELECTRIC CONDUIT	12	U.S. ELECTRIC CONDUIT
13	POWER POLE	13	POWER POLE
14	PERMANENT	14	PERMANENT
15	TELEPHONE MANHOLE	15	TELEPHONE MANHOLE
16	LIGHT POLE	16	LIGHT POLE
17	STUFF OFF VALVE	17	STUFF OFF VALVE
18	ELECTRIC METER	18	ELECTRIC METER
19	GAS METER	19	GAS METER
20	CASE VALVE	20	CASE VALVE
21	WATER BASH	21	WATER BASH
22	CLEAN OUT	22	CLEAN OUT
23	CLEAN OUT WITH CONC.	23	CLEAN OUT WITH CONC.
24	EDGE OF WOODS	24	EDGE OF WOODS
25	EDGE OF BRUSH	25	EDGE OF BRUSH
26	RECIDUOUS INTERSEURB	26	RECIDUOUS INTERSEURB
27	EXISTING SPOT ELEVATIONS	27	EXISTING SPOT ELEVATIONS
28	CONTOUR LINES	28	CONTOUR LINES
29		29	CONTOUR LINES
30		30	CONTOUR LINES
31		31	CONTOUR LINES
32		32	CONTOUR LINES
33		33	CONTOUR LINES
34		34	CONTOUR LINES
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92		92	CONTOUR LINES
93		93	CONTOUR LINES
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96		96	CONTOUR LINES
97		97	CONTOUR LINES
98		98	CONTOUR LINES
99		99	CONTOUR LINES
100		100	CONTOUR LINES

## GRADING NOTES

1. REFER SHEET C-10 FOR EROSION CONTROL, NOTES AND DETAILS.
2. VERIFY REQUIRED SLOPE ELEVATIONS/GRADING IN THE VICINITY OF THE BUILDING WITH THE ARCHITECTURAL PLANS.
3. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN COMPLIANCE WITH THE DRAWINGS AND PROJECT MANUAL, AND WITH LOCAL JURISDICTIONAL AUTHORITY STANDARDS AND SPECIFICATIONS.
4. ALL UNDESIRED SLOPE ELEVATIONS IN PAVED AREAS ARE TO TOP OF PAVEMENT SURFACE.
5. THE PROJECT SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AT ALL TIMES, ENSURING NO AREAS OF STANDING WATER.
6. THE GENERAL CONTRACTOR SHALL, AT HIS OR HER EXPENSE, RESTORE ANY AND ALL STRUCTURES, PIPE UTILITY, PAVEMENT, CURB, SIDEWALKS, LANDSCAPED AREA, ETC. DISTURBED WITHIN THE SITE ADJOINING PROPERTIES DURING DEMOLITION OR CONSTRUCTION, SUCH FACILITIES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER, TO MEET THE INTENTION OF THE AFFECTED OWNERS(S).
7. REDEMPTION OF THE AFFECTED PROPERTY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND APPROVED BY THE OWNER'S REPRESENTATIVE, AFTER SUPERVISOR OR ROUGH GRADED.
8. UNLESS OTHERWISE EXPRESSLY INDICATED HEREON FINISHED GRADES ARE TO MATCH ADJACENT EXISTING GRADES.
9. THE GENERAL CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. SEE THIS SHEET FOR LIMIT OF DISTURBANCE PROTECT EXISTING TREES TO REMAIN WITH TEMPORARY SIGNAGE PLACED AT THE DRP LINE AND GROUP LINE DISTANCE OR STORAGE AREA TO PREVENT DAMAGE TO TREES AND/OR SOILS. UNLESS HERON EXPRESSLY INDICATED OTHERWISE.
10. ALL EXCAVATION IS CONSIDERED UNLAWFUL, AND THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL MEANS, METHODS AND MATERIALS OF CONSTRUCTION TO COMPLETE THE CONSTRUCTION PER THE DRAWINGS AND PROJECT MANUAL. ADDITIONALLY, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE OFF-SITE DISPOSAL OF EXCESS OR UNSUITABLE MATERIALS TO COMPLETE THE PROJECT.
11. DETENTION POND TO BE ENLARGED IN ACCORDANCE TO THE WASTEWATER TREATMENT PLANT DESIGN REQUIREMENTS.
12. TOTAL DISTURBED AREA OF THIS PROJECT IS: 18.2 ACRES (79,090.78 S.F.)
13. DETENTION POND SHALL BE ENLARGED BY 760 C.Y. TO MEET CURRENT WQRC STANDARDS.

## SCOPE OF WORK




- C-1 EXCAVATE, REMOVE, LEGALLY DISPOSE OF APPROXIMATELY 760 C.Y. FROM DETENTION POND MAXIMUM SLOPE NOT TO EXCEED 5:1.
- C-2 INSTALL INLET FILTERS. (SEE DETAIL 1 ON SHEET C-500)
- C-3 INSTALL SILT FENCE. (SEE DETAIL 5 ON SHEET C-500)




## DETENTION POND VOLUMES




926 - 14.27.09 C.F.  
925 - 12.175.44 C.F.  
924 - 10.237.00 C.F.  
923 - 8.455.65 C.F.  
922 - 6.831.38 C.F.  
921 - 5.364.18 C.F.  
920 - 4.054.07 C.F.  
919 - 2.901.03 C.F.  
918 - 1.905.08 C.F.




926-918 = 66,194 / 8 C.F.  
925-918 = 51,923.83 C.F.  
TOTAL DETENTION PROVIDED = 51,924 C.F.  
PLUS 1 FT FREEBOARD



1. THERE ARE NO KNOWN REPORTS OF FLOODING OR STORMWATER MANAGEMENT PROBLEMS RELATED TO THIS SITE, OR DETENTION POND DETENTION POND.
2. THE DRAINAGE AREA CONTRIBUTING TO THE DETENTION POND IS NOT BEING INCREASED FROM CURRENT CONDITIONS.
3. BASED ON VISUAL EXAMINATION, THE SOILS WERE DEEMED UNSUITABLE TO ACCOMMODATE AN INFILTRATION COMPONENT IN THE DESIGN OF THE DETENTION POND.
4. THE EXISTING DETENTION POND CAPACITY IS 65,657 C.F.

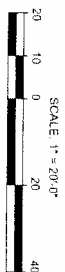
Radial Profiles of Velocity and Dynamics									
Total $\omega = 4000$ s		3.7% $\Delta\omega = 10$ s		8.7% $\Delta\omega$		1.7% $\Delta\omega$		1.7% $\Delta\omega$	
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz					

Radial Profiles of Velocity and Dynamics									
Total $\omega = 4000$ s		3.7% $\Delta\omega = 10$ s		8.7% $\Delta\omega$		1.7% $\Delta\omega$		1.7% $\Delta\omega$	
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz					

Radial Profiles of Velocity and Dynamics									
Total $\omega = 4000$ s		3.7% $\Delta\omega = 10$ s		8.7% $\Delta\omega$		1.7% $\Delta\omega$		1.7% $\Delta\omega$	
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz					

Radial Profiles of Velocity and Dynamics									
Total $\omega = 4000$ s		3.7% $\Delta\omega = 10$ s		8.7% $\Delta\omega$		1.7% $\Delta\omega$		1.7% $\Delta\omega$	
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
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	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
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	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
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	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
Total $\omega = 4000$ s									
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz	
2.0E+02 Hz		2.0E+02 Hz		2.0E+02 Hz					

Radial Profiles of Velocity and Dynamics									
Total $\omega = 4000$ s		3.7% $\Delta\omega = 10$ s		8.7% $\Delta\omega$		1.7% $\Delta\omega$		1.7% $\Delta\omega$	
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
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	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude	Amplitude
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	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01
	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	3.6E+01	

[illegible]

SCALE, 1" = 20'-0"

0 20

SCALE IN FEET



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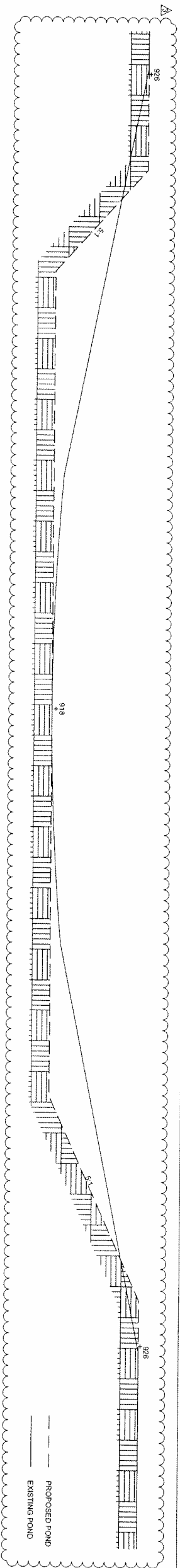
A circular professional engineer seal for the State of Michigan. The outer ring contains the text "STATE OF MICHIGAN" at the top and "LICENSED PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the name "JOHN G. DARRATH III", the title "ENGINEER", and the license number "NO. 38510". A signature is written across the left side of the seal.

REV	DATE	DESCRIPTION
1	12-10-14	DETENTION POND VOLUME
2	12-31-14	REVIEW COMMENTS
3	03-06-15	REVIEW COMMENTS
4	03-13-15	WCWRC COMMENTS

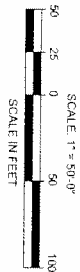
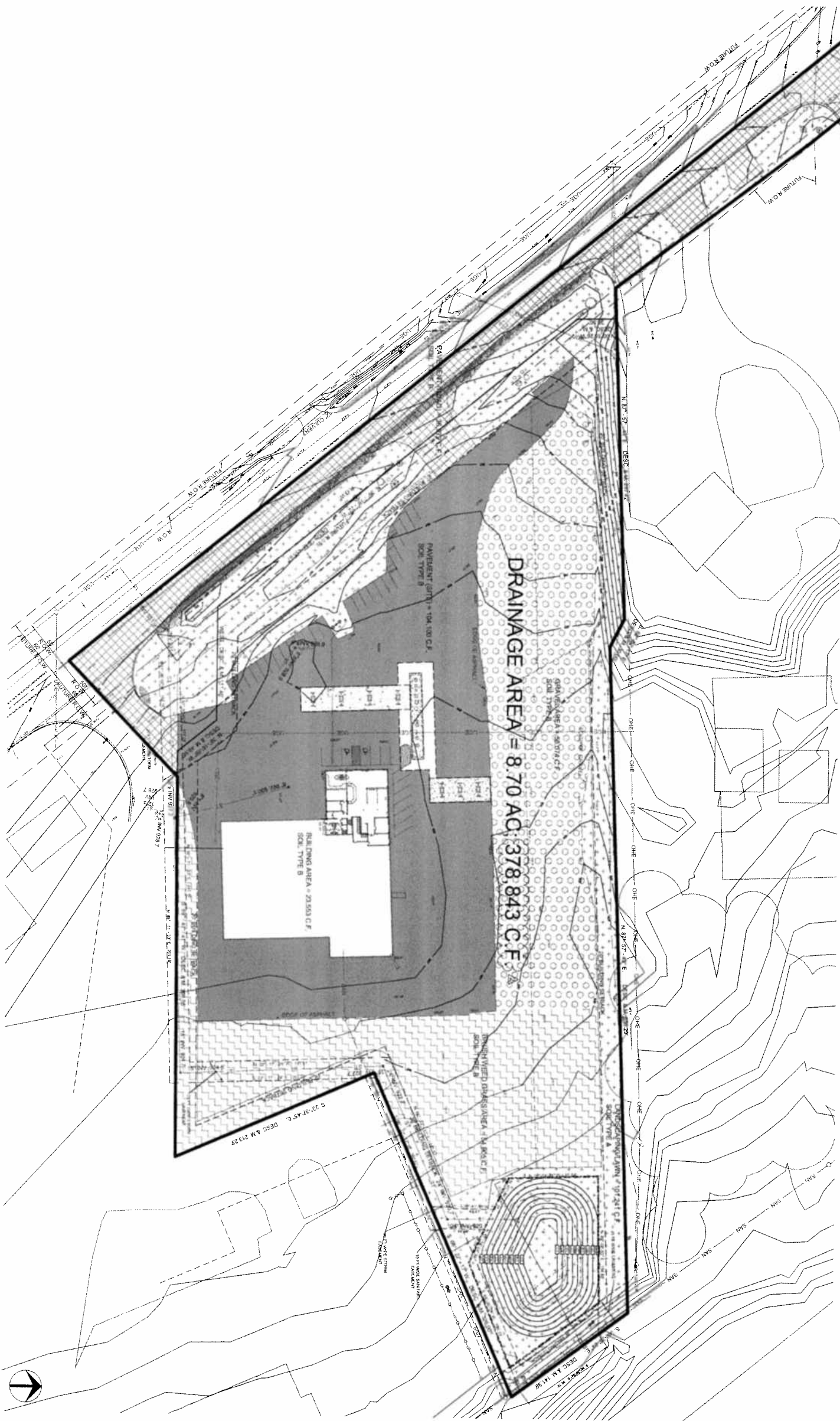
DATE:	12
PROJECT NO.:	0
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	

**DETENTION POND  
GRADING PLAN**

C-301



DETENTION POND SECTION A-A  
NOT TO SCALE



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C-302

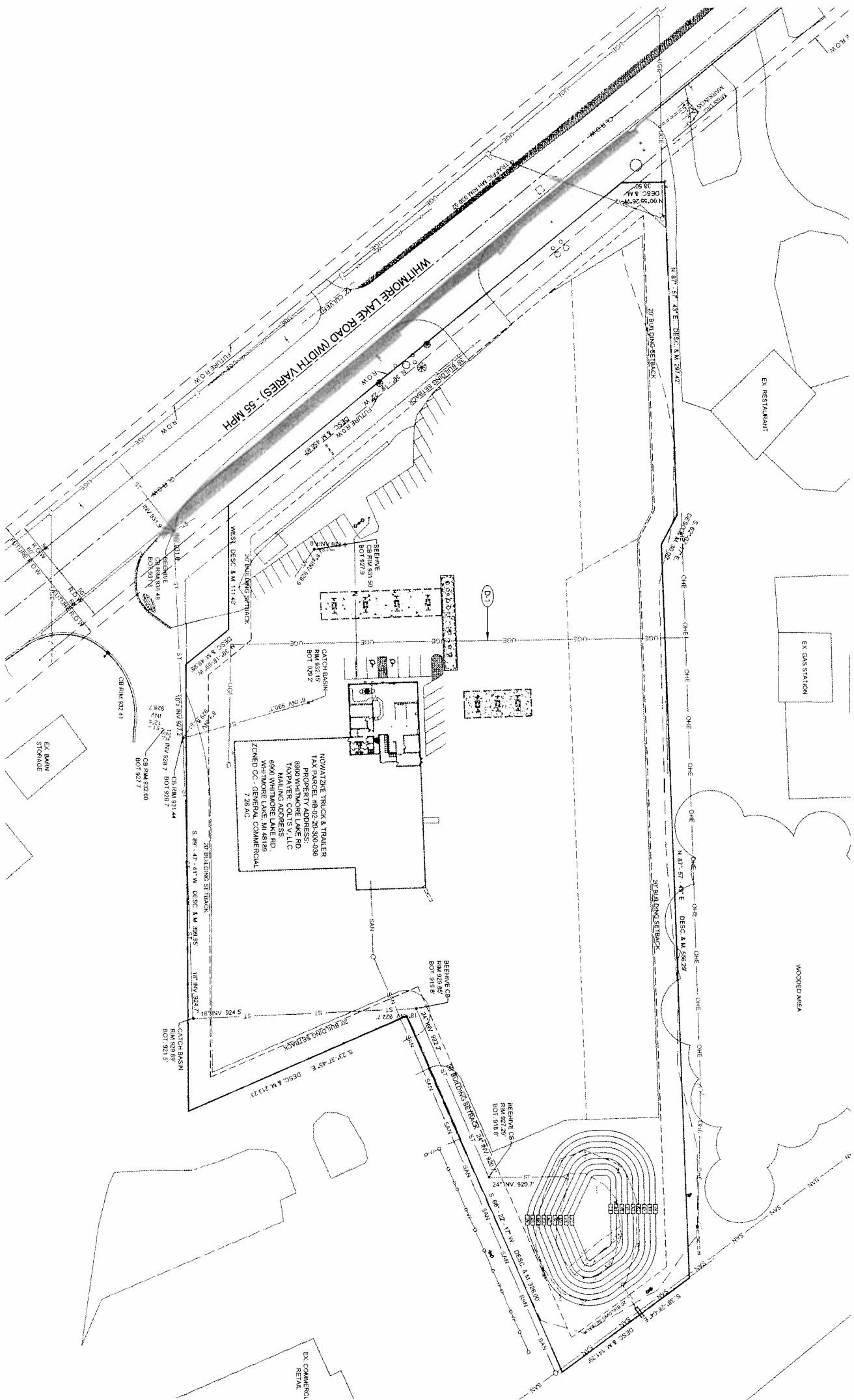
REV	DATE	DESCRIPTION
1	02-28-15	REVIEW COMMENTS
2	03-06-15	REVIEW COMMENTS
3	03-13-15	WCWRC COMMENTS

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[illegible]

## UTILITY PLAN

SCALE: 1" = 50'-0"

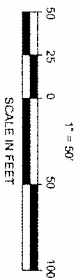
## SCOPE OF WORK

### B - SITE FEATURES TO BE REMOVED

- D-1 EXCAVATE DOWN BY HAND TO LOCATE ELECTRIC LINE PRESERVE LINE DURING UST INSTALLATION.

## UTILITY NOTES

1. PROTECT AND MAINTAIN CROSSINGS WITH ANY AND ALL OTHER UTILITY LINES.
2. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONTRACTING THE JURISDICTIONAL AUTHORITY OR AUTHORITIES TO PROVIDE FEES AND SECURE PERMITS FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
3. THOROUGH COORDINATION WITH THE RESPECTIVE UTILITY COMPANIES SHALL BE PERFORMED BY THE GENERAL CONTRACTOR TO INSURE THAT ALL UTILITY MATERIALS AND CONSTRUCTION METHODS ARE MET.
4. THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING SERVICES AND SERVICE LINES, PRIOR TO CONSTRUCTION.
5. THE GENERAL CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE SENSING DEVICES ARE UTILIZED. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CROSS EXISTING UTILITIES AND PROTECT THEM FROM DAMAGE. THE GENERAL CONTRACTOR SHALL CONTACT THE OWNERS REPRESENTATIVE IN THE EVENT OF ANY UNPREDICTED CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SO THAT AN APPROPRIATE MODIFICATION BE MADE.
6. THE GENERAL CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY COMPANIES FOR SERVICE INSTALLATIONS AND CONNECTIONS AND MAIN SERVICE RELOCATIONS. THE GENERAL CONTRACTOR SHALL COORDINATE THE WORK TO BE PERFORMED BY THE JURISDICTIONAL AUTHORITY OR AUTHORITIES TO PROVIDE FEES AND SECURE PERMITS FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES. DISCONTINUING, RELOCATION, INSPECTIONS AND DEMOLITIONS AS NECESSARY OR APPROPRIATE.
7. THE GENERAL CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS, ETC. WITHOUT INTERRUPTION UNLESS UNTIL AUTHORIZED TO DISCONNECT BY THE OWNERS COMPANIES AND JURISDICTIONAL AUTHORITY OR AUTHORITIES. THE CONTRACTOR SHALL INSTALL AS NECESSARY TEMPORARY SITE LIGHTING, GAS SANITARY, WATER, STORM, ELECTRIC, TELEPHONE AND CABLE SERVICES TO BUILDINGS) THAT ARE TO REMAIN OPERATIONAL.
8. THE GENERAL CONTRACTOR SHALL PROVIDE SLEEVES UNDER FOOTINGS AND/OR THROUGH FOUNDATIONS FOR UTILITY CONNECTIONS.
9. THE GENERAL CONTRACTOR SHALL PROVIDE ALL BENDS, FITTINGS, ADAPTERS ETC. AS REQUIRED FOR PIPE CONNECTIONS TO BUILDINGS/COMPANY STUB-OUTS, INCLUDING ROOF-ROOTING DRAIN CONNECTIONS AND ROOF LEADERS, AND TO THE STORM DRAINAGE SYSTEM.
10. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION PRIOR TO APPROVAL FOR BACKFILL. IN ACCORDANCE WITH THE UTILITY COMPANY OR COMPANIES, AND OTHER JURISDICTIONAL AUTHORITY REQUIREMENTS.
11. THE GENERAL CONTRACTOR SHALL RESTORE ANY STRUCTURE, PIPE, EMENT CLINGS, SODAS, APPROPRIATE RELATIONS, ETC. TO ORIGINAL CONDITION OR BETTER, DISTURBED DURING CONSTRUCTION TO THE ORIGINAL CONDITION OR BETTER.
12. PENDING THE GENERAL CONSTRUCTORS NOTIFICATION OF AND APPROVAL BY THE OWNERS REPRESENTATIVE, UTILITY COMPANY DESIGN AS REFLECTED IN THE PLANS AND PROJECT MANUAL, MAY CHANGE SUBJECT TO UTILITY COMPANY AND JURISDICTIONAL AUTHORITY REVIEW.



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\*LOCAL PRICES\*

DATE	12/3/74
PROJECT NO.	000000
DESIGNED BY	JD
DRAWN BY	BH
CHECKED BY	JD

UTILITY PLAN

SHEET NO  
C-400

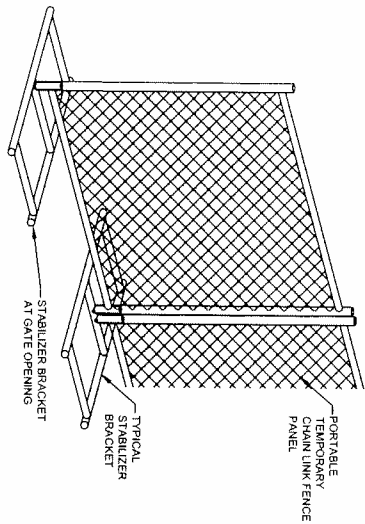
REV	DATE	DESCRIPTION
1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12-31-14	REVIEW COMMENTS
4	03-06-15	REVIEW COMMENTS

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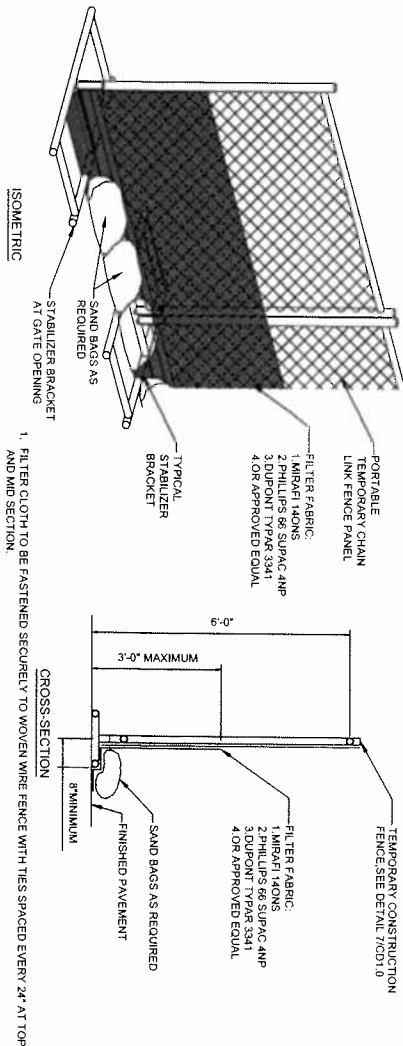


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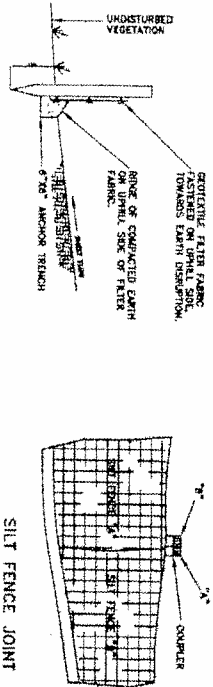




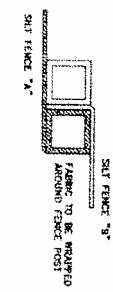
4 CONSTRUCTION FENCE  
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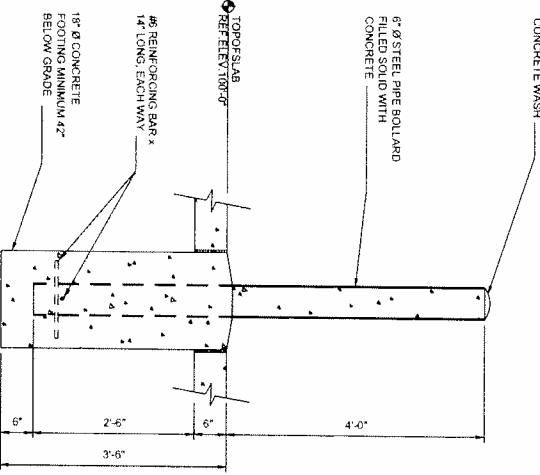
2 SILT FENCE DETAILS  
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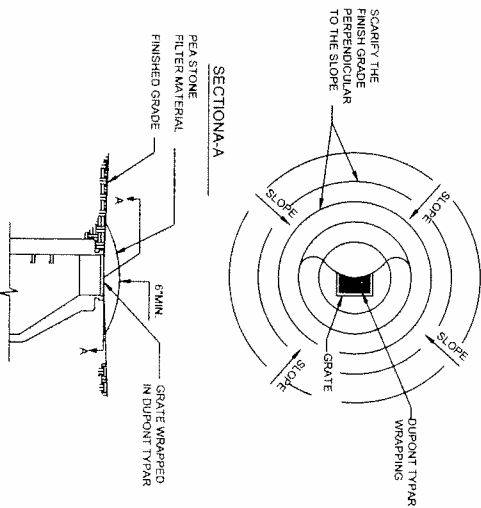
SILT FENCE JOINT



5 SILT FENCE DETAIL  
SCALE: NOT TO SCALE



3 BOLLARD DETAIL  
SCALE: NOT TO SCALE



1 INLET FILTER DETAIL  
SCALE: NOT TO SCALE

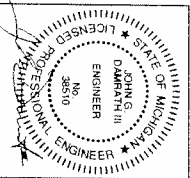
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REV	DATE	DESCRIPTION
1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12-31-14	REVIEW COMMENTS
4	03-13-15	WCWRC COMMENTS



DATE: 12/31/14  
PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

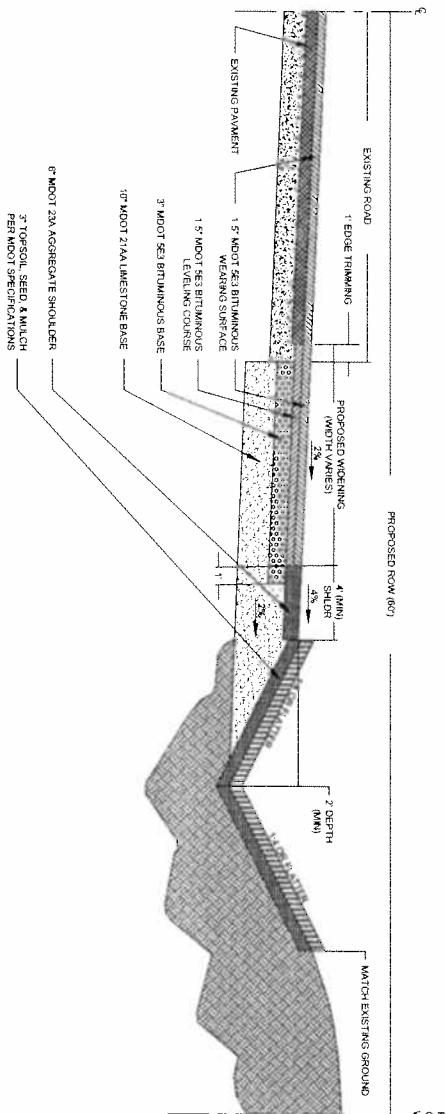
SITE DETAILS

SHEET NO.  
C-500



HOT MIX ASPHALT PAVEMENT

TYPICAL RURAL CROSS-SECTION FOR PROPOSED PAVEMENT/ROADWAY WIDENING

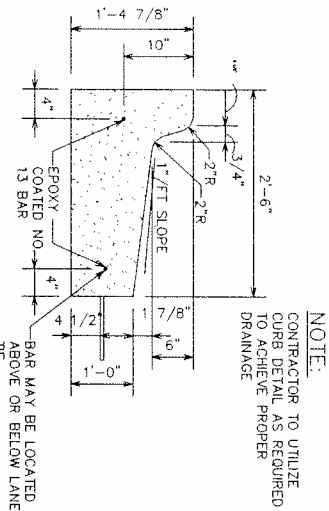


ROAD WIDENING DETAIL

SCALE: NOT TO SCALE

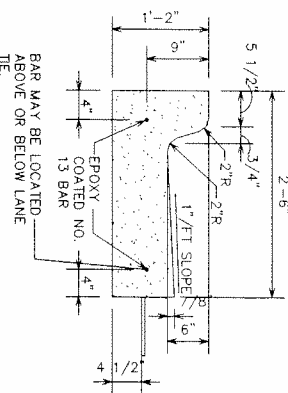
CONCRETE CURB DETAIL #1

SCALE: NOT TO SCALE



CONCRETE CURB DETAIL #2

SCALE: NOT TO SCALE



ROAD WIDENING PLAN

SCALE: 1" = 40' 0"

SCOPE OF WORK

A. EXISTING FEATURES TO REMAIN

- (A.1) TRAFFIC DETECTOR
- (A.2) EXISTING SIGNAL AHEAD SIGN
- (A.3) TRAFFIC MANHOLE
- (A.4) TRAFFIC SIGNALS
- (A.5) EDGE OF PAVEMENT
- (A.6) CENTERLINE 120 FT FUTURE RIGHT OF WAY
- (A.7) 2,398 S.F. CONCRETE (7R)
- (A.8) EXISTING FEATURE TO BE REMOVED
- (B.1) EXCAVATE 1,131 S.F. SHOULDER AREA 4 FT WIDE TO A 6 INCH DEPTH
- (B.2) EXCAVATE 467 S.F. SHOULDER AREA 4 FT WIDE TO A 6 INCH DEPTH
- (B.3) EXCAVATE 1,862 S.F. SHOULDER AREA 4 FT WIDE TO A 6 INCH DEPTH

- (B.4) SAWCUT EDGE, EXCAVATE 3,262 S.F. TO A 16 INCH DEPTH
- (B.5) SAWCUT EDGE, EXCAVATE 723 S.F. TO A 16 INCH DEPTH
- (B.6) REMOVE EXISTING PAINT STRIPES
- (C.1) NEW FEATURES
- (C.2) WIDEN APPROX 1,262 S.F. OF ROAD PLACE 10 INCHES MDOT #2A LESTONE BASE, MDOT #2, ADD LEFT TURN LANE. (SEE DETAIL THIS SHEET)
- (C.3) WIDEN APPROX 723 S.F. OF ROAD PLACE 10 INCHES MDOT #2A LESTONE BASE, MDOT #2, ADD LEFT TURN LANE. (SEE DETAIL THIS SHEET)
- (C.4) 1,131 S.F. NEW 4 GRAVEL SHOULDER PLACE 6 INCHES MDOT #2A (SEE DETAIL THIS SHEET)
- (C.5) 667 S.F. NEW 4 GRAVEL SHOULDER PLACE 6 INCHES MDOT #2A (SEE DETAIL THIS SHEET)
- (C.6) 1,862 S.F. NEW 4 GRAVEL SHOULDER PLACE 6 INCHES MDOT #2A (SEE DETAIL THIS SHEET)

NOTES

1. NO PARKING OR STORAGE OF MATERIAL OR EQUIPMENT WILL BE ALLOWED WITHIN WORK RIGHT OF WAY.
2. FULL WIDTH OF THE ROAD IN THE WIDENING AREA SHALL BE OVERLAIN WITH 1 1/2" LVSP HMA. (SEE DETAIL THIS SHEET)
3. ALL TRAFFIC CONTROL DEVICES USED ON THIS PROJECT SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. TRAFFIC CONTROL DEVICES ARE INCLUSIVE OF SIGN, BARRICADES, VERTICAL PANELS, DRUMS, WARNING LIGHTS, ARROW BOARDS, CHANGEABLE MESSAGE SIGNS, CONES, TUBULAR MARKERS, PAVEMENT TAPE, PAINT AND PAVEMENT MARKERS.
4. THE CROSS SECTION SHALL BE THE FOLLOWING:
  - a. 1.5' MDOT #23 BITUMINOUS WEARING SURFACE
  - b. 1.5' MDOT #23 BITUMINOUS LEVELING COURSE
  - c. 3' MDOT #23 BITUMINOUS BASE
  - d. 10' MDOT #2A LESTONE BASE

5. ALL WORK WITHIN THE RIGHT-OF-WAY SHALL BE DONE IN CONFORMANCE WITH CURRENT WORK STANDARD SPECIFICATIONS FOR CONSTRUCTION AND ACCORDING TO THE ADMINISTRATIVE RULES OF ACT 200, P.A. OF 1969.
6. DISTURBED AREAS SHALL BE RESTORED WITH TOPSOIL, MULCH AND SEED OR SOD ONLY. MINIMUM OF 3" TOPSOIL REQUIRED.
7. NO WORK SHALL BE PERFORMED WITHOUT INSPECTION.
8. ALL WORK ROADS MUST BE MAINTAINED DURING CONSTRUCTION.
9. STREETS SHALL BE KEPT FREE OF MUD, DIRT, CONSTRUCTION DEBRIS, DUST AND THE LIKE. IF CLEAN-UP IS NOT PERFORMED WITHIN 24 HOURS OF NOTIFICATION, THE WORKER RESERVES THE RIGHT TO PERFORM THE WORK AND CHARGE THE DEVELOPER ACCORDINGLY.
10. ALL MATERIALS AND MANUFACTURERS SHALL CONFORM TO THE 2012 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION AND WORK.

11. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN ADVANCE OF ANY WORK TO BE PERFORMED AND SHALL OBTAIN A UTILITY LOCATING REPORT FROM THE MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) PRIOR TO THE START OF ANY CONSTRUCTION.
12. THE CONTRACTOR SHALL PROVIDE NECESSARY SIGNS, BARRICADES AND LIGHTS TO PROTECT TRAFFIC AND THE WORK AS DIRECTED BY THE ENGINEER. SUCH DEVICES SHALL BE PLACED PRIOR TO STARTING WORK IN AFFECTED AREAS.
13. ALL SOIL EROSION AND SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE COUNTY STANDARDS AND DETAILS. THE SOIL EROSION AND SEDIMENTATION CONTROL FOR ALL MATERIALS THAT ARE DISPOSED OF OFF OF THE PROJECT SITE.
14. ALL SOIL EROSION MEASURES MUST BE PROPERLY PLACED PRIOR TO GRADING OR OTHER CONSTRUCTION ACTIVITIES.

1.5' MDOT LVSP BITUMINOUS WEARING SURFACE

NEW 6" ASPHALT PAVEMENT

GRAVEL SHOULDER

REV	DATE	DESCRIPTION
1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12/31/14	REVIEW COMMENTS
4	02-03-15	REVIEW COMMENTS
5	02-26-15	PER RIA
6	02-26-15	CORRECTED CONCRETE
7	04-07-15	WCWR COMMENTS

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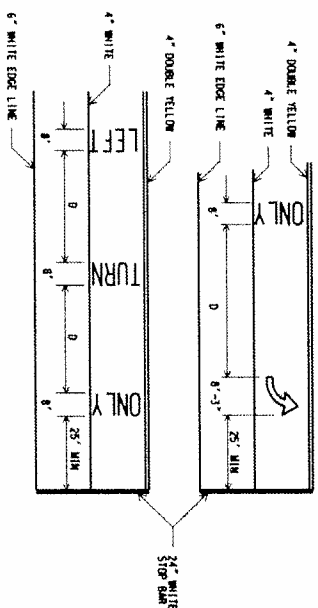
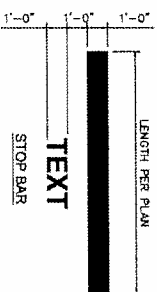
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DATE: 12/31/14  
PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD  
ROAD WIDENING PLAN  
ADD DETAILS  
C-501

- 

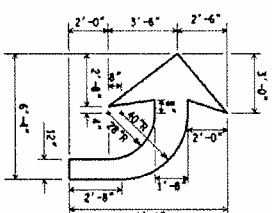


### TYPICAL SPACING OF ARROW AND PAVEMENT MESSAGES

POSTED SPEED (MPH)	DISTANCE "D" (FT)
25 AND BELOW	32
30-35	48
40-45	64
50 AND ABOVE	80

1. All special markings (arrow, message and symbol) shall be white.
2. When arrow and pavement message are used together, the arrow should be located downstream of the pavement message and separated from the pavement message by a distance of "0" (measured from the top of the message to the base of the arrow) as shown above.
3. When a series of pavement messages are used, they should be separated by a distance of "0" related to the posted speed, as shown in the table above. All symbols and legends shall be positioned in the center of the lane.

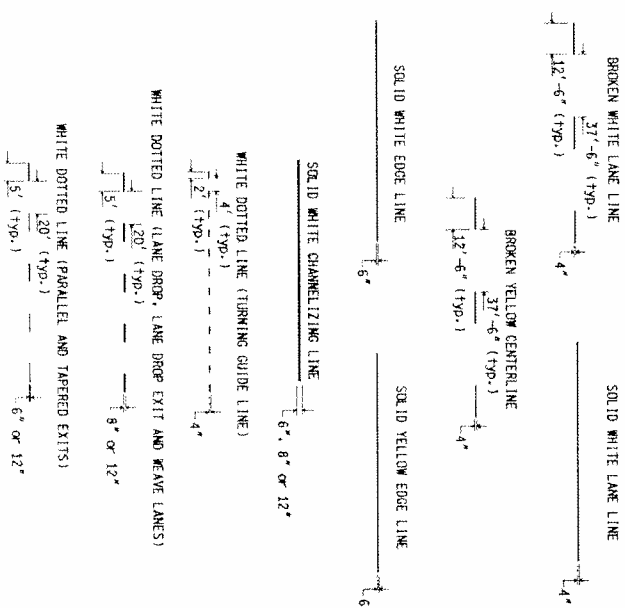
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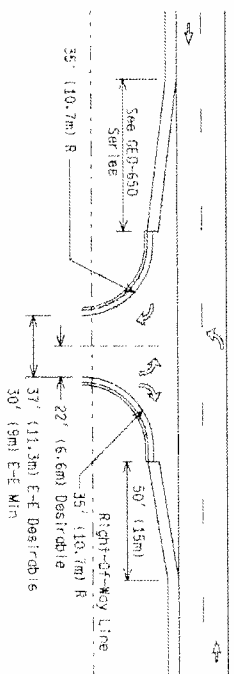
(RIGHT TURN ARROW TO BE REVERSE)  
OR SECOND MARKING APPLICATIONS (OVERLAYS) ONLY  
EFFECTIVE BEGINNING 2014 CONSTRUCTION SEASON

LEFT TURN ARROW  
(RIGHT TURN ARROW TO BE REVERSE)  
FOR NEW APPLICATIONS (NEW PAVEMENT SURFACE  
OR AFTER GRINDING OFF OLD MARKINGS)  
EFFECTIVE BEGINNING 2014 CONSTRUCTION SEASON

## TYPES OF PERMANENT LONGITUDINAL LINES

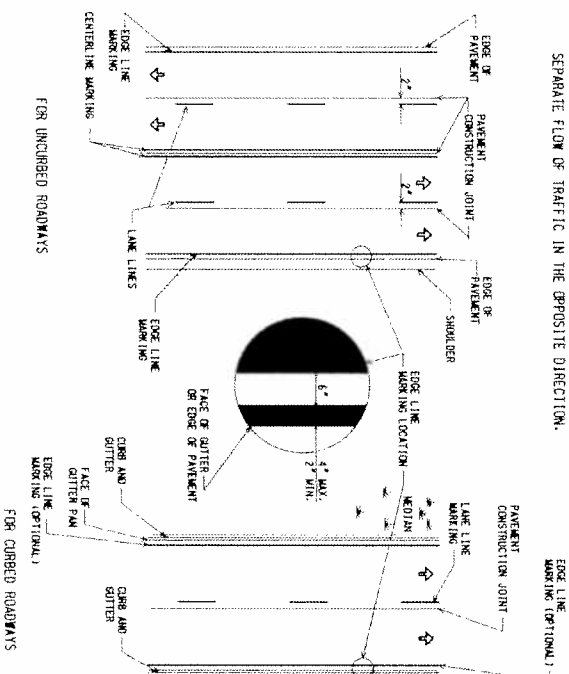


## LINE PATTERNS



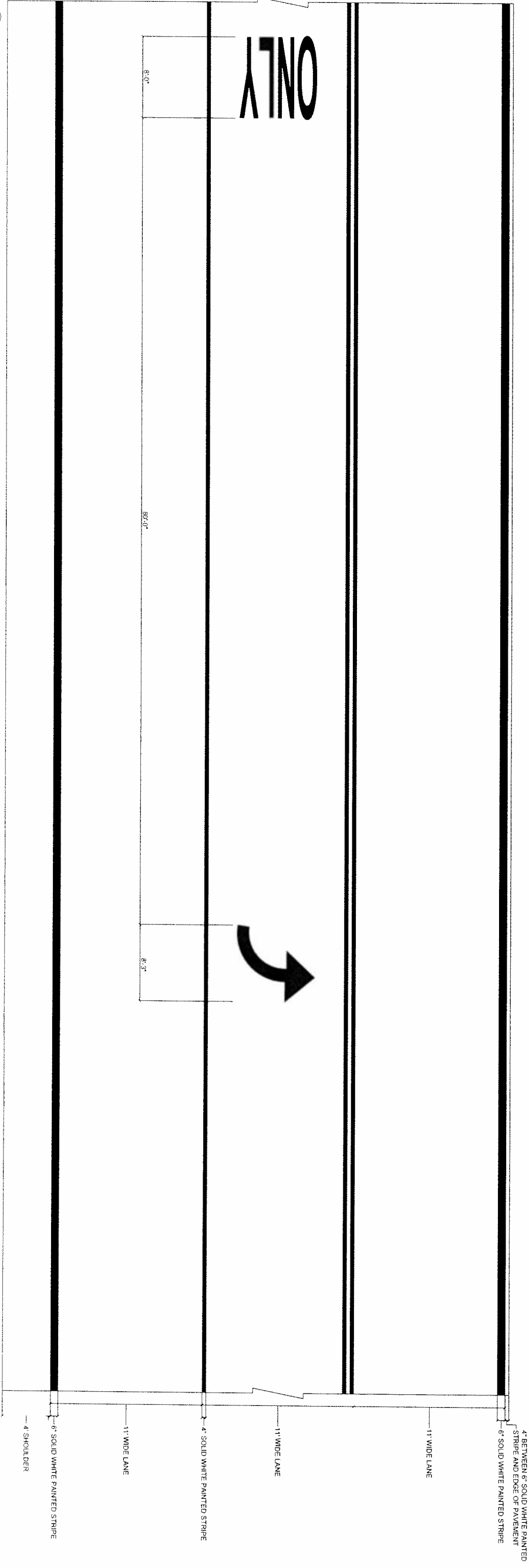
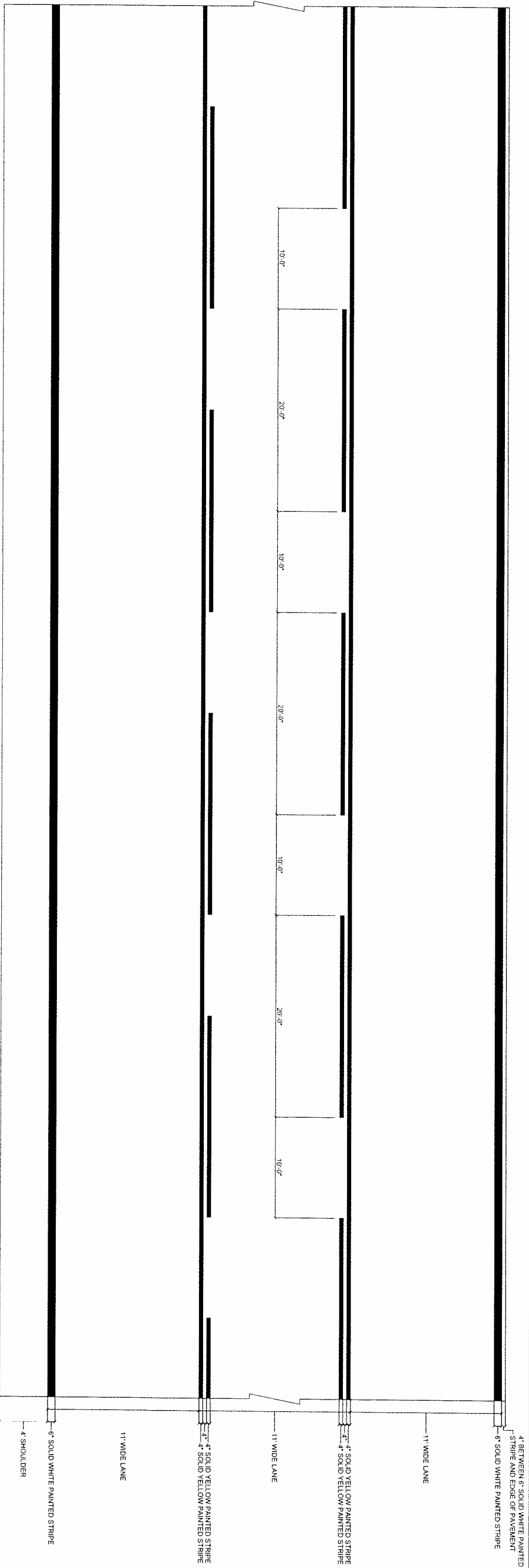
## TWO-WAY DRIVEWAYS ON HIGHWAYS WITHOUT CURB

BASIC COLOR RULE: WHITE LINES SEPARATE FLOW OF TRAFFIC IN THE SAME DIRECTION, YELLOW LINES SEPARATE FLOW OF TRAFFIC IN THE OPPOSITE DIRECTION



## PLACEMENT OF LINES

1. On all divided highways, lane lines shall be offset 2 inches from pavement construction joints toward the median side.
2. On 2-lane, 2-way north - south roadways a broken yellow center line shall be offset 2 inches to the left of pavement construction joints when facing for travel. Double solid yellow or solid and broken yellow center line may straddle the construction joint.
3. On 2-lane, 2-way east - west roadways, a broken yellow center line shall be offset 2 inches to the right of pavement construction joints when facing eastward. Double solid yellow or solid and broken yellow center lines may straddle the construction joint.
4. When a center line construction joint does not correspond to the geometric center line of the roadway for roadway segments over  $\frac{1}{2}$  mile, place the center line in the location that will provide lanes of equal width unless directed otherwise by the Engineer.



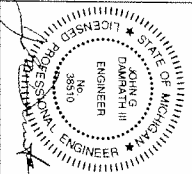
REV	DATE	DESCRIPTION
1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12-31-14	REVIEW COMMENTS

NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600



DAMRATH GROUP, LLC 2014 HAS BEARING CONTRACTORS OF DAMRATH GROUP, LLC THIS PROJECT WAS COMPLETED UNDER THE SUPERVISION OF DAMRATH GROUP, LLC NOT PUBLISHED

**DAMRATHGROUP**  
development support services  
Damrath Group, LLC  
143 Cady Centre, #161  
Northville, MI 48167  
Office: 248.880.2158

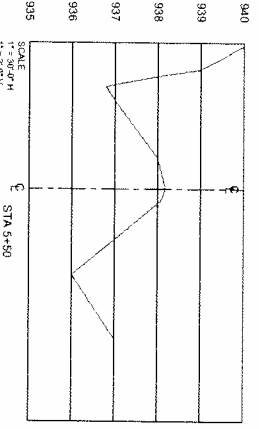
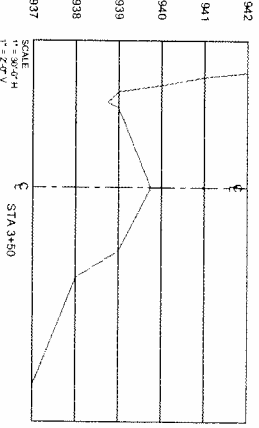
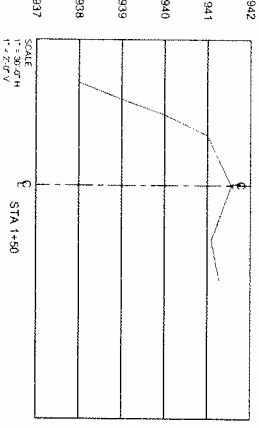
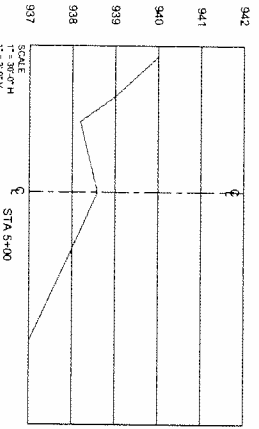
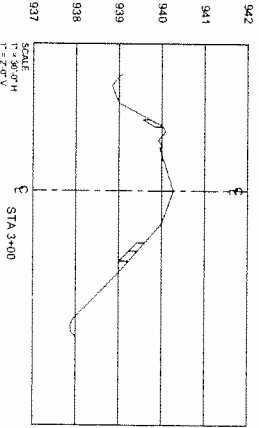
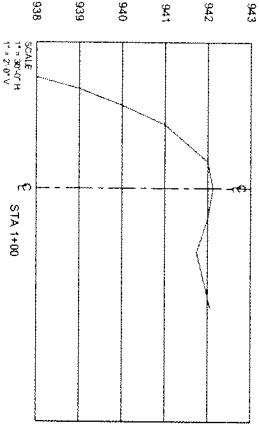
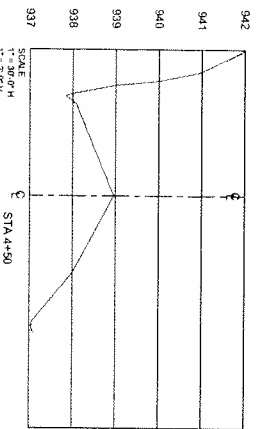
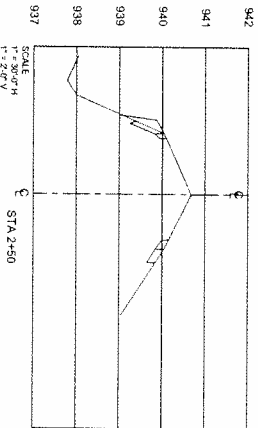
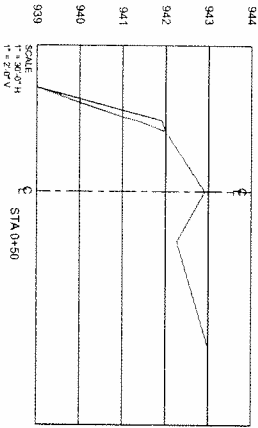
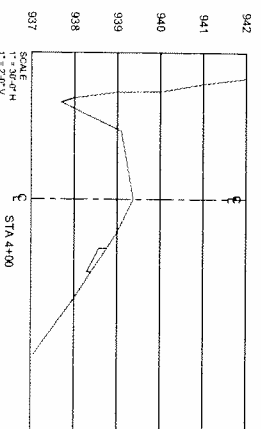
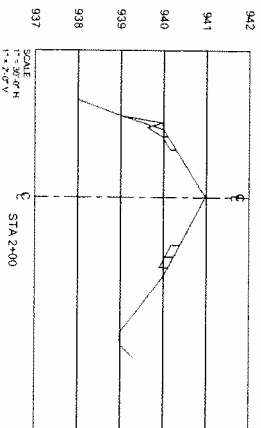
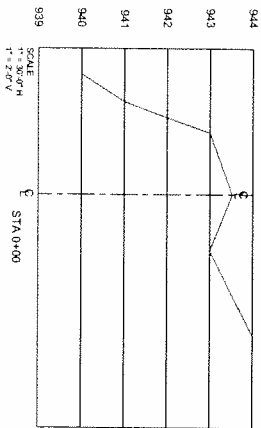


DATE: 12/31/14  
PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

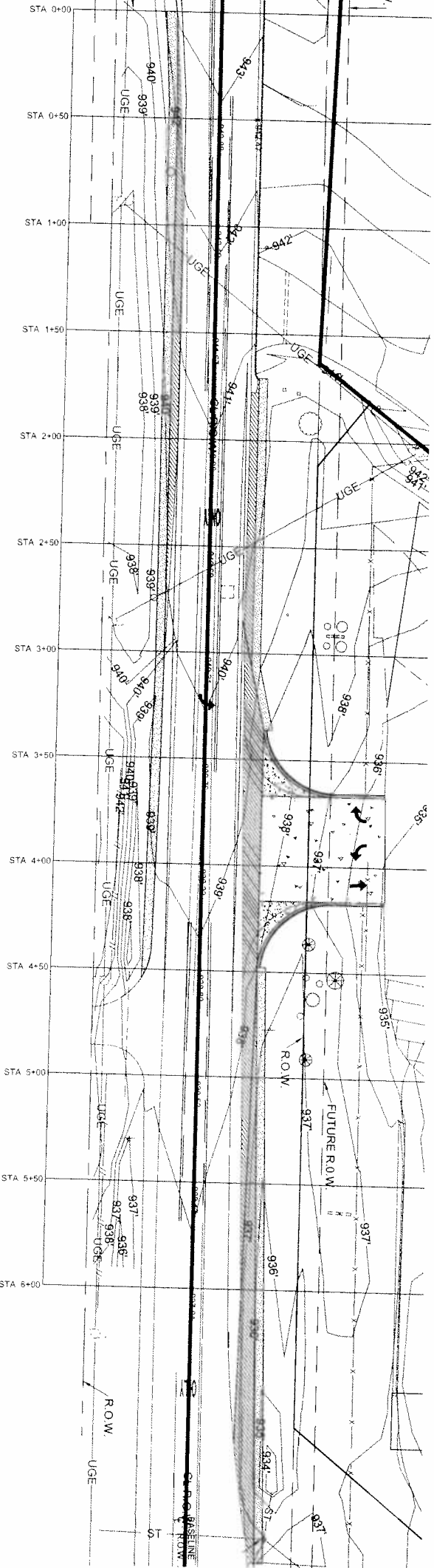
PAVEMENT MARKING PLAN

SHEET NO.

C-503



ROAD WIDENING PLAN  
SCALE 1" = 30' H



REV	DATE	DESCRIPTION
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2	12/02/14	REVIEW COMMENTS
3	12-31-14	REVIEW COMMENTS
4	04-07-15	WRC COMMENTS
5	77-77-15	WRC COMMENTS

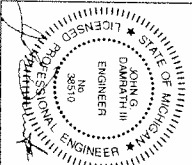
NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600

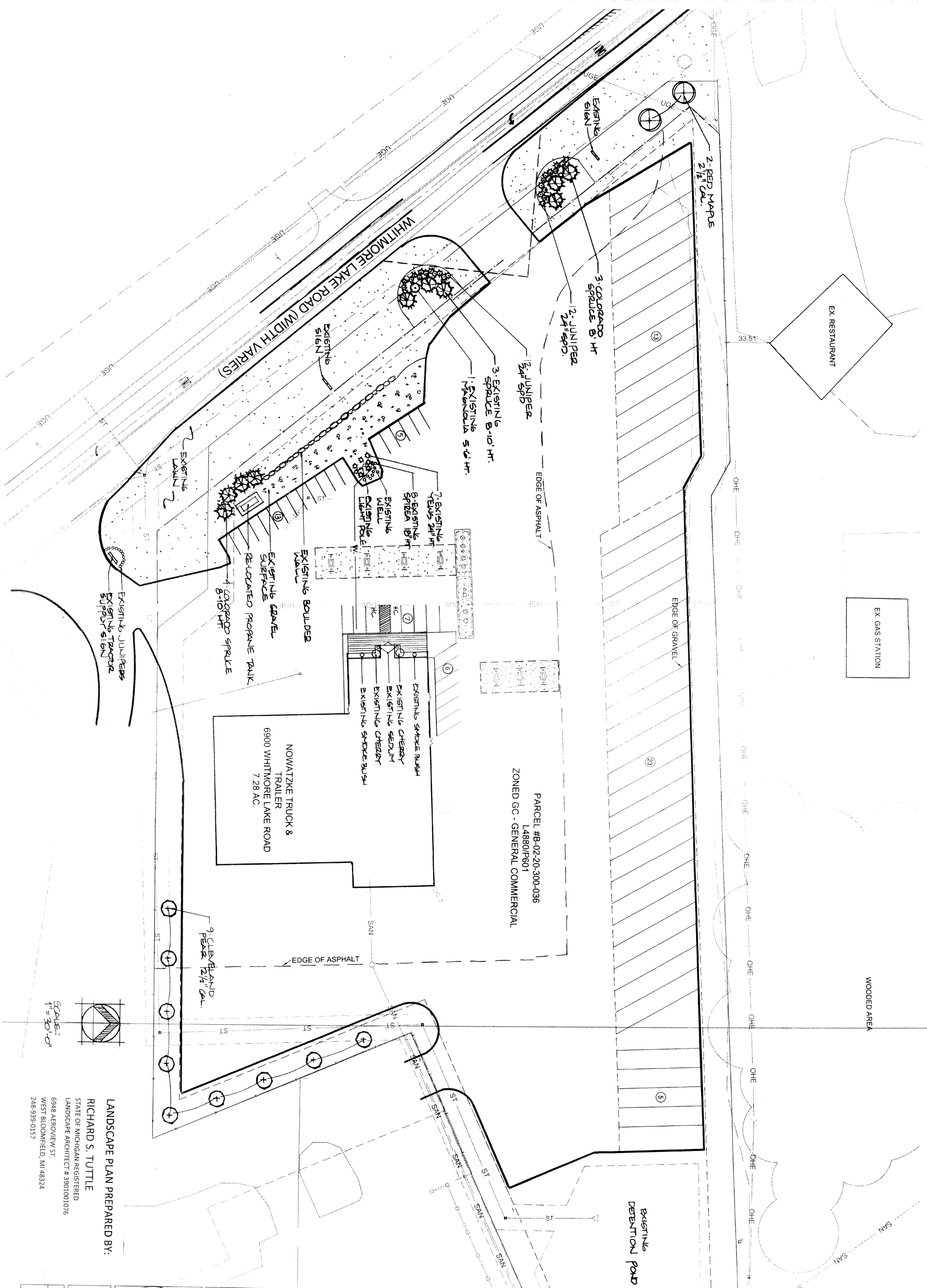
**NOWATZKE TRUCK & TRAILER**  
Quality & Care  
6900 Whitmore Lake Rd., Whitmore Lake, MI 48189

**DAMRATH GROUP**  
development support services  
Damrath Group, LLC  
143 Cady Centre, #151  
Northville, MI 48167  
Office: 248.880.2158

**MISS DIG**  
BEFORE YOU DIG  
CALL  
1-800-487-7171  
www.missdig.org

DATE: 12/31/14  
PROJECT NO.: 080000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD  
PAYMENT GRADING  
AND CROSS SECTIONS  
SHEET NO.  
**C-504**



[illegible]

NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600



NOVAZKE TRUCK & TRAILER

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**DAMRATH**GROUP  
★ development support services

**Damrath Group, LLC**  
143 Cady Centre, #151  
Northville, MI 48167  
Office: 248.880.2158

LANDSCAPE PLAN PREPARED BY:

RICHARD S. TUTTLE

STATE OF MICHIGAN REGISTERED

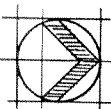
LANDSCAPE ARCHITECT # 3901001076

6948 AERVIEW ST

WEST BLOOMFIELD, MI 48324

248-939-0157

SCALE:  
1"=30'-0"



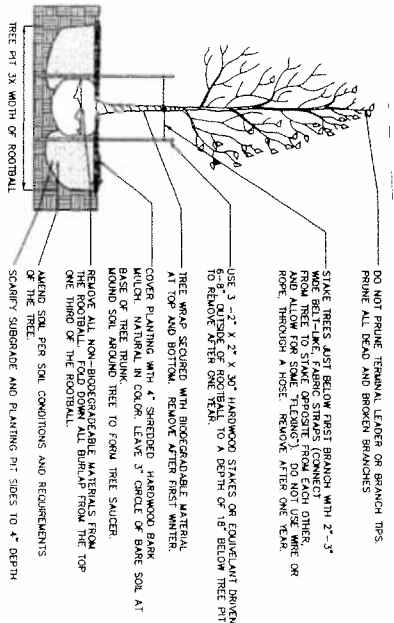
SHEET NO  
L-100

1. ALL TREES AND SHRUBS SHALL BE STAKED IN THE FIELD AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
2. ALL PLANT MATERIAL SHALL CONFORM TO THE SIZING AND GRADING STANDARDS OF THE LATEST EDITION OF THE "AMERICAN STANDARDS FOR NURSERY STOCK."
3. ALL TREES AND SHRUBS SHALL BE INSTALLED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS.
4. ALL PLANTING SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF NORTHFIELD TOWNSHIP.
5. ANY SUBSTITUTIONS OF PLANT MATERIAL OR ALTERATION OF SITES OR LOCATIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. ALL TREES AND SHRUBS TO BE STAKED, GUVED AND WRAPPED PER DETAILS.
7. ALL TREES IN LAWN AREAS SHALL BE MULCHED WITH A 4" WIDE RING OF 4" DEPTH SHREDED BARK MULCH.
8. PLANT BEDS SHALL BE MULCHED WITH 4" DEPTH SHREDED BARK MULCH WITH A PRE-EMERGENT HERBICIDE APPLICATION.
9. ALL TREE PITS SHALL BE DUG 3 TIMES LARGER THAN ROOT BALL. ALL SHRUB PITS SHALL BE DUG 1 FT LARGER THAN ROOTBALL. PLANTING SOIL BACKFILL SHALL CONSIST OF 2 PARTS TOPSOIL AND 1 PART COMPOST.
10. CUT BACK BALL AND DANGLE FROM TOP 1/3 OF ROOT BALL AND REMOVE. REMOVE ALL TWINE FROM ROOT BALL PRIOR TO PLANTING.
11. ALL TREES AND SHRUBS SHALL BE FERTILIZED AT THE TIME OF PLANTING WITH AGRIUM GROW FLOW RELEASE FERTILIZER DASH, APPLIED AT MANUFACTURERS DIRECTIONS.
12. LANDSCAPE CONTRACTOR SHALL OBTAIN "MISS DIRT" PRIOR TO PLANTING TO LOCATE AND IDENTIFY ALL UTILITIES.
13. NO TREES, EVERGREENS OR SHRUBS SHALL BE INSTALLED ON ANY EXISTING OR PROPOSED UTILITY LINES AS SHOWN ON PLANS. SEE ENGINEERING PLANS FOR EXACT UTILITY LOCATIONS.
14. PLANT TREES AND SHRUBS DETERMINED NO CLOSER THAN THE FOLLOWING DISTANCES FROM SIDEWALKS, CURBS AND PARKING STALLS:  
SHADE TREE: 5 FEET  
ORNAMENTAL TREE: 10 FEET  
EVERGREEN TREE: 10 FEET  
SHRUBS: 2 FEET

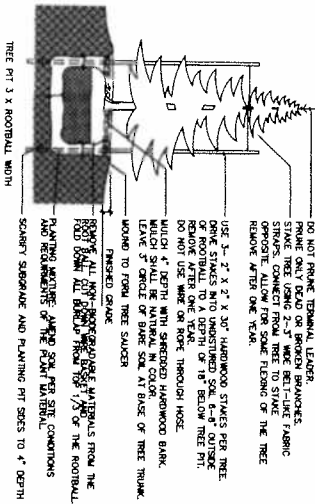
COMMON NAME	SCIENTIFIC NAME	QTY	SIZE	COMMENTS	LOCATION
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PROPOSED PLANTS					
Cherry tree	Cornus spp.	7-8' Ht.	tree form	In planters both with trailing entry	
Shade tree	Prunella spp.	3' Ht.	shrub form	In planters both with trailing entry	
Scrub	Sorbus spp.	15-20' Ht.	perennial	In planters both with trailing entry	
Covered Space	Prunus penns.	3' Ht.	evergreen tree	Right side entry off Whitmore Lake rd.	
Reigning	Myrica spp.	5-6' Ht.	ornamental	Right side entry off Whitmore Lake rd.	
Floral View	Prunella spp.	7' Ht.	evergreen shrub	Trailing rd. island	
Spirea	Prunella "Hickson"	15-20' Ht.	shrub form	Trailing rd. island	
PROPOSED PLANTS					
Colorado Spruce	Picea mariana	6	2-10' Ht.	B & B	Along Whitmore Lake rd entry and to street, pignons (only)
Red Maple	Acer rubrum	2	2-5' CAL.	B & B	Along north end Whitmore Lake rd.
Cleveland Pear	Prunus ciliolata "Cleveland select"	2-5' CAL.	B & B		Between Nonsuch property and Jackson Supply property
Japanese Maple	Japanese sashimae "Aureobaculata"	24	24-30' Ht.	Container	Both sides of Entrance on Whitmore Lake rd.

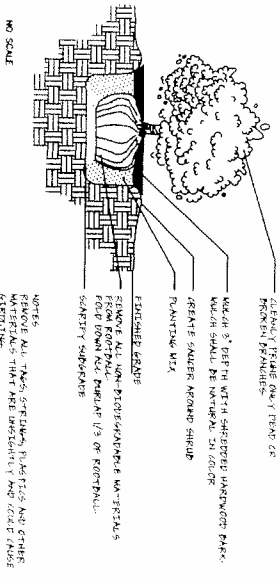
## NO SCALE



## NO SCALE



11



STATE OF MICHIGAN REGISTERED  
LANDSCAPE ARCHITECT # 3901001076

WEST BLOOMFIELD, MI 48324  
248-939-0157

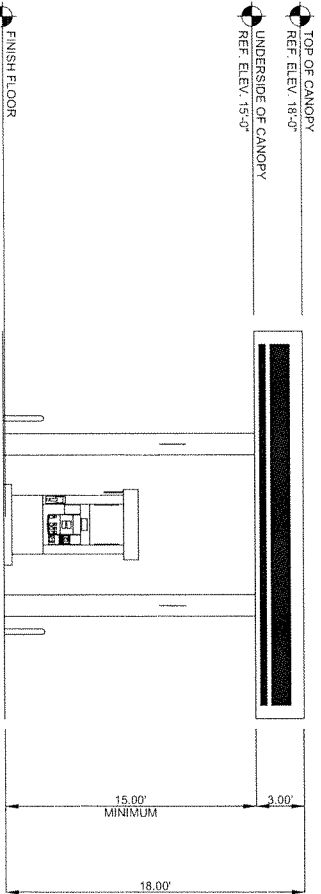
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**AMT** **NOWAIZKE TRUCK & TRAILER**  
Quality & Cost

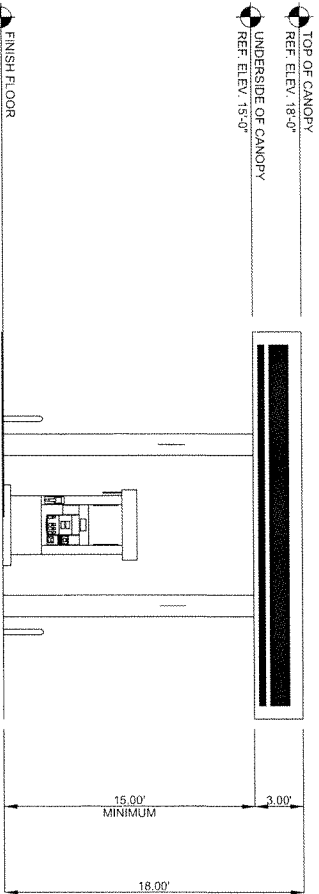
DAUGHTER, GORDON, E.C. NOT RECORDED  
THE MOTHER, MARGARET, IS

**Damrath Group, LLC**  
143 Cady Centre, #151  
Northville, MI 48167  
Office: 248.880.2158

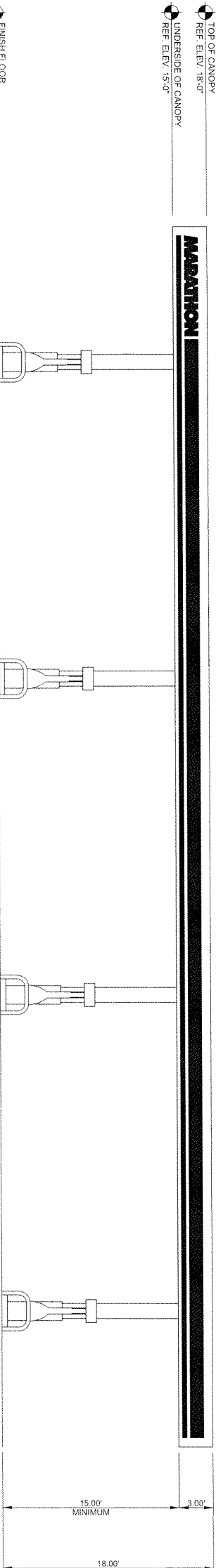
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L-101



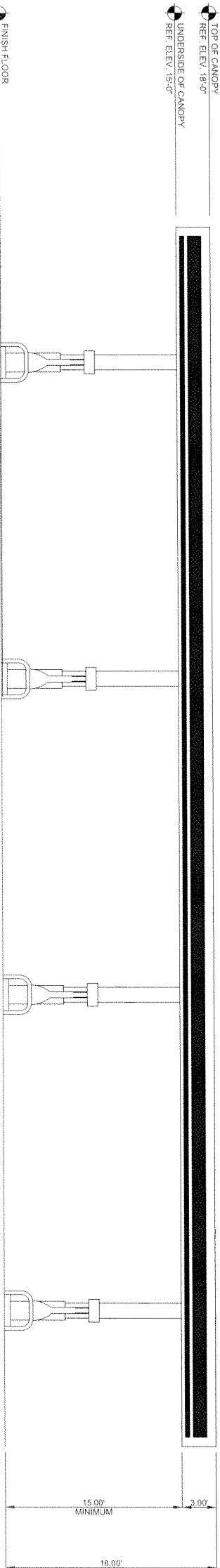
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NORTH ELEVATION  
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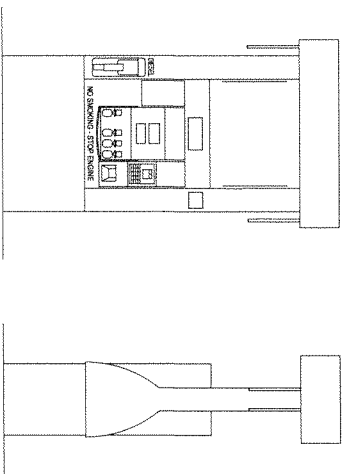
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SOUTH ELEVATION  
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C  
EAST ELEVATION  
SCALE: 3/16" = 1'-0"



D  
WEST ELEVATION  
SCALE: 3/16" = 1'-0"



SIDE

F  
DISPENSER ELEVATIONS  
SCALE: 1" = 2'-0"

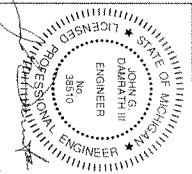
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1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12/31/14	REVIEW COMMENTS
4	03/10/15	REVIEW COMMENTS

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6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600



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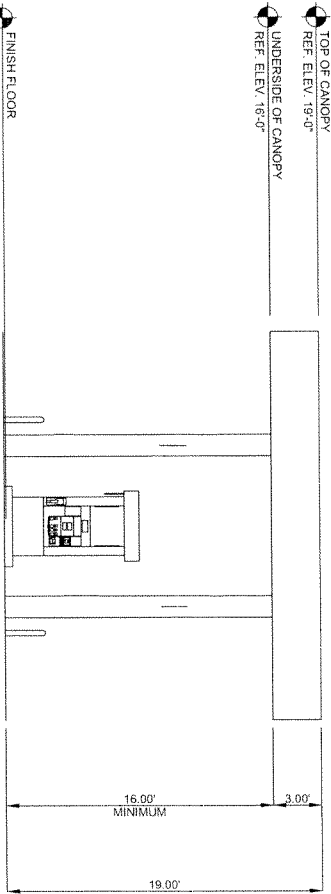
**DAMRATHGROUP**  
development support services  
Damrath Group, LLC  
143 Cady Centre, #151  
Northville, MI 48167  
Office: 248.880.2158



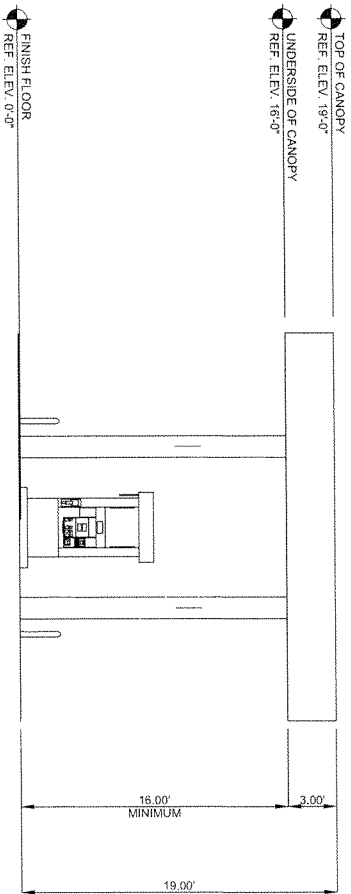
DATE: 12/31/14  
PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

GAS CANOPY  
ELEVATIONS  
SHEET NO.  
A-201

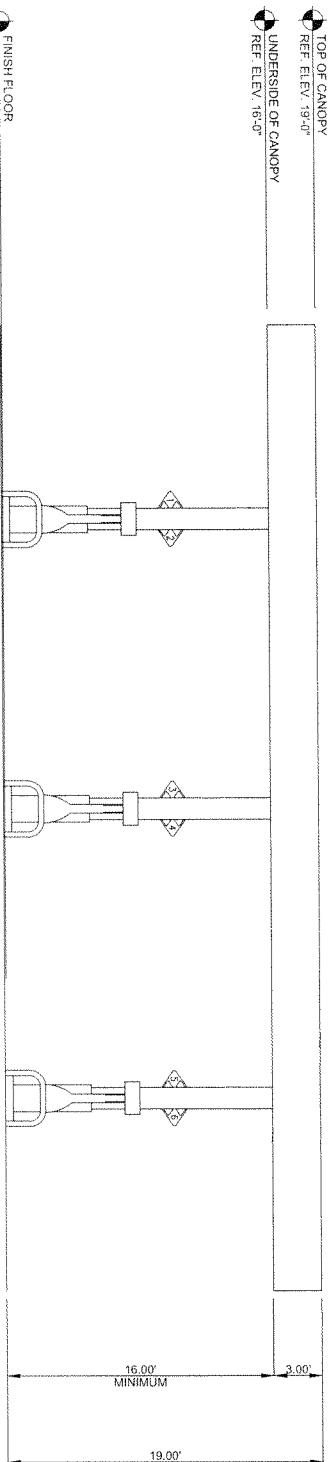




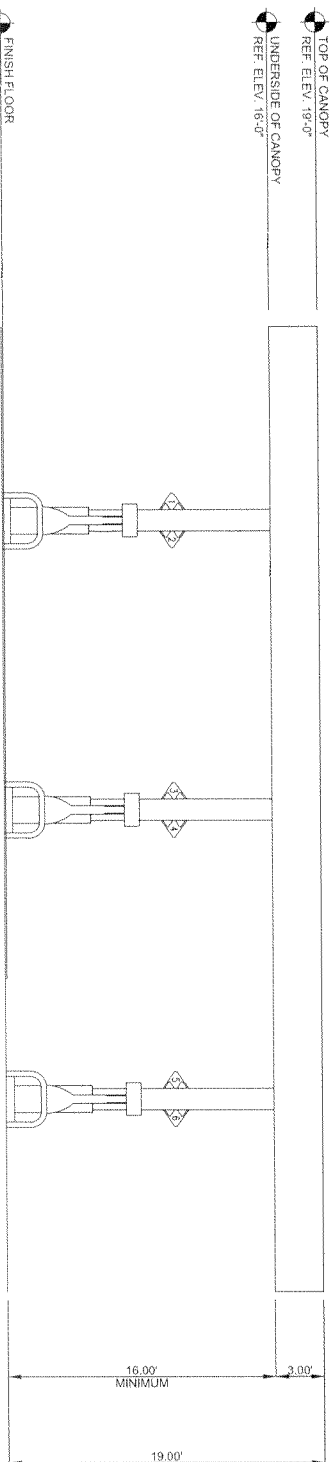
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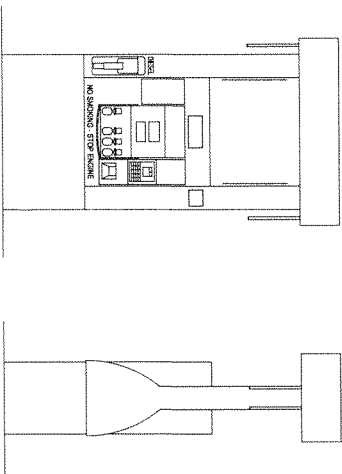
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C  
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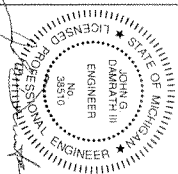


D  
WEST ELEVATION  
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F  
DISPENSER ELEVATIONS  
SCALE: 1" = 2'-0"

REV	DATE	DESCRIPTION
1	10/31/14	REVIEW COMMENTS
2	12/02/14	REVIEW COMMENTS
3	12-31-14	REVIEW COMMENTS



DATE: 12/31/14  
PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD



DAMRATH GROUP, LLC  
143 Cedar Centre, 8751  
Northville, MI 48167  
Office: 248.840.2158

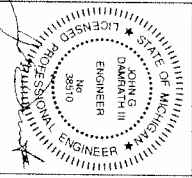
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development support services  
Damrath Group, LLC  
143 Cedar Centre, 8751  
Northville, MI 48167  
Office: 248.840.2158

**NTT**  
NOWATZKE TRUCK & TRAILER  
Quality & Care  
6900 Whitmore Lake Rd., Whitmore Lake, MI 48189

NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600

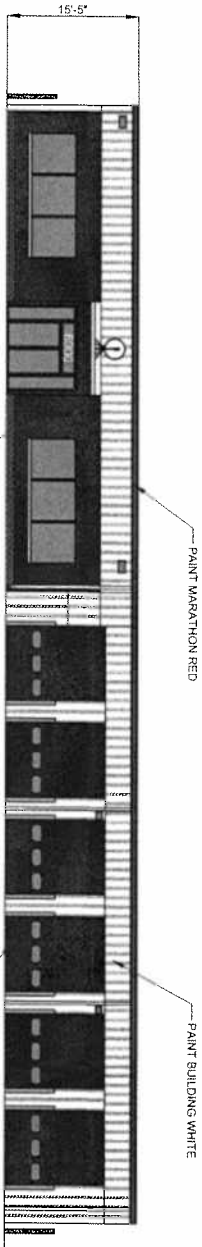
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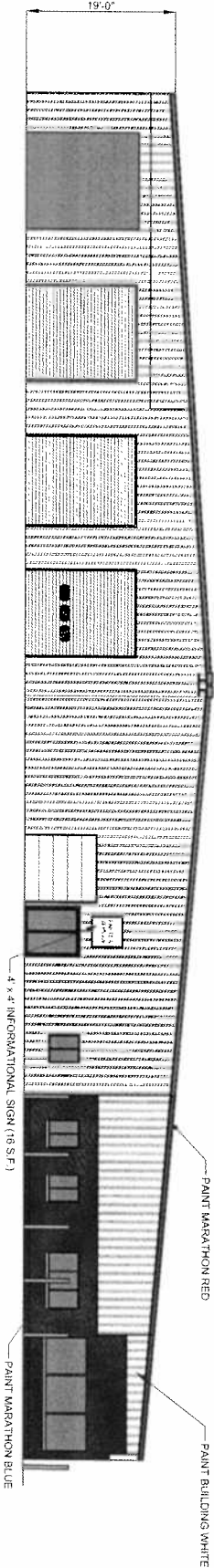
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PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

BUILDING ELEVATIONS

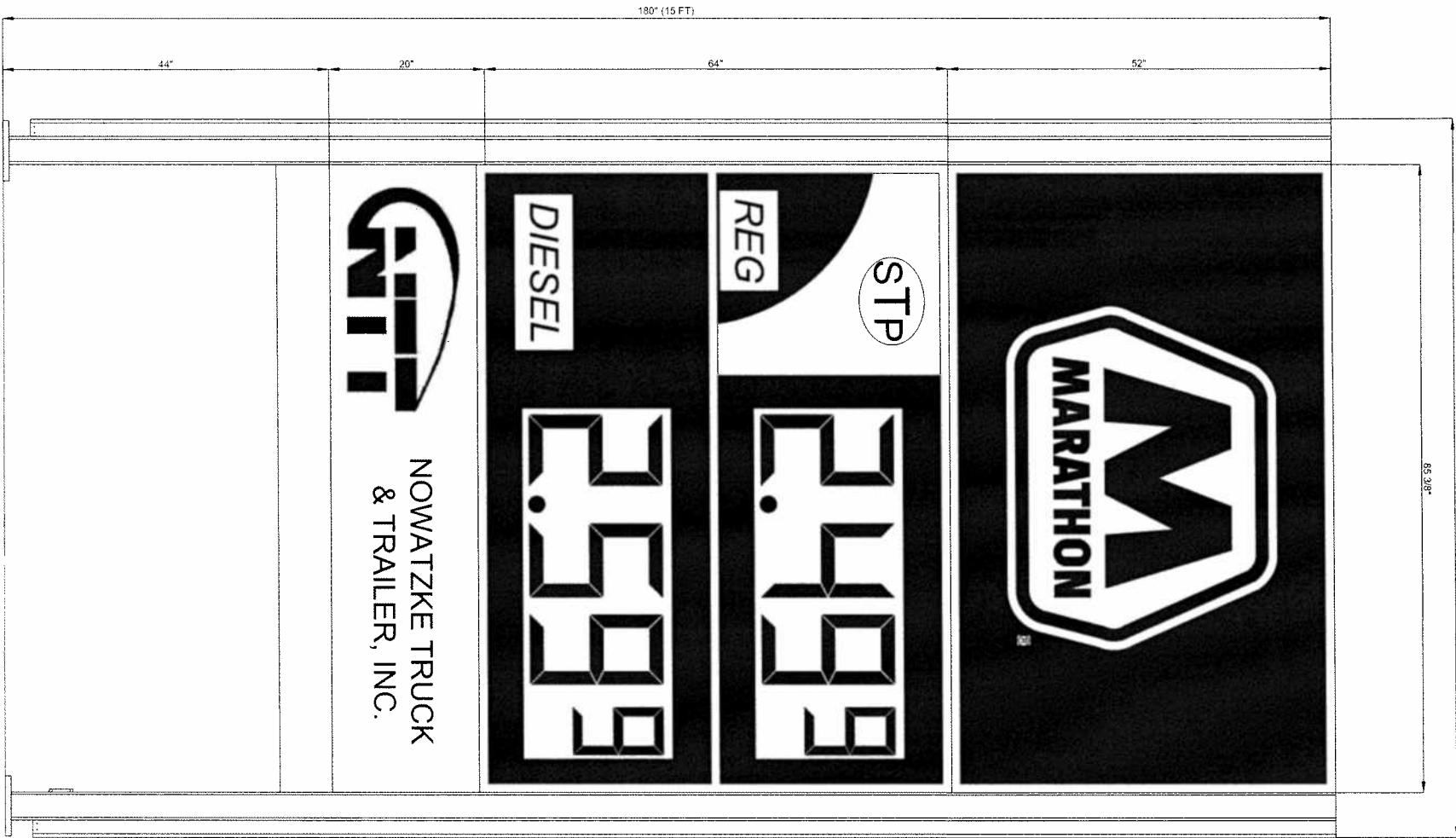
SHEET NO  
A-203



WEST ELEVATION  
SCALE: 1" = 10'-0"



NORTH ELEVATION  
SCALE: 1" = 10'-0"



ID/PRICE SIGN (80 S.F.)  
NOT TO SCALE

AG-100

SIGN DETAILS

SHEET NO.

DATE: 12/31/14

PROJECT NO.: 000000

DESIGNED BY: JD

DRAWN BY: BH

CHECKED BY: JD



REV	DATE	DESCRIPTION
1	12/31/14	REVIEW COMMENTS

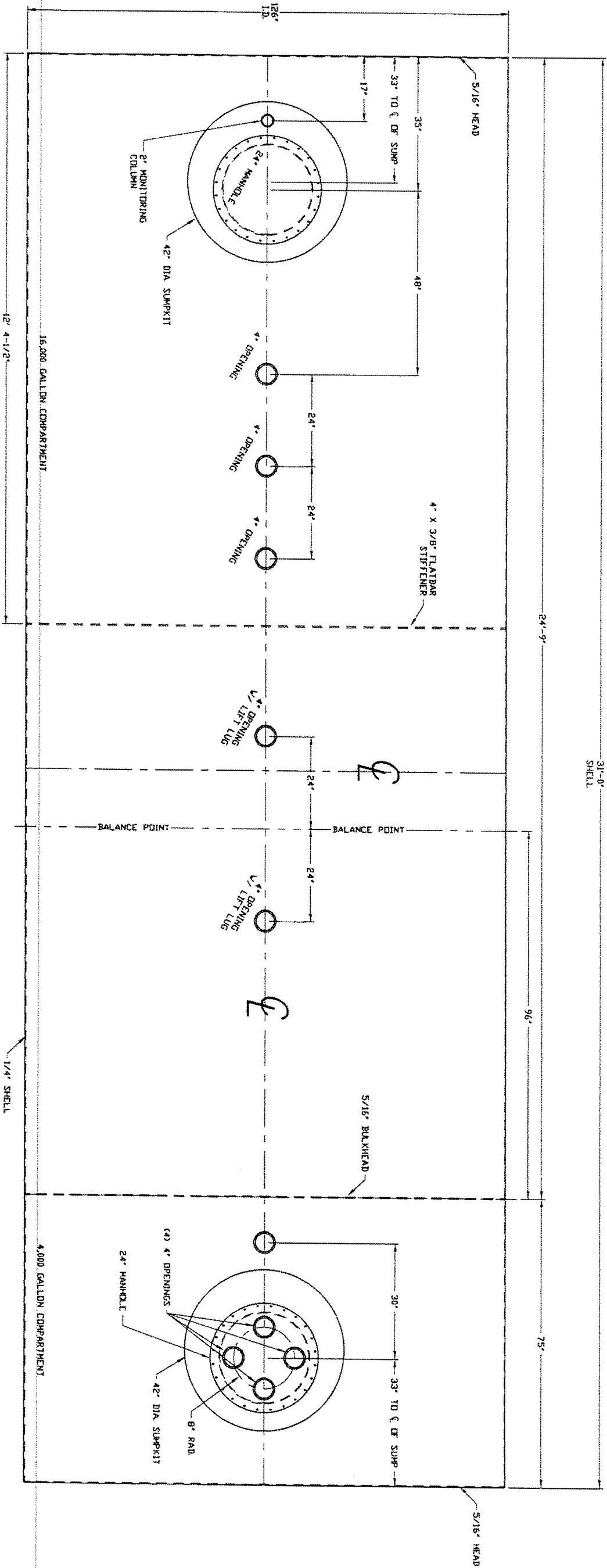
NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600

**NOWATZKE TRUCK & TRAILER**  
6900 Whitmore Lake Rd., Whitmore Lake, MI 48189

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NOTE: WEAR PLATES INSTALLED UNDER ALL OPENINGS

**PLAN VIEW**

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development support services

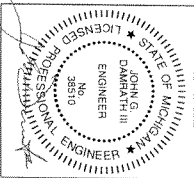
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Office: 248.880.2158

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Quality to Last  
6900 Whitmore Lake Rd., Whitmore Lake, MI 48189

NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600

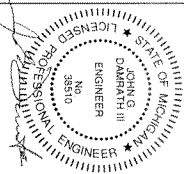
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DATE: 12/31/14  
PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

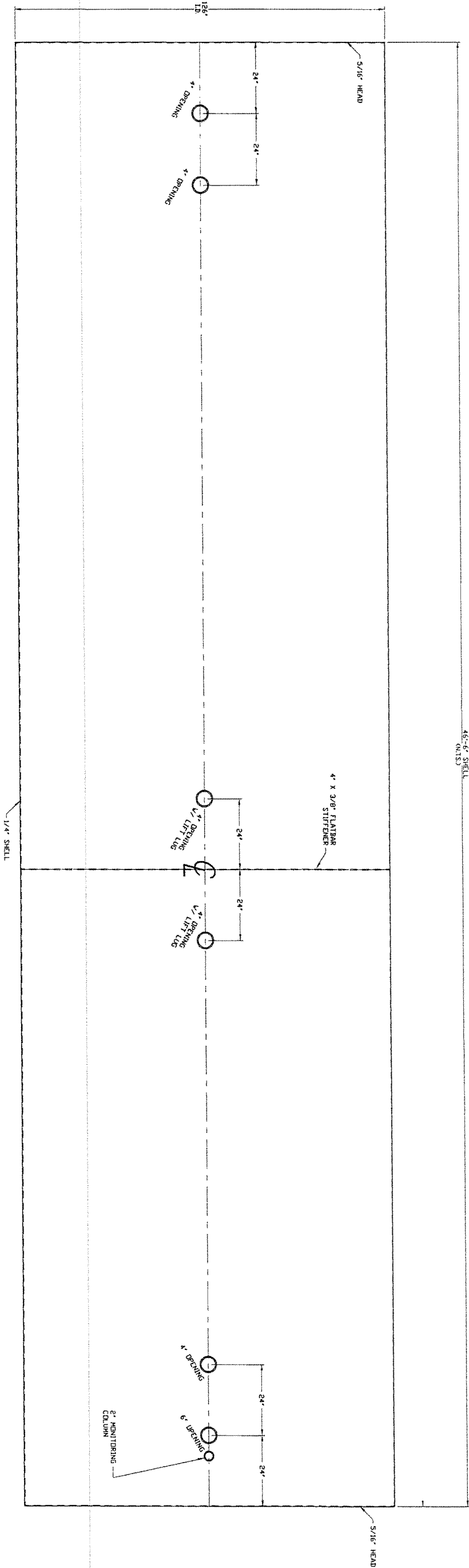
20,000 GALLON  
TANK PLAN  
SHEET NO.  
**T-300**

REV	DATE	DESCRIPTION



DATE: 1/23/14  
PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

30,000 GALLON  
TANK PLAN  
SHEET NO.  
T-301



NOTE: WEAR PLATES INSTALLED UNDER ALL DECKINGS  
*PLAN VIEW*

[illegible]

NOWATZKE TRUCK & TRAILER, INC.  
6900 WHITMORE LAKE RD.  
WHITMORE LAKE, MI 48189  
(734) 995-9600



**NDWATZKE TRUCK & TRAILER**  
49501 Whittmore Lake Rd., Whittmore Lake, MI 48189

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THE WRITTEN PERMISSION OF  
DANABATH GROUP, LLC. NOT FOR RELEASED

**DAMRATHGROUP**  
★ development support services

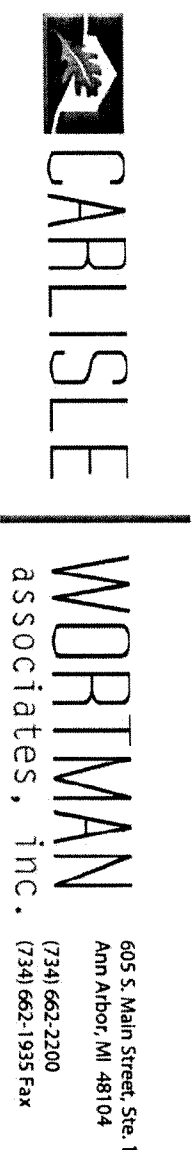
**Damrath Group, LLC**  
143 Cady Centre, #151  
Northville, MI 48167  
Office: 248.880.2158

DATE: 11/26/14  
PROJECT NO.: 000000  
DESIGNED BY: JD  
DRAWN BY: BH  
CHECKED BY: JD

A circular professional engineer seal for the State of Michigan. The outer ring contains the text "STATE OF MICHIGAN" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. Inside this ring, the words "LICENSED" and "ENGINEER" are positioned at the top and bottom respectively. The center of the seal contains the name "JOHN G. DAMIRATH III" and the license number "No. 38510". A signature is written across the left side of the seal.

FLOOR PLAN

A-3



MEMORANDUM

**TO:** Northfield Township Planning Commission

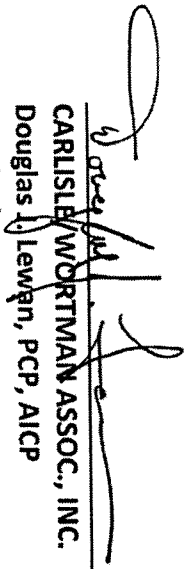
**FROM:** Douglas J. Lewan, Community Planner

**DATE:** April 8, 2015

**RE:** Citizen Survey Proposals

Please find attached the citizen survey proposal the Township received. We sent this request out to seven firms and received this proposal to date. As the deadline for proposal submission has passed we need to decide if we want to move forward with the single bid or to re-issue the request to additional firms.

Please read through the attached proposal and be prepared to discuss this topic at our meeting on the 15<sup>th</sup>. Should you have any questions about this proposal or its contents please don't hesitate to call.

  
\_\_\_\_\_  
CARLISLE | WORTMAN ASSOC., INC.  
Douglas J. Lewan, PCP, AICP  
Principal

April 2, 2015

Marlene Chockley  
Chair  
Planning Commission  
Northfield Township  
8350 Main Street  
Whitmore Lake, MI 48189

Dear Ms. Chockley:

Communities use many forms of research to decide what they should do and how they should grow. In 2010-2012, Northfield Township used planning fairs, a mailed survey and public hearings that resulted in the master plan approved in July of 2012.

Even the most prescient master plan, though, may not anticipate all the possibilities that development proposals may bring to the table. The plan itself acknowledges that uncertainty, saying “As this Master Plan is being written in 2010-2011, during one of the most difficult economic downturns in the history of the State and nation, many of the previous population and housing projections for this area are uncertain ... A change in the economic forecasts of this region (either up or down) will change the projections and some of the assumptions contained in these pages.”

In fact, residential development is booming throughout southeast Michigan. A developer has approached the township to build 800-1,200 units on 460 acres in the primarily agricultural southwest corner of the township and has proposed an amendment to the master plan.

The township’s most active and vocal citizens are divided on the merits of the proposal. Its leaders recognize that an objective, quantitative survey of a representative sample of all township residents is the best way to make a decision.

Cobalt Research has conducted research studies for more than 100 municipalities, school districts, institutions and corporations. Our work has enabled communities to make data-driven decisions with confidence.

- When the city of Royal Oak asked voters if they would support a modest tax increase dedicated to maintain and reconstruct local roads, 57 percent of the respondents said “Yes.” A November, 2014 vote for up to 2.5 mils for streets was supported by 54 percent of the voters.
- The city of Walla Walla, WA had been unable to pass a package of funding for a municipal pool, although this was a major concern for residents. A 2014 survey identified the most desired pool features and the voters’ preferred funding mechanism, and a February, 2015 ballot initiative passed 64%-36%.
- Kalamazoo Township’s survey showed that residents’ top priority was road repair. That gave the township the confidence to request a \$10 million road improvement bond in February 2015, which was approved 935-614.

In this endeavor, Cobalt is partnering with Sharlan Douglas of Douglas Communications Group, who combines 30+ years of experience as a public relations consultant with nine years as a planning commissioner and her most recent position as a Royal Oak city commissioner.

Ms. Douglas's ability to generate consensus and manage projects in the public arena combined with our deep experience in municipal research make us the ideal team to meet Northfield Township's current challenge.

Sincerely,

A handwritten signature in black ink, reading "William S. Amour". The signature is written in a cursive, flowing style.

William SaintAmour  
Executive Director





NORTHFIELD TOWNSHIP, MI

PROPOSAL FOR RESEARCH

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April 2, 2015

Submitted by:

William SaintAmour  
Executive Director  
1134 Municipal Way  
Lansing, MI 48917

T: (877) 888-0209  
F: (517) 703-9704

E-mail: [wsaintamour@cobaltcommunityresearch.org](mailto:wsaintamour@cobaltcommunityresearch.org)

*Nondisclosure Statement: All materials contained in this agreement are the confidential and proprietary property of Cobalt Community Research. The information contained herein is provided by Cobalt Community Research for evaluation by the Partner. Dissemination to other parties is prohibited.*

COBALT EXPERIENCE AND BACKGROUND

Cobalt Community Research (Cobalt) is a national 501c3 nonprofit organization with a mission to provide research and educational tools that help schools, local governments and other nonprofit organizations across the United States thrive as changes emerge in the economic, demographic and social landscape. Cobalt is located at 1134 Municipal Way, Lansing, Michigan 48917; (877) 888-0209; F: (517) 703-9704; E-mail: [wsaintamour@cobaltcommunityresearch.org](mailto:wsaintamour@cobaltcommunityresearch.org).

Incorporated in 2007, Cobalt Community Research is a nonprofit research coalition created to give governmental organizations and other associations access to high-quality research at a more reasonable rate through pooling than what is available in the private sector. Cobalt project leads are current public sector practitioners who provide their expertise to improve engagement and alignment between governmental units and the people they serve. Cobalt is the only national nonprofit research coalition in the United States.

Cobalt has been very active in providing research services to local units of government. Projects include the City of Allentown (PA), Luna County (NM), City of Brookfield (WI), City of Copperas Cove (TX), City of Janesville (WI), City of Las Vegas (NV), City of Lakeland (FL), City of Oak Creek (WI), City of Rocky Mount (NC), City of Roseville (MN), City of Warren (MI), City of Wausau (WI) and Saint Clair County (MI). Cobalt provides proprietary sampling, questions and analysis with the ability to add custom questions that meet partnering organizations' specific needs. This provides them with clear, action-oriented insight on funding priorities, quality of life and the services that citizens value.

An important element of the program Cobalt offers are the annual benchmarks we produce. Each year, Cobalt conducts an annual random survey of residents across the United States. This information is used to create more than 80 benchmarks, each of which can be filtered by demographic factors such as age, educational level, gender, work location, household composition, income and more. In addition, these annual benchmarks are developed for individual states, Census regions, the United States overall and also for similarly sized communities across the region and country. This information, along with our unique insight into local government, offers important insight for budgeting and economic development. The coalition offers the only annual, scientifically-generated benchmarking study of citizen perception and engagement in the country. The resulting scientific index provides a more stable reference frame to compare against over time.

Cobalt is a unique coalition offering scientifically rigorous research, customization, actionable analysis and robust benchmarks unlike anything else available to local governments.

QUALIFICATIONS AND EXPERIENCE OF THE PROJECT TEAM

Cobalt provides research services that comply with generally accepted research principles. In addition, projects and services will be led by Cobalt staff certified by the Market Research Association's Professional Researcher Certification (PRC) program, which is endorsed by major national and international research organizations such as the AMA (American Marketing Association), the ARF (Advertising Research Foundation), CMOR (Council of Marketing and Opinion Research), IMRO (Interactive Marketing Research Organization), MRII (Marketing Research Institute International), the RIVA Training Institute and the Burke Institute.

The head of research will be William SaintAmour. He serves as research director at the Municipal Employees' Retirement System of Michigan (MERS) and as executive director of Cobalt Community Research. He also has

served the State of Michigan Department of Management and Budget, the Michigan Office of Retirement Services and ADP. He has worked in the research and communications fields for more than 25 years.

Mr. SaintAmour earned an executive certificate from the University of Michigan Ross Business School, a master's degree from Michigan State University and a bachelor's degree from the University of Michigan in Dearborn. He has Certificates of Achievement in Public Plan Policy in employee health and employee pensions and holds the professional research certificate from the Market Research Association.

The project will be coordinated by Sharlan Douglas, president of Douglas Communications Group, a public relations consultancy. She spent nine years on the Royal Oak Planning Commission until being elected to the city commission in 2013. She is the current president of the Michigan Association of Planning.

Ms. Douglas was the founding executive director of the Eight Mile Boulevard Association and the CEO of a chamber of commerce following 30 years in public relations, marketing and fund development. She has facilitated community visioning processes for two cities and managed opinion research projects for several state trade and professional associations. Ms. Douglas received a BA in journalism from Michigan State University and has completed the course work for a master's degree in urban planning at Wayne State University. She is accredited by the Public Relations Society of America.

Analysis, compilation and preparation of results will be conducted by research analyst Pete Charette. Mr. Charette holds the Professional Researcher Certificate from the Market Research Association, has earned a Market Research Certificate from the University of Georgia and holds a bachelor's degree in business administration from Western Michigan University. In addition to his work with communities such as the City of Wausau (WI), City of Las Vegas (NV), City of Lakeland (FL) and the City of Wayne (MI), Mr. Charette has also worked with the Grosse Pointe Chamber of Commerce and the five Grosse Pointe communities. He has over seven years of experience with local governments.

Sampling and logistics will be conducted by Billie Harris. Ms. Harris holds a bachelor's and master's degrees from Michigan State University and is experienced in data collection methodology and sample design. She has worked on projects that include the Michigan Office of Retirement Services, City of Lakeland (FL), City of Las Vegas (NV) and Luna County (NM). Ms. Harris has more than nine years of experience with local governments.

COBALT'S DELIVERABLES

The results of the project report will include the following:

- Executive summary
- Survey background
- Copy of survey instrument
- Profile of Northfield Township
- Profile of respondents
- General overview of the survey
- Content description and summaries of each survey topic
- Statistical analysis of survey results including graphs, raw data and any other information which could be beneficial to the report.
- Related appendices that include detailed cross-tabs of all demographic groups and all questions
- Raw data upon request (excludes respondent ID to preserve confidentiality)

COBALT PARTNERS

Below are some of the organizations with which Cobalt has worked in recent years:

<ul style="list-style-type: none"><li>▪ Aetna</li><li>▪ ALIVE (Charlotte MI)</li><li>▪ Avondale School District, MI</li><li>▪ Birch Run Area Schools, MI</li><li>▪ Bloomfield Hills Schools, MI</li><li>▪ Bridgeport-Spauiding Community Schools, MI</li><li>▪ Buena Vista School District, MI</li><li>▪ Carrollton Public Schools, MI</li><li>▪ Charlotte Aquatic Center, MI</li><li>▪ Charlotte Performing Arts Center, MI</li><li>▪ Charlotte Public Schools, MI</li><li>▪ Charlotte Area Networking for Development and Opportunity (CANDO)</li><li>▪ City of Allentown, PA</li><li>▪ City of Bloomfield Hills, MI</li><li>▪ City of Brookfield, WI</li><li>▪ City of Charlotte, MI</li><li>▪ City of Clare, MI</li><li>▪ City of Copperas Cove, TX</li><li>▪ City of Dearborn, MI</li><li>▪ City of Ferndale, MI</li><li>▪ City of Garden City, MI</li><li>▪ City of Grosse Pointe, MI</li><li>▪ City of Grosse Pointe Farms, MI</li><li>▪ City of Grosse Pointe Park, MI</li><li>▪ City of Grosse Pointe Shores, MI</li><li>▪ City of Grosse Pointe Woods, MI</li><li>▪ City of Janesville, WI</li><li>▪ City of Las Vegas, NV</li><li>▪ City of Lakeland, FL</li><li>▪ City of Oak Creek, WI</li><li>▪ City of Oak Park, MI</li><li>▪ City of Pleasant Ridge, MI</li><li>▪ City of Rocky Mount, NC</li><li>▪ City of Roseville, MN</li><li>▪ City of Royal Oak, MI</li><li>▪ City of Saline, MI</li><li>▪ City of Walla Walla, WA</li><li>▪ City of Warren, MI</li><li>▪ City of Wausau, WI</li><li>▪ City of Wayne, MI</li><li>▪ City of Williamston, MI</li><li>▪ City of Ypsilanti, MI</li><li>▪ Chesaning Union Schools, MI</li><li>▪ Comstock Charter Township, MI</li><li>▪ Cumberland County, PA</li></ul>	<ul style="list-style-type: none"><li>▪ Dewitt Charter Township, MI</li><li>▪ Edward Lowe Foundation, MI</li><li>▪ Employee Benefits Research Institute</li><li>▪ Farmington Public Schools, MI</li><li>▪ Florida Benchmark Consortium, FL</li><li>▪ Frankemuth School District, MI</li><li>▪ Freeland Community School District, MI</li><li>▪ Gabriel, Roeder, Smith &amp; Company (GRS)</li><li>▪ Gallagher Benefit Services</li><li>▪ General Electric (GE)</li><li>▪ Gerald R. Ford School of Public Policy, University of Michigan</li><li>▪ Government Finance Officers Association</li><li>▪ Grosse Pointe Chamber of Commerce, MI</li><li>▪ Hartland Township, MI</li><li>▪ Hayes Green Beach Memorial Hospital</li><li>▪ Hemlock Public School District, MI</li><li>▪ Ice Miller</li><li>▪ Illinois Municipal Retirement Fund (IMRF)</li><li>▪ ING</li><li>▪ International Economic Development Council</li><li>▪ International Foundation of Employee Benefit Plans</li><li>▪ Institutional Society of Risk Professionals</li><li>▪ Kalamazoo Charter Township, MI</li><li>▪ Kansas Government Finance Officers Association</li><li>▪ Luna County, NM</li><li>▪ Maple Valley Schools, MI</li><li>▪ Marquette Township, MI</li><li>▪ Merrill Community Schools, MI</li><li>▪ Michigan Association of School Administrators</li><li>▪ Michigan Association of Transit Systems</li><li>▪ Michigan Government Finance Officers Association</li><li>▪ Michigan State Medical Society</li><li>▪ Michigan Municipal League</li><li>▪ Michigan Office of Retirement Services</li><li>▪ Michigan State University Local Government Benchmarking Consortium</li><li>▪ Michigan Township Association</li><li>▪ Midland (MI) Public Schools, MI</li><li>▪ Milliman</li><li>▪ Minnesota State Retirement System, MN</li></ul>
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|---|--|
| <ul style="list-style-type: none"><li>▪ Mississippi Public Employees' Retirement System, MS</li><li>▪ Missouri State Employees' Retirement System, MO</li><li>▪ Missouri DOT and Patrol Employees' Retirement System, MO</li><li>▪ Municipal Employees' Retirement System (MERS) of Michigan</li><li>▪ National Association of State Retirement Administrators (NASRA)</li><li>▪ National Conference on Public Employee Retirement Systems (NCPERS)</li><li>▪ National Council on Teacher Retirement (NCTR)</li><li>▪ New York State Teachers' Retirement System (NYSTRS)</li><li>▪ Northstar Academy, MI</li><li>▪ Ohio Public Employees' Retirement System</li><li>▪ Ohio School Employees' Retirement System</li><li>▪ Oshtemo Charter Township, MI</li><li>▪ Pittsford Area Schools, MI</li></ul> | <ul style="list-style-type: none"><li>▪ Plante &amp; Moran</li><li>▪ Public Financial Management (PFM)</li><li>▪ Public Pension Financial Forum (P2F2)</li><li>▪ Saginaw Intermediate School District, MI</li><li>▪ Saginaw Township Community Schools, MI</li><li>▪ Salem Township, MI</li><li>▪ School District of the City of Saginaw, MI</li><li>▪ Southeast Michigan Council of Governments (SEMCOG)</li><li>▪ St. Clair County, MI</li><li>▪ Swan Valley School District, MI</li><li>▪ Tegrif Group</li><li>▪ Texas Charter Township, MI</li><li>▪ Tyrone Township, MI</li><li>▪ The International Foundation of Employee Benefits</li><li>▪ University of Michigan Center for Local, State and Urban Policy</li><li>▪ Wichita State University, KS</li><li>▪ Ypsilanti Charter Township, MI</li><li>▪ Yale Public Schools, MI</li></ul> |
|---|--|

REFERENCES

Southeast Michigan Council of Governments (Custom survey projects in 2008, 2010, 2011, 2012, 2013 and 2014)

Dave Boerger, SEMCOG Consultant  
1001 Woodward Avenue, Suite 1400  
Detroit, MI 48226

[boerger@semcog.org](mailto:boerger@semcog.org)  
(248) 875-7120

City of Royal Oak, Michigan (Project in 2013)  
Stewart Meek, Assistant to the City Manager  
211 South Williams Street, Royal Oak, MI 48067  
[stewartm@ci.royal-oak.mi.us](mailto:stewartm@ci.royal-oak.mi.us)  
(248) 246-3204

City of Warren, Michigan (Project in 2009, 2011 and 2013)  
Lark Samouelian, Communications Director  
5460 Arden Road, Warren MI 48092  
[lsamouelian@cityofwarren.org](mailto:lsamouelian@cityofwarren.org)  
(586) 258-2015

Charter Township of Texas (Project in 2013)  
Julie VanderWiere, Township Superintendent  
7110 West Q Avenue, Kalamazoo, MI 49009  
[julievw@texastownship.org](mailto:julievw@texastownship.org)  
(269) 375-1591

TOWNSHIP RESPONSIBILITIES

There are several areas where Northfield Township is responsible for actionable information.

1. Provide Cobalt with scanned copy of the signed and dated agreement
2. Identify a primary point of contact (project lead) on the township staff
3. Provide Cobalt with voter registration or utility billing records in Microsoft Excel or TXT format
4. Provide timely feedback on finalizing scope of services and preferred questions
5. Provide Cobalt with timely revisions of survey instrument and cover letters
6. Provide Cobalt with timely approvals of survey instrument and cover letters
6. Provide Cobalt with a date, time and location of meeting for final presentation of results

SURVEY METHODOLOGY

Cobalt recommends administering the questionnaire to a random sample of 1,500 citizens drawn from voter registration or utility billing records. Conducting a random sample of this size allows the township to gather representative and statistically valid data at a lower cost compared to a census. In addition to the random sample, Cobalt also recommends a multi-modal methodology approach by collecting surveys through two waves of a mailed survey along with a URL to complete the survey online. Each randomly selected resident will have a unique identification number to prevent multiple responses from the same resident and to avoid a reminder message to residents who already completed the survey. Deployment and data collection is generally completed within six weeks. Cobalt's response rate for a mail/online combination survey is generally between

25 and 35 percent. The combination of mail and online has proven very effective and provides a higher response rate. Township communication in newsletters and media can increase this response rate.

After the township approves the survey, Cobalt mails an initial copy of the survey with a postage paid envelope. After approximately 10 days, non-respondents receive a second reminder letter with a copy of the survey and postage paid envelope.

Data is coded by industry professionals utilizing current technology and robust quality control to ensure accuracy. Data scrubbing of final results ensures duplicate responses, multiple responses from the same individual and responses from invalid survey ID numbers are removed.

Cobalt proposes a five-step process for the development of the assessment.

**Step 1 – Kick-off Discussions**

Clarify the issues and make sure all relevant voices are heard in developing the objectives of the study. Refine the scope, timeline and key deliverables for the project. Confirm informational needs. The collection methodology will also be finalized during this step.

**Step 2 – Questionnaire Development**

Based on the input received during Step 1, Cobalt and the township will develop questions for the questionnaire which will be presented and discussed with the project lead to ensure that the questions included in the assessment are aligned with organizational needs.

**Step 3 – Assessment Deployment**

Cobalt publishes the assessment in the manner determined by the township (mailings, Eblast, Internet only, phone). The Cobalt team’s public relations consultant will publicize the launch of the survey. Cobalt collects and codes the responses.

**Step 4 – Modeling & Analysis**

Cobalt will analyze the data and develop modeling using Cobalt’s proprietary methodology, which quantifies the relationships between the various elements of the assessment.

**Step 5 – Reporting**

Findings will be communicated to the project lead and other key decision makers in a meeting, with the Township to determine whether that will be at the planning commission or board of directors. A summary report in PowerPoint, detailed cross tabs, and other supporting documents will be provided to the project lead.

FEE SCHEDULE

Count Core Package		Subtotal
1	Includes administration, meetings, correspondence, planning, publicity placement executive summary in MS PowerPoint, 2 sheets (4 pages of custom questions (which can include budget priority analysis, future projects, communication preference, etc..), demographic questions, detailed cross-tabs with thermal mapping, raw data, phone-based follow-up with sponsor on draft results, onsite presentation of final results	\$ 6,497
Additional Modules and Options (See reference for Examples)		
	Additional Pages: \$1,000 per page	\$ -
	Non-English Versions: \$650 per translation	\$ -
	Follow-up Citizen Work Groups/Focus Groups (Sponsor provides location and recruits participants): \$1,200	\$ -
Distribution		
1	Web link for completion online (included) \$Waived	\$ -
	Eblast distribution via email list provided by Sponsor (3 waves): \$100 per 1,000 recipients	\$ -
1	Mail distribution: Production and postage for an initial first class mailing to 1,500 residents of the assessment with cover letter, data entry, a second mailing to those who have not responded, and business reply postage. \$3,550	\$ 3,550
	Mail distribution: Production and postage for an initial non-profit rate mailing to 1,500 residents of the assessment with cover letter, data entry, a second mailing to those who have not responded, and business reply postage. \$2,800	\$ -
Total Quote: \$10047		

CONCLUSION

While our services to Northfield Township will focus on a specific issue, Cobalt's work with communities across the country gives us a unique understanding about the many, broad issues affecting local governments. As a Michigan based non-profit, we care about the success of Michigan communities. Our partners consistently give us very high marks in satisfaction.

“The information we received from working with Cobalt was excellent in better understanding our organization. I would highly recommend other municipalities to utilize Cobalt and the survey methods when making planning and budgeting decisions.”

Karen Lovejoy Roe, Township Manager  
Charter Township of Ypsilanti, MI

We welcome the opportunity to help Northfield Township find the right framework for future development decisions.



NORTHFIELD TOWNSHIP  
PLANNING COMMISSION  
Minutes of Regular Meeting  
April 1, 2015

1. CALL TO ORDER

The meeting was called to order by Chair Marlene Chockley at 7:05 p.m. at 8350 Main Street.

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL  
AND DETERMINATION OF QUORUM

Roll call:	
Janet Chick	Present
Marlene Chockley	Present
Brad Cousino	Present
Kenneth Dignan	Present
Sam Jaquinto	Absent with notice
Larry Roman	Present
Mark Stanalajczco	Present

Also present:  
Township Manager Howard Fink  
Planning Consultant Laura Kreps,  
Carlisle/Wortman Associates  
Township Engineer Jacob Rushlow  
Recording Secretary Lisa Lemble  
Members of the Community

4. APPROVAL OF AGENDA

Chockley asked that item 10A be moved to follow item 8A, and to remove Case JPC#150003 due to lack of a complete site plan.

► **Motion:** Dignan moved, Roman supported, that the agenda be adopted as amended.  
**Motion carried 6—0 on a voice vote.**

5. FIRST CALL TO THE PUBLIC

**Nowatzke Site Pan.** Dale Brewer, 11548 East Shore Drive, objected to this application being on the agenda due to lack of complete site plan and unpaid taxes, said a buffer strip should be required on this property, questioned the uses proposed for the property, expressed concern about traffic, and pointed out zoning ordinance violations.

**Master Plan.** David Gordon, 5558 Hellner Road, said the Biltmore proposal raised issues of the sewer plant capacity being exceeded or a private sewer plant being used, asked what such a development would cost the taxpayers for additional public services, and addressed the issue of loss of open space.

6. CORRESPONDENCE

Chockley listed the names of people who had written to the Commission about the request by Rohani Foulkes.

7. REPORTS

**7A. Board of Trustees**  
Chick reported that the March 24<sup>th</sup> workshop meeting the Board heard presentations on sewer capacity and from the Washtenaw County Road Commission.

**7B. ZBA**  
The ZBA met this past Monday and granted two variance requests.

**7C. Staff Report**  
Fink said the new Assessing and Building Assistant, Mary Bird, will be attending some Commission meetings in the future.

**7D. Planning Consultant**  
No report.

8. PUBLIC HEARINGS

**8A. Case JPC#150003: Rohani Foulkes, Owner.**  
Location: 9623 Earhart Road; Request for Conditional Use Permit to allow use of existing outbuilding for Agricultural Commercial/Tourism under Section 36-730. Parcel 02-01-200-022; Zoned AR—Agricultural.

► **Motion:** Dignan moved, Chick supported, that the public hearing in Case JPC#150003 be opened.  
**Motion carried 6—0 on a voice vote.**

Ken Cousino, Engineering Technologies, introduced the applicant, Rohani Foulkes, and her husband, Matthew Lenhoff. He said their current proposal is much scaled down from the original one. He noted the property is 8.2 acres and has a dirt floor arena and a potting barn.

Foulkes noted that after speaking with their immediate neighbors they submitted an amended plan which would reduce peak traffic to the site from about 80 to about 15 cars and reduce the events from one large and one small event each weekend to small events. She said they are beginning farmers, and they are committed to transparency and communication with neighbors. She said the preservation of farm land in the area is threatened and there is a need to introduce other agricultural uses to sustain that character of the area.

Planning consultant Laura Kreps agreed that the new proposal is significantly reduced from the original, but said two variances for an Agricultural Commercial Business from the Zoning Board of Appeals (ZBA) would be required: one for the minimum lot size of 10 acres, and another for the minimum setbacks of 200 feet from adjacent properties.

Dignan said he would not be participating in the questioning of the applicants or in the discussion of

the request because he is chair of the ZBA and this request may come before that board.

George Jackson, 9380 Earhart, said after meeting Rohani and Lenhoff he realized they have the good of the neighborhood at heart and seem to be very sensible.

Elvera Trapp, 9707 Earhart, said she and her husband have lived in their home for 46 years, plan to remain there, and think the proposal would diminish the quality of their lives. She cited concerns about traffic, security, alcohol consumption, noise, water consumption, lowered property values, and disturbance of their quiet enjoyment of their home.

David Barry, 9581 Earhart, said this section of the ordinance says proposed uses are supposed to be "complimentary and accessory to the primary agricultural land use," but that would not be the case here because the land is not farmed. He said the barn they are proposing to use is less than 30 feet from his property, which is in violation of building setbacks much less the 200 foot setback required for these uses. He objected to the noise and light pollution that would result.

Laurel Ratering, 9813 Earhart Road, said she is concerned about busloads of children or large groups of adults being unsupervised and straying onto neighboring properties. She said the property is so narrow that only a 54' x 80' ft. piece of the subject property could be used for the proposed purposes.

Theresa Barry, 9581 Earhart, read a letter from the owners of 9555 Earhart Road, Andre and Mary Plave, who objected to the proposal saying it would not contribute the community and would disturb the quiet, peaceful, rural setting.

David Perry, 9411 Earhart Road, said he lives on 10 acres on which he has planted 100 timber trees and a large vegetable garden. He said he would be happy to teach the applicants what he knows about these things, but their proposal would bring only negative effects to their quiet agricultural neighborhood. He listed many neighboring farms consisting of dozens or hundreds of acres. He noted that the five acre Cottonwood Farm in Webster Township—which had been ordered closed by the courts—created many negative effects on that neighborhood.

Allison Hollister, 9372 Earhart, said she has lived in her house for almost 20 years and is opposed to the proposal because the dirt road cannot handle the extra traffic, the proposed uses do not fit the zoning ordinance, and the parcel is smaller than the required 10 acres and cannot meet the 200 foot setback requirements. She said the entire neighborhood is opposed.

Andy Duvall, 9760 Earhart, said he has lived on his property for 30 years engaged in agriculture. He said he is concerned about this proposal setting a precedence, he asked if the serving of alcohol would be

allowed, and said he is also concerned about target shooting.

Lee Brithnee, 568 Fergus in White Lake, said he represents the house in his father's estate at 64603 West Eight Mile, and said he has concerns about the proposal and made reference to Long Farm in Congress Township;

David Johnson, 9381 Earhart Road, said this is a smokescreen for renting a hall to have parties and making money, rather than about the welfare of the neighborhood.

David Gordon, 5558 Hellner, said while the proposal seems very nice, it is opposed by all of the residents, does not conform to the ordinance, and does not comply with the Master Plan. He said as in the case of the Bltmore proposal, it is important to follow the Master Plan.

Kathy Nieman, 9355 Earhart, expressed concerns about traffic, outsiders coming into the neighborhood on their small road, and increased commercial activity.

David Trinoski, 9562 Earhart, opposed the proposal citing decreased property values, traffic, safety of children, and participants drinking whether there is a liquor license or not.

Judy Johnson, 9381 Earhart, read definitions of "event" describing them as large parties of various types.

Robert Stautz, 64355 West Eight Mile Road, said Earhart Road cannot handle additional traffic which would not be compatible with the horses, dogs, and children using the road.

Chockley noted the public has not had the opportunity to view the revised plans.

► **Motion:** Roman moved, Stanalajco supported, that the public hearing in Case JPC#150003 be closed. **Motion carried 6—0 on a voice vote.**

In answer to questions from Chockley, Foulkes said she expects her revised proposal to be ready for the April 15, 2015 meeting.

10. NEW BUSINESS

[Heard out of order].

10A. Case JPC#150003; Rohani Foulkes, Owner. Location: 9623 Earhart Road; Request for Conditional Use Permit to allow use of existing outbuilding for Agricultural Commercial/Tourism under Section 36-730. Parcel 02-01-200-022; Zoned AR—Agricultural.

► **Motion:** Chick moved, Roman supported, that the request in Case JPC#150003 be postponed to the April 15, 2015, Planning Commission meeting.

Motion carried 5—0—1 on a roll call vote,  
Dignan abstaining.

9. OLD BUSINESS

- 9A. Case #PC140003; Nowatzke Truck & Trailer, Location: 6900 Whitmore Lake Road; Request for Site Plan Approval for a convenience store and gasoline/diesel fueling station. Parcel 02-20-300-036; zoned GC—General Commercial.

Removed from the agenda.

9B/9C. Master Plan Update/Citizen Survey. Chockley noted there is nothing new on this, but the citizen survey request for proposals have been sent out with a submittal deadline of April 3<sup>rd</sup>

10. NEW BUSINESS (continued)

10B. Sewer Capacity Report.

Brian Rubel, Tetra Tech, said this was not a master plan, rather it was an inventory of the Township's current commitments for sewer capacity. He reviewed his written presentation, and said:

- They are also updating the sewer map which has not been done in 20 years.
- This is a very concise evaluation of commitments the Township has made regarding sewers, not a master plan.
- Northfield Township has two agreements with Green Oak Township: A 2001 agreement for 124 Residential Equivalent Units (REUs) on the north side of Whitmore Lake (about 20 of which have been added since then), and a 2004 agreement to provide 200,000 gallons/day or 769 REUs for an area to the west. The total of these is 873 additional REUs or just over 225,000 gallons/days. In answer to a question from Stanalajczo, Rubel said the latter agreement includes a map showing where this service could be provided.
- (In answer to a question from Dignan), per Township attorney Burns a 2002 agreement rescinded a prior commitment to Hamburg Township.
- The Township has commitments to four special assessment districts (SADs): Lake Point(4 units all built out), North Territorial (the biggest of these—about 1620 additional REUs, of which 20 are connected), Seven Mile Road (an estimated 169 REUs of 44,000 gallons/day), and Whitmore Lake Road (the district has been established at 76 REUs or 20,000 gallons/day). The total remaining commitment in excess of those that have already hooked up is 1,865 REUs and an additional 485,000 gallons/day.
- The total remaining commitment for capacity to Green Oak Township and the four SADs in

Northfield Township is 2,738 REUs and just over 700,000 gallons/day.

- About 60-70% of communities have storage capacity for times of very wet weather which allows the excess at those times to be treated later over a longer period of time.
- The current capacity of—and the State permit for—the WWTP plant is 1.3 million gallons/day (MGD), and if storage during wet times were available the capacity could be increased to 1.5 MGD. The State requires that when treatment reaches 85% of capacity—which would be 1.1 MGD for the WWTP today—additional capacity must be built or storage must be provided.
- The current 365 day average being treated is .7 MGD, but in the spring it is closer to .9 MGD, so an additional .2 MGD or 800 REUs could be handled without additional storage or .4 MGD or 1500 REUs with building additional storage.

In answer to a question from Stanalajczo, Rubel said there are commitments, but no specific proposals to use the allotted taps have been made for any of these areas.

Chockley said her concern is what the Township's liability would be if the remaining sewer capacity was allowed to be used by other developments and then a property owner in one of these areas requested service. She also asked how many other properties there are on sewer lines—but not in the areas listed—that could request service. In answer to a question from Stanalajczo, Rubel said sewer taps have not been allotted in advance to vacant parcels.

Rubel said the policy in most communities is that as demand occurs the sewer plant is expanded. In answer to a question from Cousino, Rubel said the required sewer capacity for a sewer district is based on the probable uses and the acreage.

In answer to a question from Dignan, Rubel said the averages quoted are over the last few years. In answer to a question from Stanalajczo, Rubel said a sewer system is supposed to be closed, but as systems age cracks develop that allow ground water to come in. In a study his firm did for the Township about 15 years ago infiltration was found to be fairly uniform throughout the Township.

Stanalajczo asked whether enforcement of the ordinance prohibiting the directing of stormwater (usually through sump pumps) into the sanitary sewer system should be done. Rubel said 15 years ago the study got to the survey level, but there was hesitance to spend the time and effort on enforcement. Fink said this is a common problem, usually in older subdivisions where directing stormwater in sanitary systems was common.

In answer to a question from Chockley, Rubel said metering wastewater is extremely costly, so is rarely done.

Rubel concluded his review of the report:

- A 2002 Department of Environmental Quality (DEQ) policy requires sewer systems to handle a 3.9" storm in one day, which means Northfield Township's WWTWP would have to build 1.7 million gallons of storage for its current operations (and that size would be sufficient for many additional years).
- Storage could be above or below ground, could be made of steel or concrete, and would require upgrades to pumps, but that would be a manageable cost. The cost for a tank of the required size would be \$2.5-\$3 million dollars for a steel tank or an additional \$500,000 for a concrete tank.
- It has been challenging for the WWTWP plant to handle peak spring flows, so the storage tanks would be useful immediately and would extend the existing plant capacity for a number of years.
- With only 800-1500 REUs available before capacity must be increased, but having commitments for an additional 2,738 REUs, the Board needs to consider what its policy will be regarding proposals for additional growth in the Township.
- Next steps include investigating financing for the tank and considering increasing connection fees to cover this cost. The most popular source is a revolving fund loan program with the State of Michigan, but there are restrictions on access to those funds.

In answer to a question from Dignan, Rubel said REUs in a sewer district are figured on the future land use designation—not the current zoning—and the acreage. In answer to another question from Dignan, Fink said if the number of REUs originally estimated for a sewer district is unexpectedly exceeded by a large development, the tap fees charged (\$3,500 per REU) would be used for capacity expansion.

Stanalajczko asked whether a large development demanding 1000 REUs could be denied because the Township already has 2700 REUs committed to other areas. Fink said he really does not know, but in his opinion it comes down to a policy decision by the Board of Trustees about how they want to manage the capacity of the plant over the next 30-50 years.

Cousino asked whether in the scenario of a property owner in an SAD who was assessed based on future use of 30 REUs, that owner can be denied sewer service based on lack of capacity because other property owners used up the capacity first. Fink said this is an issue of how well the Township manages its capacity over time. While it is true that that property owner was assessed for 30 REUs, these are difficult questions and there are legal issues involved.

Dignan asked if he can pay for a tap and not use it immediately. Fink said he doesn't know, but he would generally say no because he does not see an REU as a commodity.

Fink said capacity probably has to be reserved for the Green Oak REUs because that is a contractual obligation, but for other potential demand the common practice is to build more capacity once a certain percentage (75%-85%) of the current capacity of the plant is expanded.

In answer to a question from Chockley, Rubel said in essentially every community he works with the commitments for sewer service exceeds the existing capacity. Dignan said the current sewer usage would have to be doubled before the plant capacity would be reached.

Dignan noted that Wastewater Treatment Plant Superintendent Hardesty has noted that a couple of times each year he has to make decisions about what treatment steps to forego when the plant capacity it exceeded, and when the frequency of those occurrences increases substantially the Board will have to make decisions about providing additional capacity or storage.

In answer to a question from Cousino, Fink said people in the Township not using the sewer system do not pay for it because WWTWP operations are required by law to cover expenses. Fink noted the Township recently increased the quarterly charge per REU to \$84 for the first time in 4-5 years. He said this is still lower than most sewer districts in the area, and part of the increase has been designated for building reserves for expansion.

Chockley questioned whether any of the reserve sewer funds could be used to address infiltration. Fink said an infiltration study could cost about \$300,000, but short of that letters could be sent to property owners asking them to disconnect sump pumps, etc., although it would not be very effective.

[Roman left at this point].

## 12. MINUTES

### March 18, 2015, Regular Meeting

Chockley made three minor corrections.

- **Motion:** Dignan moved, Stanalajczko supported, that the minutes of the March 18, 2015, regular meeting be approved as corrected, and to dispense with the reading. **Motion carried 5—0 on a voice vote.**

[Roman returned at this point].

## 12. POLICY REVIEW & DISCUSSION

**12A. Leapfrogging of Sewer Service.** Kreps referred to her memo of November 5<sup>th</sup> and said the Township's Master Plan requires that expansion of sewer service must be contiguous to current sewer service, and if there is any question about an application to extend sewer lines, the Township Board would have to decide whether the request constituted leapfrogging.

128. **Calendar.** Chockley referred to the calendar of expected items to be on Commission agendas and reviewed upcoming items. In answer to a question from Chick about the questions that will be in the community survey, Kreps said she would expect that the Township will want to inform the firm doing the survey which topics are to be included, but the wording of the questions should be left to the professionals.

There was discussion about whether the Planning Commission should review bids for the survey consultant and make a recommendation to the Board. It was agreed to put this on the April 15<sup>th</sup> Planning Commission agenda.

Dignan questioned whether the scope of work on the Master Plan should be expanded. Chockley referred to a memo distributed with the last Commission packet outlining the options of a narrower vs. a more expanded study area. Chick said she would not be opposed to that because she does not want it to look like the Master Plan revision is being considered because of a specific request by a specific developer. She said Biltmore may have been the trigger, but it would have been important to look at this issue anyway.

Kreps said the point of a community survey is to gauge the feelings of the residents without focusing on a particular area. Fink said the methodology will be scientific, but it has yet to be determined whether random sampling will be used.

Chockley said she would not be opposed to throwing out the Master Plan Amendment request and working on the Master Plan revision. She said she is not afraid of hearing what the public has to say. She said Biltmore did not provide the studies requested, which is why the Planning Commission did not proceed with their request, but now the sewer study is available, a community survey is being planned, and traffic information is being gathered.

Dignan said traffic studies are not needed for developing a Master Plan which looks 20 years into the future.

Prepared by Lisa Lemble.

Corrections to the originally issued minutes are indicated as follows:

Wording removed is ~~stricken through~~; wording added is underlined.

Adopted on \_\_\_\_\_, 2015.

12C. **Development of Planning Commission Agenda.** Stanalajcz0 said he thinks Commission agendas should be developed and published by the Township staff based on input from the Commission and planning consultant, rather than by the Commission chair. He said this is part of the move to a Township Manager form of government in order to provide continuity of services. He said that is the way the Township Board agendas are done. It was agreed the Commission should work toward having staff handle more of these functions as appropriate and as new staff are trained.

13. SECOND CALL TO THE PUBLIC

**Sewer Study.** David Gordon said it would not be appropriate to given away REUs that have been paid for by members of sewer districts to owners of new developments. He referred to the millage required to be paid by Sylvan Township residents because of a failed housing plan that a developer walked away from.

14. COMMENTS FROM THE COMMISSIONERS

Roman noted that an article about Cottonwood Farm in Webster Township (referred to during discussion of the Rohant Foulkes proposal) was published on MLive on January 15<sup>th</sup>.

Fink reported that the US-23 project passed the Washenaw Area Transportation Study (WATS) technical committee on a close vote so will move on in the approval process.

15. ANNOUNCEMENT OF NEXT MEETING

**April 15, 2015**, at 7:00 P.M. at the Public Safety Building was announced as the next regular Commission meeting time and location.

16. ADJOURNMENT

► **Motion:** Chick moved, Dignan supported, that the meeting be adjourned.

**Motion carried 6—0 on a voice vote.**

The meeting was adjourned at 10:07 P.M.

Marlene Chockley, Chair

Mark Stanalajcz0, Secretary